NAP ALLADIUM

Mining for Clean Air

North American Palladium Ltd.
Management Discussion and Analysis
Year-End 2018

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CORPORATE OVERVIEW

North American Palladium Ltd. is domiciled in Canada and was incorporated on September 12, 1991 under the *Canada Business Corporations Act*. The address of the company's registered office is One University Avenue, Suite 1601, Toronto, Ontario, Canada, M5J 2P1. The company is an established precious metals producer that has been operating the Lac des Iles mine located in Ontario, Canada since 1993 through the company's 100%-owned subsidiary, Lac des Iles Mines Ltd.

Unless the context suggests otherwise, references to "NAP" or the "Company" or similar terms refer to North American Palladium Ltd. and its subsidiary, "LDI" refers to Lac des Iles Mines Ltd., or the Lac des Iles mine, as the context requires.

Located northwest of Thunder Bay, Ontario, the LDI mine produces palladium and by-product metals. In 2013, the Company commissioned a new underground shaft, expanding the underground mine. The mine presently uses both a ramp and a shaft to access underground operations which currently employs both the long-hole open stope and sub-level shrinkage ("SLS") mining methods. Ore from the underground mine is blended with ore mined from the Sheriff pit and low-grade stockpiles on surface to feed the mill. The mill operates on a 24-hour schedule, 7 days a week ("full-time"), having transitioned from a 14-day on and 14-day off ("batch processing") schedule in September 2017.

The Company has considerable exploration potential at the LDI mine, where a number of growth targets have been identified that could substantially add to the existing mine life. Additionally, the Company is engaged in an exploration program aimed at increasing its palladium reserves and resources on properties within trucking distance to the milling facility at the LDI mine site. As an established precious metals producer on a permitted property, the Company has the potential to convert exploration success into production and cash flow on an accelerated timeline.

The Company trades on the Toronto Stock Exchange ("TSX") under the symbol "PDL" and on the OTC Market under the symbol "PALDF".

Collectively, Brookfield Business Partners LP and its affiliates ("Brookfield") indirectly hold approximately 53.5 million common shares of the Company, representing approximately 91% of the issued and outstanding common shares.

NATURE OF REPORTING

The following is management's discussion and analysis ("MD&A") of the financial condition and results of operations, prepared to enable readers of the Company's consolidated financial statements and related notes to assess material changes in financial condition and results of operations for the year ended December 31, 2018 ("FY 2018"), compared to those of the respective prior year ended December 31, 2017 ("FY 2017"). This MD&A also provides discussion relating to changes in financial condition and results of operations relating to the three month period ended December 31, 2018 ("Q4 2018"), compared to those of the respective three month period in the prior year ("Q4 2017").

This MD&A has been prepared as of February 14, 2019 and is intended to supplement and complement the consolidated financial statements and notes thereto for the three months and year ended December 31, 2018 (collectively, the "Financial Statements"), which have been prepared in accordance with International Financial Reporting Standards ("IFRS"), applicable to the preparation of these financial statements, including IAS 1, Presentation of Financial Statements. Readers are encouraged to review the Financial Statements in conjunction with their review of this MD&A.

Unless otherwise noted, all financial results in this MD&A are prepared in accordance with IFRS and are expressed in millions of Canadian dollars, except share and per share amounts, and unit costs per ounce, per tonne mined and per tonne milled. All references to production ounces refer to payable production. Reference is also made to certain measures which management considers to be relevant for assessing business performance, but which do not conform with IFRS (referred to as ''Non-IFRS measures''). The Non-IFRS measures in this MD&A include: production cost per tonne milled; palladium revenue per ounce sold; cash cost per ounce of palladium sold, net of by-product revenues; Earnings Before Interest, Taxes, Depreciation and Amortization ("EBITDA"); adjusted EBITDA; and All-Inclusive Sustaining Cost ("AISC") amounts calculated per ounce of palladium. Refer to Non-IFRS measures on pages 25-28.

FORWARD -LOOKING INFORMATION

Certain information contained in this MD&A constitutes 'forward-looking statements' and 'forward-looking informaton' within the meaning of applicable Canadian securities laws. All statements other than statements of historical fact are forward-looking statements. The words 'planned', 'preliminary', 'expect', 'potential', 'believe', 'anticipate', 'contemplate', 'target', 'may', 'will', 'could', 'would', 'should', 'intend', 'estimate' and similar expressions identify forward-looking statements. Forward-looking statements included in this MD&A include, but are not limited to: information as to our strategy, plans or future financial or operating performance such as statements with respect to project timelines, production plans, projected cash flows or expenditures, operating cost estimates, mining methods, expected mining and milling rates, metal price and foreign exchange rates and other statements that express management's expectations or estimates of future performance.

The Company cautions the reader that such forward-looking statements involve known and unknown risk factors that may cause actual results to be materially different from those expressed or implied by forward-looking statements. Such risk factors include, but are not limited to: the risk that the LDI mine may not perform as planned, the possibility that commodity prices and foreign exchange rates may fluctuate, the possibility that the Company may not be able to generate sufficient cash to service its indebtedness and may be forced to take other actions, the possibility the Company will require substantial additional financing, the occurrence of events of default on the Company's indebtedness, hedging resulting in losses, competition, the possibility title to its mineral properties will be challenged, dependency on third parties for smelting and refining, inherent risks associated with development, exploration, mining and processing including risks related to tailings capacity and underground seismic activity, the risks associated with obtaining necessary licenses and permits, environmental hazards, uncertainty of mineral reserves and resources, changes in legislation, regulations or political and economic developments in Canada and abroad, employment disruptions including in connection with collective agreements between the Company and unions and litigation. For more details on these and other risk factors see the Company's most recent annual information form, which can be found on SEDAR at www.sedar.com.

Forward-looking statements are necessarily based upon a number of factors and assumptions that, while considered reasonable by management, are inherently subject to significant business, economic and competitive uncertainties and contingencies. The factors and assumptions contained in this MD&A, which may prove to be incorrect, include, but are not limited to: that the Company will continue in operation for the foreseeable future and will be able to realize on its assets and discharge its liabilities in the normal course of business, that metal prices and exchange rates between the Canadian and United States dollar will be consistent with the Company's expectations, that there will be no material delays affecting operations or the timing of ongoing projects, that prices for key mining and construction supplies, including labour costs, will remain consistent with the Company's expectations, and that the Company's current estimates of mineral reserves and resources are accurate. The forward-looking statements are not guarantees of future performance. The Company disclaims any obligation to update or revise any forward-looking statements, whether as a result of new information, events or otherwise, except as expressly required by applicable laws. Readers are cautioned not to put undue reliance on these forward-looking statements.

OPERATING AND FINANCIAL OVERVIEW

The following overview summarizes the increase or decrease in certain IFRS and Non-IFRS measures for the year ended December 31, 2018 in comparison to the year ended December 31, 2017, including spot pricing and foreign exchange rates as at December 31 for each respective period.

		FY 2018		FY 2017	Change
Market					
Spot Palladium Price (US$)	**$**	**1,270**	$	1,056	+ 20%
Palladium revenue per ounce sold (US$)[1]	**$**	**1,111**	$	876	+ 27%
Spot Foreign Exchange (CAD/USD)		**0.73**		0.80	- 8%
Production					
Tonnes ore mined (wet metric tonnes)		**4,342,335**		2,859,174	+ 52%
Tonnes milled (dry metric tonnes)		**4,237,734**		2,780,119	+ 52%
Tonnes of concentrate produced (dry metric tonnes)		**33,258**		22,980	+ 45%
Payable palladium ounces produced		**237,461**		201,592	+ 18%
Payable palladium ounces sold		**232,890**		197,311	+ 18%
Financing					
Net debt[2]	**$**	**36.8**	$	74.5	- 51%
Capital investment (excludes lease financing)	**$**	**54.6**	$	52.7	+ 4%
Capital Investments (lease financing)	**$**	**11.7**	$	9.8	+ 19%
Earnings					
Revenues	**$**	**396.8**	$	272.4	+ 46%
Production costs	**$**	**187.1**	$	153.2	+ 22%
Adjusted EBITDA[1]	**$**	**167.8**	$	86.2	+ 95%
AISC per palladium ounce produced (US$)[1]	**$**	**690**	$	694	- 1%
Cash cost per ounce of palladium sold (US$)[1]	**$**	**531**	$	509	+ 4%

1 Non-IFRS measure. Refer to Non-IFRS Measures on pages 25-28.

2 Net debt is comprised of total debt, net of cash and cash equivalents.

HEALTH AND SAFETY

The Company continually monitors its health and safety statistics, which are consolidated to determine the Total Recordable Injury Frequency ("TRIF"). The TRIF is calculated as the total number of reportable incidents, comprised of first aid and lost time incidents, multiplied by two hundred thousand and divided by the total man-hours worked during the period.

During the three months ended December 31, 2018, the LDI mine site realized 24 first aid incidents, 1 medical aid incident, and zero lost time incidents, resulting in a TRIF of 0.4. During the year ended December 31, 2018, the LDI mine site realized a TRIF of 2.2 compared to the most recent Ontario Mining TRIF of 3.4, as published for the period up to September 30, 2018.

COLLECTIVE BARGAINING UPDATE

On November 22, 2018, the Company announced that a new 3-year collective agreement has been ratified by the members of the United Steelworkers Local 9422 (the "USW"). The new collective agreement expires on May 31, 2021.

2018 YEAR IN REVIEW

The following summarizes certain significant events which have occurred during FY 2018.

Q1 2018

- Underground production was 569,468 tonnes (6,327 tonnes per day) at a grade of 3.3 grams per tonne.
- The mill processed 1,021,147 tonnes of ore, producing 57,053 ounces of payable palladium.
- Results of winter exploration program announced, including expanded mineralization at Sunday Lake.
- The board of directors initiates a strategic alternatives review.

Q2 2018

- Underground production was 532,865 tonnes (5,856 tonnes per day) at an average grade of 3.0 grams per tonne.
- The mill processed 1,077,472 tonnes of ore, producing 57,652 ounces of payable palladium.
- The Company signs a letter of intent with Gull Bay First Nation.

Q3 2018

- Underground production was 565,277 tonnes (6,144 tonnes per day) at an average grade of 3.2 grams per tonne.
- The mill processed 1,028,361 tonnes of ore, producing 56,852 ounces of payable palladium.

Q4 2018

- Underground mining production of 618,211 tonnes (6,720 tonnes per day) at an average grade of 3.3 grams per tonne.
- The mill processed 1,110,754 tonnes of ore, producing 65,904 ounces of payable palladium.
- NI 43-101 technical report filed on SEDAR, reflecting an extension of the mine life by one year, to 2027, and expansion of the underground mine using bulk mining methods, increasing average underground production from 6,000 to more than 12,000 tonnes per day.
- The Company replaced its previous credit facility with a new 5-year credit facility agreement, which was utilized to repay outstanding principal of US$35.0 relating to its senior secured term loan that was to mature on December 31, 2018.
- Collective agreement ratified with the USW.
- The Company completed a private placement of 714,257 flow-through common shares for gross proceeds of $10.0.
- The Company recognized the future benefit of $43.5 of deferred tax assets in its consolidated financial statements.
- The board of directors announced the conclusion of the strategic alternatives review.
- The Company submitted an updated mine closure plan, affecting the valuation of its asset retirement obligations ("ARO").

FY 2018

- Net income of $119.2 ($85.5 before net tax recovery) for the year, compared to net income of $36.1 ($39.3 before net tax expense) in FY 2017. The Company recognized deferred tax assets of $43.5 at December 31, 2018, relating to LDI's previously unrecognized income tax losses. The Company considers it probable that future taxable income will be generated by its operations in order to realize these deferred tax assets.
- Capital additions of $66.3, compared to $62.5 in FY 2017.
- Income from mining operations of $122.8, compared to cash used in operations of $58.1 for FY 2017.
- Reduction of total debt in the amount of $36.5.
- Average underground production rate of 6,263 tonnes per day, compared to 5,198 tonnes per day for FY 2017.
- The milled processed 4,237,734 tonnes of ore, compared to 2,780,119 tonnes processed in FY 2017.
- Production yielded 237,461 ounces of payable palladium, compared to 201,592 ounces of payable palladium in FY 2017.
- Cummulative production of 237,461 ounces of palladium was within guidance of 230,000 to 240,000 ounces.

LDI OPERATING & FINANCIAL RESULTS

Operations at LDI consist of an underground mine accessed via shaft and ramp, an open pit, a low-grade surface stockpile, and a mill with a nameplate processing capacity of 15,000 tonnes per day. The primary underground deposits on the property are the Offset and Roby zones. During the three month period and year ended December 31, 2018, mill feed included underground ore which was supplemented with ore from the Sheriff pit and low-grade ore from the surface stockpile. Mill feed for the comparative three month period and year ended December 31, 2017 consisted of underground ore, supplemented with low-grade ore from the surface stockpile.

Operating Metrics

The key operating results for 2018 and 2017 are set out in the following table.

	Three months ended December 31		Year ended December 31	
	2018	2017	**2018**	2017
Ore mined (wet metric tonnes)[1]				
Underground	**618,211**	578,249	**2,285,821**	1,897,114
Sheriff open pit	**244,835**	-	**696,333**	-
Surface stockpiles	**303,509**	403,847	**1,360,181**	962,060
Total	**1,166,555**	982,096	**4,342,335**	2,859,174
Mined ore grade (Pd g/t)				
Underground	**3.3**	3.5	**3.2**	3.9
Sheriff open pit	**2.1**	-	**1.6**	-
Surface stockpiles	**0.8**	0.9	**0.9**	0.9
Milling				
Tonnes milled (dry metric tonnes)	**1,110,754**	1,037,185	**4,237,734**	2,780,119
Palladium recoveries (%)	**80.2**	80.4	**80.1**	80.6
Palladium concentrate grade (g/t)	**226**	271	**234**	286
Tonnes of concentrate produced (dry metric tonnes)	**9,632**	7,206	**33,258**	22,980
Production cost per tonne milled[2]	**$ 45**	$ 42	**$ 45**	$ 57
Payable production				
Palladium (oz)	**65,904**	58,000	**237,461**	201,592
Platinum (oz)	**4,439**	3,794	**16,368**	12,267
Gold (oz)	**4,238**	3,784	**15,816**	13,295
Nickel (lbs)	**-**	-	**-**	70,517
Copper (lbs)	**1,102,321**	789,894	**4,546,499**	3,123,144
Palladium sales – payable ounces	**60,731**	57,323	**232,890**	197,311
Palladium revenue per ounce sold (US$)[2]	**$ 1,339**	$ 1,001	**$ 1,111**	$ 876
Other results[2]				
AISC per ounce of palladium produced (US$)[2]	**$ 670**	$ 734	**$ 690**	$ 694
Cash cost per ounce of palladium sold (US$)[2]	**$ 513**	$ 463	**$ 531**	$ 509

1 The determination of mined tonnes requires reliance upon various estimates, including estimated load factors assigned to trucks and the shaft skips, density factors, the impact of seasonal conditions, and the variability of the moisture content at the time of extraction.

2 Non-IFRS measure. Refer to Non-IFRS measures on pages 25-28.

Mining

For Q4 2018, underground ore mined at LDI consisted of 618,211 tonnes (6,720 tonnes per day) at an average palladium grade of 3.3 g/t compared to 578,249 tonnes (6,285 tonnes per day) at an average palladium grade of 3.5 g/t in Q4 2017. In Q4 2018, LDI mined 244,835 tonnes of surface ore from Sheriff pit at an average grade of 2.1 g/t and 303,509 tonnes from the low-grade surface stockpile at an average grade of 0.8 g/t (Q4 2017 - 403,847 tonnes of surface ore from the low-grade surface stockpile at an average grade of 0.9 g/t).

For FY 2018, underground ore mined at LDI consisted of 2,285,821 tonnes (6,263 tonnes per day) at an average palladium grade of 3.2 g/t compared to 1,897,114 tonnes (5,198 tonnes per day) at an average palladium grade of 3.9 g/t in FY 2017. For the year ended December 31, 2018, LDI extracted 696,333 tonnes of surface ore from Sheriff pit at an average grade of 1.6 g/t and 1,360,181 tonnes of surface ore from the low-grade surface stockpile at an average grade of 0.9 g/t (2017 - 962,060 tonnes of surface ore from the low-grade surface stockpile at an average grade of 0.9 g/t). On a combined basis, 51.9% additional tonnes of ore were mined in FY 2018 compared to FY 2017.

Milling

During Q4 2018, the LDI mill processed 1,110,754 dry metric tonnes of ore at an average head grade of 2.4 grams of palladium per tonne and a palladium recovery rate of 80.2%, producing 9,632 tonnes of concentrate with an average grade of 226 grams of palladium per tonne. In comparison, the mill processed 1,037,185 dry metric tonnes of ore in Q4 2017 at an average palladium head grade of 2.3 grams of palladium per tonne and a palladium recovery rate of 80.4% yielding 7,206 tonnes of concentrate with a palladium concentrate grade of 271 grams of palladium per tonne. The LDI mill transitioned to full-time operation in September 2017.

During FY 2018, the LDI mill processed 4,237,734 dry metric tonnes at an average head grade of 2.3 grams of palladium per tonne and a palladium recovery rate of 80.1%, producing 33,258 tonnes of concentrate with an average grade of 234 grams of palladium per tonne. In comparison, the mill processed 2,780,119 dry metric tonnes of ore in FY 2017 at an average palladium head grade of 2.9 grams of palladium per tonne and a palladium recovery rate of 80.6% yielding 22,980 tonnes of concentrate with a palladium concentrate grade of 286 grams of palladium per tonne.

Payable Production

Palladium production and sales totals vary due to the timing of concentrate shipments to customer smelters. As a result, ounces produced may be reflected in inventory in the month of production and recognized as sold in the subsequent month when delivered to customer smelters.

In Q4 2018, payable palladium production was 65,904 ounces while payable palladium sales were 60,731 ounces in comparison to 58,000 ounces produced and 57,323 ounces sold in Q4 2017. The increased production in 2018 is attributed to increased underground production combined with increased surface ore mined. Overall, an additional 73,569 tonnes were milled in Q4 2018 in comparison to Q4 2017.

In FY 2018, payable palladium production was 237,461 ounces while payable palladium sales were 232,890 ounces in comparison to 201,592 ounces produced and 197,311 ounces sold in FY 2017. Overall, payable production in FY 2018 for palladium, platinum, gold, and copper was higher compared to FY 2017. The increased production in 2018 is attributed to increased underground production combined with increased surface ore mined. Overall, an additional 1,457,615 tonnes were milled in FY 2018 in comparison to FY 2017.

Financial Results

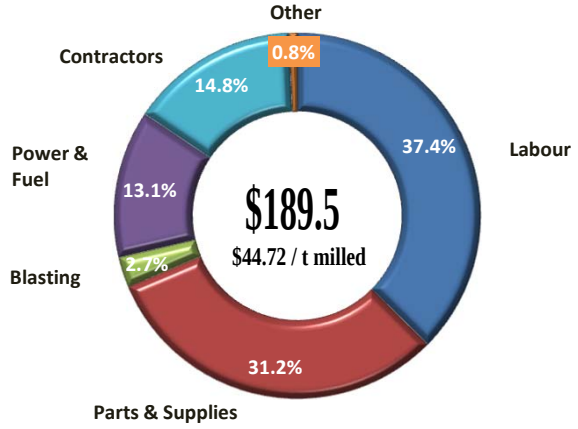
The Company has included income from mining operations as an additional IFRS measure to provide the reader with additional information for the results of LDI operations. Income from mining operations for LDI operations is summarized in the following table.

	Three months ended December 31		Year ended December 31	
($millions)	**2018**	2017	**2018**	2017
Revenue	**$ 122.5**	$ 87.1	**$ 396.8**	$ 272.4
Smelting, refining and freight costs	**4.9**	3.7	**17.4**	12.2
Royalty expense	**5.4**	4.2	**17.0**	12.8
Net revenue	**112.2**	79.2	**362.4**	247.4
Mining operating expenses				
Production costs				
Mining	**30.4**	26.8	**116.0**	99.8
Milling	**11.6**	9.6	**46.0**	34.5
General and administration	**7.6**	6.7	**27.5**	24.2
	49.6	43.1	**189.5**	158.5
Inventory and other costs	**(3.4)**	(2.9)	**(2.4)**	(5.3)
Total production costs	**46.2**	40.2	**187.1**	153.2
Depreciation and amortization[2]	**15.9**	12.0	**52.8**	35.5
Inventory price adjustment	**-**	-	**-**	(0.2)
(Gain) loss on disposal of equipment	**(0.3)**	0.4	**(0.3)**	0.8
Total mining operating expenses[2]	**61.8**	52.6	**239.6**	189.3
Income from mining operations[2]	**$ 50.4**	$ 26.6	**$ 122.8**	$ 58.1
Net income[2]	**$ 77.5**	$ 14.3	**$ 119.2**	$ 36.1
Net income per share[2]	**$ 1.33**	$ 0.25	**$ 2.05**	$ 0.62
Adjusted EBITDA[1]	**$ 64.2**	$ 36.9	**$ 167.8**	$ 86.2
Capital investment, including non-cash financing leases	**$ 11.9**	$ 12.7	**$ 66.3**	$ 62.5

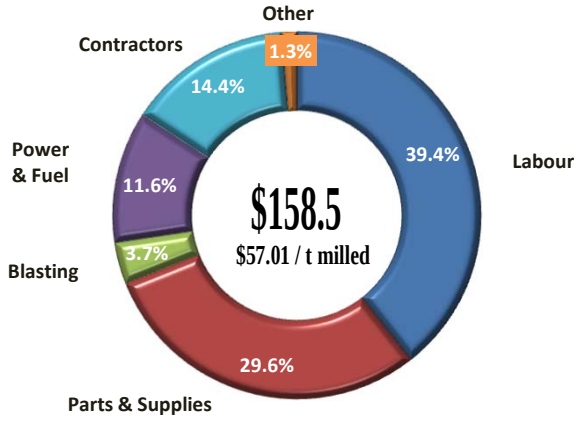
1 Non-IFRS measure. Please refer to Non-IFRS Measures on pages 25-28.
2 During the year ended December 31, 2018, while calculating depreciation of mining interests subsequent to the release of the updated mineral reserve and resource statement effective July 4, 2018, the Company determined that the historical unit of production methodology, which was based on produced ounces of palladium as compared to total contained ounces on the previous reserve and resource statement, would result in a misallocation of depreciation over the remaining estimated life of the mine. The Company has adjusted its depreciation policy for mineral properties to depreciate the carrying amount using the units of production method based on tonnage of ore processed as compared to the total tonnes of ore included within mineral reserves and resources based on the current reserve statement, including a portion of measured resources expected to be converted to reserves based on prior conversion rates. The Company has revised the comparative figures to correct the immaterial impact of this item.

The breakdown of production costs, before inventory and others costs, for the year ended December 31, 2018 and 2017 are summarized in the charts below.

2018 Mine Operating Expenses



2017 Mine Operating Expenses



Revenue

Revenue is derived from metal sales denominated in U.S. dollars and is affected by metal production and resulting sales volumes, commodity prices, currency exchange rates and concentrate shipment schedules, as well as other variables. Metal sales for LDI are provisionally recognized based on forward market prices upon the delivery of concentrate to the smelter or the designated shipping point, which is when customers obtain control of the concentrate. Final pricing is determined in accordance with the Company's smelter agreements. Final pricing for gold and copper generally occurs two months after delivery and final pricing for palladium and platinum is determined three months after delivery. Final pricing adjustments can result in additional revenues in a rising commodity price environment and reductions to revenue in a declining commodity price environment. Similarly, a weakening in the Canadian dollar relative to the U.S. dollar would have a positive impact on revenues and a strengthening in the Canadian dollar would have a negative impact on revenues. Gains and losses on derivative financial instruments used to mitigate commodity price and foreign exchange risk are recorded on the consolidated statement of operations and comprehensive income in revenue from metal sales as pricing adjustments.

Revenue for the three months ended December 31, 2018

($millions)	Palladium	Platinum	Gold	Copper	Others	Total
Sales volume[1]	**60,731**	**4,068**	**3,922**	**1,035,720**	**n.a.**	**n.a.**
Revenue before price adjustment	**$ 92.7**	**$ 4.6**	**$ 6.5**	**$ 3.7**	**$ -**	**$ 107.5**
Price adjustment:						
Commodities[2]	**10.2**	**(0.3)**	**0.3**	**(0.1)**	**-**	**10.1**
Foreign exchange[2]	**4.1**	**0.3**	**0.3**	**0.2**	**-**	**4.9**
Revenue ($millions)	**$ 107.0**	**$ 4.6**	**$ 7.1**	**$ 3.8**	**$ -**	**$ 122.5**

Revenue for the three months ended December 31, 2017

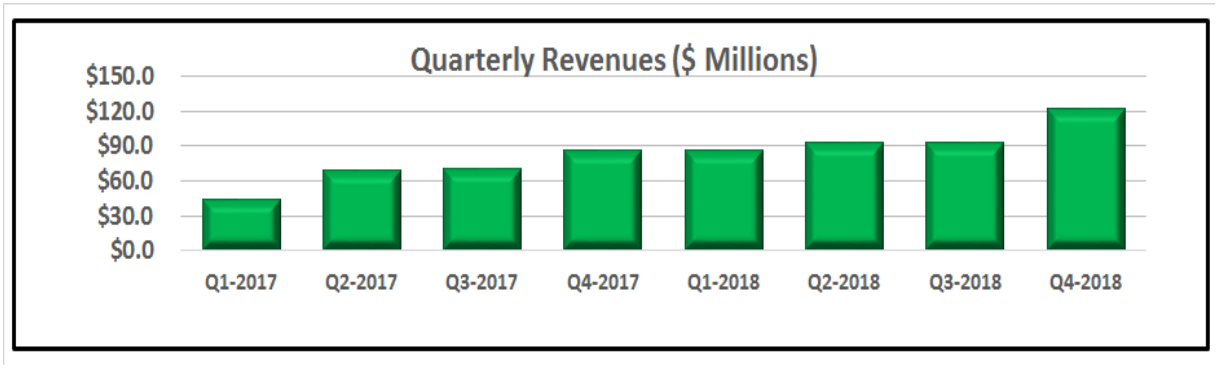
($millions)	Palladium	Platinum	Gold	Copper	Others	Total
Sales volume[1]	57,323	3,695	3,798	779,858	n.a.	n.a.
Revenue before price adjustment	$ 76.2	$ 4.4	$ 6.3	$ 3.3	$ -	$ 90.2
Price adjustment:						
Commodities[2]	(4.1)	0.2	-	0.1	-	(3.8)
Foreign exchange[2]	0.5	-	0.1	0.1	-	0.7
Revenue ($millions)	$ 72.6	$ 4.6	$ 6.4	$ 3.5	$ -	$ 87.1

1 Sales volumes are reported in payable ounces for palladium, platinum and gold and payable pounds for copper.

2 Pricing adjustments are net of offsetting realized and unrealized gains (losses) on derivative financial contracts as noted below.

Revenue for Q4 2018 increased by $35.4 or 40.6% compared to Q4 2017, due to an increase in palladium pricing and an increase in payable palladium sold.

For comparison, the below chart illustrates the quarterly revenues for the period of January 1, 2017 to December 31, 2018.



Revenue for the year ended December 31, 2018

($millions)	Palladium	Platinum	Gold	Copper	Others	Total
Sales volume[1]	**232,890**	**16,079**	**15,519**	**4,480,039**	**n.a.**	**n.a.**
Revenue before price adjustment	**$ 309.8**	**$ 18.4**	**$ 25.5**	**$ 16.9**	**$ -**	**$ 370.6**
Price adjustment:						
Commodities[2]	**19.1**	**(0.8)**	**(0.1)**	**(0.3)**	**-**	**17.9**
Foreign exchange[2]	**7.0**	**0.5**	**0.5**	**0.3**	**-**	**8.3**
Revenue ($millions)	**$ 335.9**	**$ 18.1**	**$ 25.9**	**$ 16.9**	**$ -**	**$ 396.8**

1 Sales volumes are reported in payable ounces for palladium, platinum and gold and payable pounds for copper.

2 Pricing adjustments are net of offsetting realized and unrealized gains (losses) on derivative financial contracts as noted below.

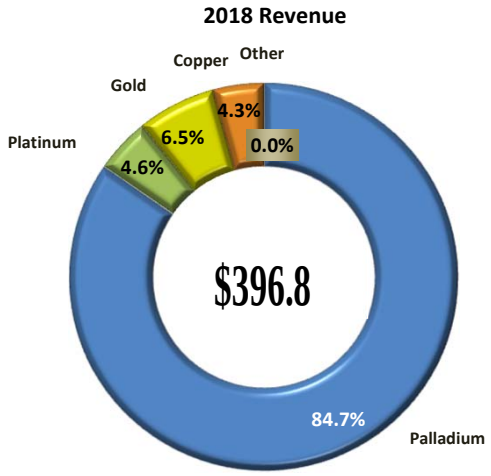
Revenue for the year ended December 31, 2017

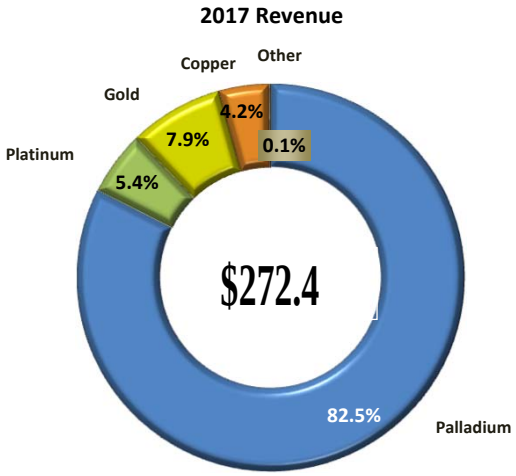
($millions)	Palladium	Platinum	Gold	Copper	Others	Total
Sales volume[1]	197,311	11,906	13,019	3,044,826	n.a.	n.a.
Revenue before price adjustment	$ 230.7	$ 14.6	$ 21.4	$ 11.3	$ 0.2	$ 278.2
Price adjustment:						
Commodities[2]	(3.1)	0.3	0.3	0.3	0.1	(2.1)
Foreign exchange[2]	(3.0)	(0.3)	(0.3)	(0.1)	-	(3.7)
Revenue ($millions)	$ 224.6	$ 14.6	$ 21.4	$ 11.5	$ 0.3	$ 272.4

1 Sales volumes are reported in payable ounces for palladium, platinum and gold and payable pounds for copper.

2 Pricing adjustments are net of offsetting realized and unrealized gains (losses) on derivative financial contracts as noted below.

Revenue for FY 2018 increased by $124.4 or 45.7% compared to FY 2017, due to an increase in palladium prices and an increase in payable palladium sold.





Pricing adjustments for palladium are comprised of proceeds of sales to smelters and realized and unrealized gains (losses) on derivative financial contracts for past palladium production. The following summary provides the allocation of the respective commodity and foreign exchange pricing adjustments in each of the respective years ending:

Pricing adjustments for the three months ended December 31	**Palladium sales 2018**	**Derivative contracts 2018**	**Net sales 2018**	**Palladium sales 2017**	**Derivative contracts 2017**	**Net sales 2017**
Commodities	**$ 10.9**	**$ (0.7)**	**$ 10.2**	$ 6.2	$ (10.3)	$ (4.1)
Foreign exchange	**5.5**	**(1.4)**	**4.1**	0.8	(0.3)	0.5
Net pricing adjustments	**$ 16.4**	**$ (2.1)**	**$ 14.3**	$ 7.0	$ (10.6)	$ (3.6)

Pricing adjustments for the year ended December 31	**Palladium sales 2018**	**Derivative contracts 2018**	**Net sales 2018**	**Palladium sales 2017**	**Derivative contracts 2017**	**Net sales 2017**
Commodities	**$ 15.9**	**$ 3.2**	**$ 19.1**	$ 21.9	$ (25.0)	$ (3.1)
Foreign exchange	**8.7**	**(1.7)**	**7.0**	(3.6)	0.6	(3.0)
Net pricing adjustments	**$ 24.6**	**$ 1.5**	**$ 26.1**	$ 18.3	$ (24.4)	$ (6.1)

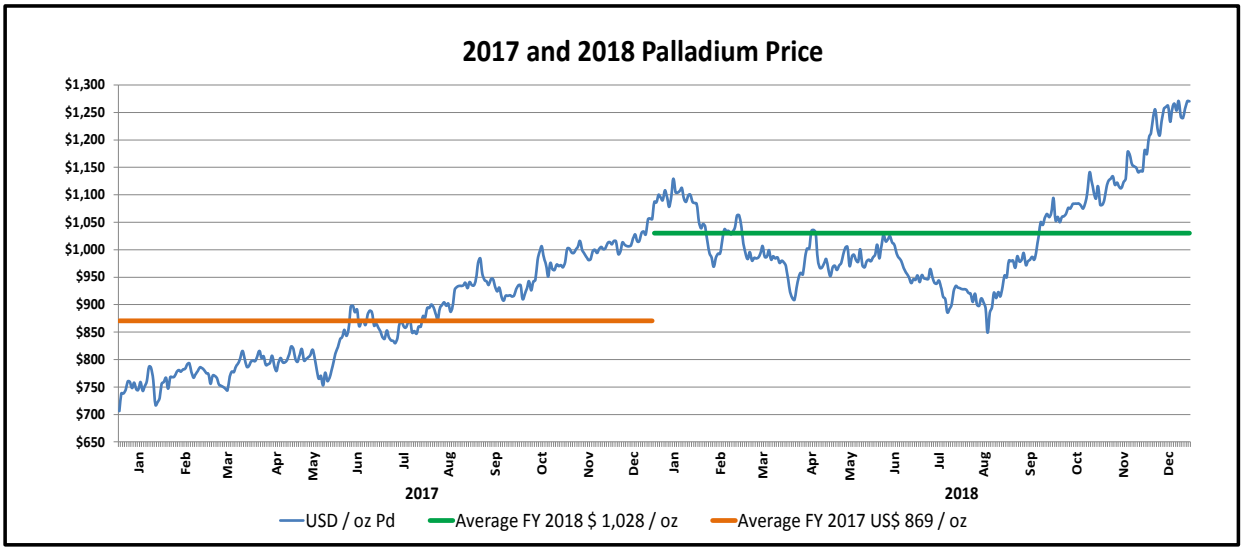
Spot Metal Prices and Exchange Rates*

For comparison purposes, the following table sets out spot metal prices and exchange rates at each respective date.

	31-Dec 2018	30-Sep 2018	30-Jun 2018	31-Mar 2018	31-Dec 2017	30-Sep 2017	30-Jun 2017	31-Mar 2017
Palladium – US$/oz	**$1,270**	$1,094	$953	$970	$1,056	$935	$841	$798
Platinum – US$/oz	**$788**	$815	$851	$936	$927	$920	$922	$940
Gold – US$/oz	**$1,282**	$1,187	$1,250	$1,324	$1,297	$1,283	$1,242	$1,245
Nickel – US$/lb	**$4.80**	$5.66	$6.76	$6.01	$5.56	$4.80	$4.21	$4.48
Copper – US$/lb	**$2.71**	$2.80	$3.01	$3.03	$3.25	$2.94	$2.68	$2.65
Exchange rate (Bank of Canada) CDN$1 = US$	**US$ 0.73**	US$ 0.77	US$ 0.76	US$ 0.78	US$ 0.80	US$ 0.80	US$ 0.77	US$ 0.75

** Based on the London Metal Exchange as at period ending.*

For further comparison, the below chart illustrates the daily and average U.S. denominated palladium metal price for the period of January 1, 2017 to December 31, 2018.



Palladium Market

Palladium was one of the best-performing metals in 2018, with its price surging to almost US$1,300 per ounce at year-end. The palladium market has been in a fundamental deficit for several years, persisting throughout 2018. The key drivers of higher palladium demand are increasingly strident emission standards around the globe and the introduction of Real Driving Emissions (RDE) standards in the European Union and China. RDE standards require outdoor driving tests taken under various conditions in addition to the existing lab-based tests. Higher palladium loadings are now required in catalytic converters to meet these high standards. Tests show that platinum does not perform as well as palladium in these tests, limiting the likelihood of significant substitution. Other factors driving palladium demand are increased US sales of larger vehicles, the substitution of diesel engines with gasoline engines in Europe and flat global mine supply.

Smelting, refining and freight costs

Smelter treatment costs and freight charges are based upon the quantity of concentrate shipped and sold to smelters, while refining costs are based on payable metal contained in the concentrate. Additionally, smelting and refining costs are incurred in U.S. dollars and are positively or negatively impacted by the Canadian dollar/U.S. dollar exchange rate.

Total concentrate shipped in Q4 2018 was 9,324 tonnes compared to 7,049 tonnes shipped in Q4 2017. Smelting, refining and freight costs for the three month period ended December 31, 2018 were $4.9, representing an increase of 32% compared to $3.7 in the respective three month period in 2017.

Total concentrate shipped in FY 2018 was 33,114 tonnes compared to 22,398 tonnes shipped in FY 2017. Smelting, refining and freight costs for the year ended December 31, 2018 were $17.4, representing an increase of 43% compared to $12.2 for the year ended December 31, 2017.

The increased smelter treatment, refining, and freight costs for the three month period and year ended December 31, 2018 resulted from additional concentrate shipments and payable palladium sold during those periods compared to concentrate shipped during the respective three month period and year ended December 31, 2017. The increase in smelter treatment and refining costs, which are settled in U.S. dollars, was further increased by the weakening of the Canadian dollar, with the average quarterly foreign exchange rates (CAD/USD) decreasing from 0.79 in Q4 2017 to 0.76 in Q4 2018.

The Company had 1,345 tonnes of undelivered concentrate on-hand that was included in inventory at December 31, 2018 compared to 661 tonnes of undelivered concentrate on-hand and included in inventory at December 31, 2017.

Royalty expense

Royalty expense in Q4 2018 was $5.4 compared to $4.2 in Q4 2017, while royalty expenses for FY 2018 were $17.0 compared to $12.8 in FY 2017. The increased royalty costs during the 2018 periods, compared to those for 2017, were due to higher net smelter revenues. The increase in royalty costs, which are settled in U.S. dollars, was also due to the weakening of the Canadian dollar, with the average quarterly foreign exchange rates (CAD/USD) decreasing from 0.79 in Q4 2017 to 0.76 in Q4 2018.

Palladium Revenue per Ounce Sold

Palladium revenue per ounce sold ($US) is a Non-IFRS measure for which the calculation is provided in the Non-IFRS measures section on pages 25-28 of this MD&A.

At December 31, 2018, the palladium spot price of US$1,270 per ounce was 20% higher than the palladium spot price of US$1,056 per ounce at December 31, 2017. The average palladium revenue per ounce sold for Q4 2018 was US$1,339 compared to the average palladium revenue per ounce sold of US$1,001 for Q4 2017. Payable palladium ounces sold in Q4 2018 was 6% higher than in Q4 2017.

Average palladium revenue per ounce sold for FY 2018 was US$1,111 compared to the average palladium revenue per ounce sold of US$876 for FY 2017. Payable palladium ounces sold in FY 2018 was 18% higher than in FY 2017.

The following chart compares the spot palladium price for each reporting period to the respective palladium revenue per ounce sold.

	2018					**2017**				
	Q1	Q2	Q3	**Q4**	**Average**	Q1	Q2	Q3	Q4	Average
Palladium - Spot Price (US$/ounce)	$ 970	$ 953	$ 1,094	**$ 1,270**	**$ 1,072**	$ 798	$ 841	$ 935	$ 1,056	$ 870
Palladium revenue per ounce sold (US$)	$ 1,001	$ 986	$ 1,114	**$ 1,339**	**$ 1,111**	$ 812	$ 799	$ 882	$ 1,001	$ 876

Production costs

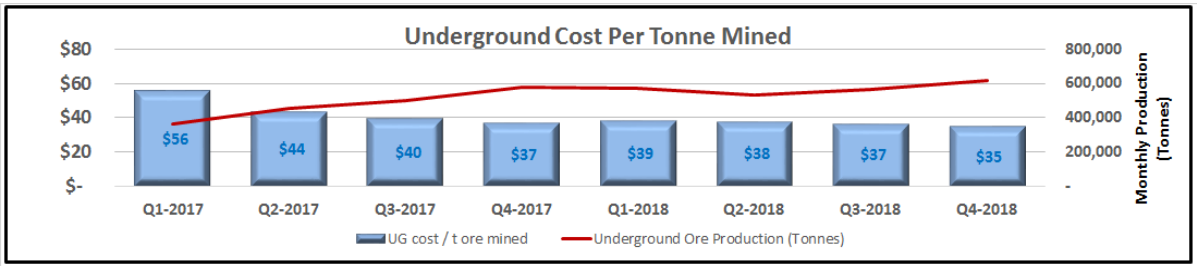
Production costs are comprised of mining costs related to surface and underground mining operations, milling costs, general and administrative costs, and inventory and other costs. Total production costs in Q4 2018 were $46.2, an increase of 15% compared to $40.2 in Q4 2017 and total production costs for FY 2018 were $187.1, an increase of 22% compared to $153.2 in FY 2017. These increases to production costs are a direct result of increased production in 2018 relating to the transition to full-time mill operations. Mill production in Q4 2018 increased by 7% compared to Q4 2017, whereas mill production for FY 2018 increased by 52% over FY 2017.

Mining costs

Mining costs are comprised of surface and underground mining costs. Surface mining costs consist of all costs related to activities regarding the mining and movement of ore and waste rock on surface, including the movement of stockpiled material. Underground mining costs include all respective costs of production, extraction, and haulage of ore and waste rock to the surface via both ramp and shaft.

Mining costs in Q4 2018 increased by $3.6 or 13% compared to Q4 2017, whereas mining costs in FY 2018 increased by $16.2 or 16% compared to FY 2017. The increase in costs for Q4 2018 related to increased underground production and additional surface mining costs in the Sheriff Pit.

Mining costs for Q4 2018 consisted of $8.6 for surface operations and $21.8 for underground operations, compared to $5.2 for surface operations and $21.6 for underground operations in Q4 2017. For FY 2018, mining costs consisted of $31.0 for surface operations and $85.0 for underground operations, compared to $18.0 for surface operations and $81.8 for underground operations in FY 2017. As illustrated in the following graph, underground costs, expressed in dollars per metric tonne, have been declining as the underground production rate has increased.



Milling costs

Milling costs reflect costs related to the crushing and processing of ore to yield saleable palladium concentrate, including the costs related to the maintenance of the tailings management facility. Milling costs in Q4 2018 increased by $2.0 or 21% compared to Q4 2017, due to aditional maintenance expenditures during 2018. An additional 73,569 tonnes were milled in Q4 2018 compared to Q4 2017.

Milling costs in FY 2018 increased by $11.5 or 33% compared to FY 2017, due to the transition to full-time mill operations and related maintenance costs. An additional 1,457,615 tonnes were milled in FY 2018 compared to FY 2017, resulting in a reduced unit cost to $11 per milled tonne for FY 2018 compared to $12 per milled tonne in FY 2017.

General and administration costs

General and administration costs represent costs specific to the mine site that relate to management, human resources, environmental, finance, and information and technology. Mine site general and administration costs in Q4 2018 increased by $0.9 or 13% compared to Q4 2017, whereas general and administration costs in FY 2018 increased by $3.3 or 14% compared to FY 2017. The increase in general and administration costs in 2018 are related to ongoing production improvement initiatives.

Inventory and other costs

Inventory adjustments include the allocation of costs to crushed and broken ore stockpiles and to concentrate inventory. Inventory movements decreased production costs for Q4 2018 by $3.4, compared to the decrease to production costs of $2.9 in Q4 2017. Inventory movements decreased production costs for FY 2018 by $2.4, compared to the decrease to production costs of $5.3 in FY 2017.

Depreciation and Amortization

Depreciation and amortization for the three months and year ended December 31, 2018 were $15.9 and $52.8, respectively, compared to $12.0 and $35.5 in the comparable 2017 periods. The 2018 increase over the prior year was primarily due to a higher unit of production depletion related to higher tonnes milled and the effect of gross additions to mining interests during the twelve month period of December 31, 2017 to December 31, 2018.

On October 2, 2018, the Company filed a new feasibility study on SEDAR, incorporating major changes to the life of mine plan for the Lac des Iles mine. The study was prepared in accordance with National Instrument 43-101 – Standards of Disclosure for Mineral Projects and was based on closing reserves and resources as at June 30, 2018. The report provided additional reserves and resources for the LDI mine, resulting in an increase in the estimated tonnes of ore used as the denominator for depreciation and amortization of certain assets under the unit-of-production method. The revised estimate for the denominator was based on the inclusion of the proven and probable reserves and measured resources expected to be converted to reserves based on prior conversion rates. This change in estimate has been prospectively applied for all depreciation and amortization calculations effective July 1, 2018.

While calculating depreciation of mining interests subsequent to the release of the updated mineral reserve and resource statement, the Company determined that the historical unit of production methodology, which was based on produced ounces of palladium as compared to total contained ounces on the previous reserve and resource statement, would result in a misallocation of depreciation over the remaining estimated life of the mine. The Company has adjusted its depreciation policy for mineral properties to depreciate the carrying amount using the units of production method based on tonnage of ore processed as compared to the total tonnes of ore included within mineral reserves and resources based on the current reserve statement, including a portion of measured resources expected to be converted to reserves based on prior conversion rates. The Company has recast the comparative figures to correct the immaterial impact of this item.

The following Non-IFRS measures were calculated based on production costs.

Production Costs per Tonne Milled

Production costs per tonne milled is a Non-IFRS measure for which the calculation is provided in the Non-IFRS Measures section on pages 25-28 of this MD&A.

Production costs per tonne milled was $45 for Q4 2018 compared to $42 in Q4 2017 and was $45 for FY 2018 compared to $57 for FY 2017. The year-on-year reduction in production cost per tonne milled reflects the economies of scale realized by the increase in underground production rate and the transition to full-time mill operations, which resulted in 73,569 additional tonnes milled in Q4 2018 compared to Q4 2017 and 1,457,615 additional tonnes milled in FY 2018 compared to FY 2017.

Cash Cost per Ounce of Palladium Sold, Net of By-Product Revenues

Cash cost per ounce of palladium sold, net of by-product revenues is a Non-IFRS measure. The calculation of cash cost per ounce of palladium sold is provided in the Non-IFRS Measures section on pages 25-28 of this MD&A.

The cash cost per ounce of payable palladium sold was US$513 ($675) in Q4 2018 compared to US$463 ($586) in Q4 2017. Production costs, smelting, refining, freight and royalty expenses increased by $8.4 in Q4 2018 compared to Q4 2017, due to increased ore production, partially related to the Sheriff pit operations in 2018. Overall, the increase in production costs and lower head grades realized, yielded an increase in the cash cost per ounce of palladium sold of $89, which was partially offset by the impact of a 4% decrease to the foreign exchange rate from Q4 2017 to Q4 2018, resulting from the strengthening of the U.S dollar, relative to the Canadian dollar.

In FY 2018, the cash cost per ounce of payable palladium sold was US$531 ($690) compared to US$509 ($661) for FY 2017. This increase in unit cost is a result of increased production costs related to the Sheriff pit operations in FY 2018 and lower head grades that resulted in reduced metal sales per tonne of ore processed for FY 2018, compared to FY 2017.

AISC per Ounce of Palladium Produced

The AISC per ounce of palladium produced is a Non-IFRS measure. The calculation of the AISC per ounce of palladium produced is provided in the Non-IFRS Measures section on pages 25-28 of this MD&A.

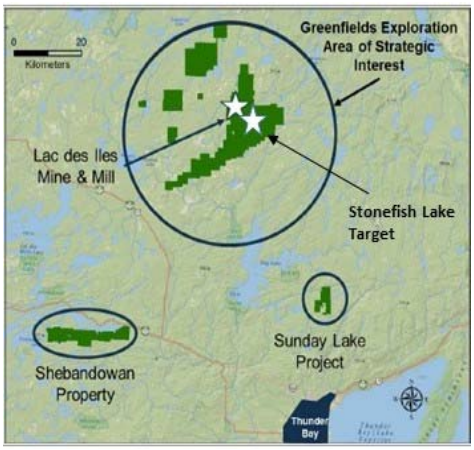
The AISC per ounce of palladium produced was US$670 ($882) for Q4 2018 compared to US$734 ($929) for Q4 2017. The year-over-year decrease in unit cost is a result of lower sustaining capital costs of $4.1 and a stronger U.S dollar, relative to the Canadian dollar, in Q4 2018 compared to Q4 2017.

The AISC per ounce of palladium produced for FY 2018 was US$690 ($896) compared to US$694 ($901) for FY 2017. The decrease in unit cost is a result of increased by-product credits per ounce of palladium in FY2018, partially offset by increased sustaining capital expenditures of $3.1 than in FY 2017 and lower head grades, which resulted in lower payable palladium ounces produced for each tonne of ore processed.

OTHER EXPENSES

Exploration

Exploration expenditures for Q4 2018 were $3.1 compared to $3.1 in Q4 2017, while the FY 2018 exploration expenditures were $11.2 compared to $5.8 in FY 2017. The year-over-year increased costs are attributable to a significant increase in diamond drilling at the LDI mine site and new greenfield drilling programs at the Legris Lake and Sunday Lake properties. A major surface geophysical program at LDI was initiated in September that included a drone-based airborne magnetic survey, an integrated surface and borehole 3D induced polarization survey and a magnetotelluric survey.



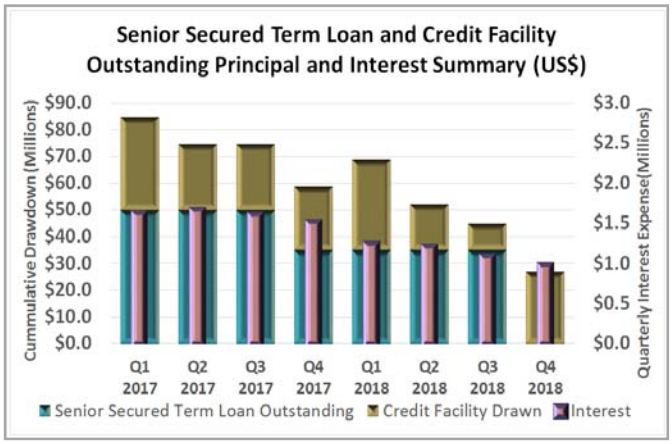
Drilling at LDI continued in the fourth quarter of 2018, with one underground drill rig targeting the Offset Deep Footwall and two surface drills targeting the Creek Zone, Baker Zone and Roby Southwest pit area. The Company also focused on completion of a surface and borehole geophysical program at LDI and a new magnetotelluric survey at Sunday Lake during the fourth quarter of 2018.

Corporate General and Administration

The Company's corporate general and administration expenses for the three months and year ended December 31, 2018 were $2.1 and $7.8 compared to $1.7 and $7.4 in the comparable prior year periods.

Interest Costs and Other

Interest costs and other for the three months and year ended December 31, 2018 were $2.3 and $7.9 compared to $2.3 and $10.0 in the comparable prior year periods. The decrease in interest costs in Q4 2018 are due to lower outstanding debt resulting from the December 14, 2017 repayment of US$15.0 in principal on the senior secured term loan and ongoing repayment of principal outstanding on the Company's credit facility during FY 2018.



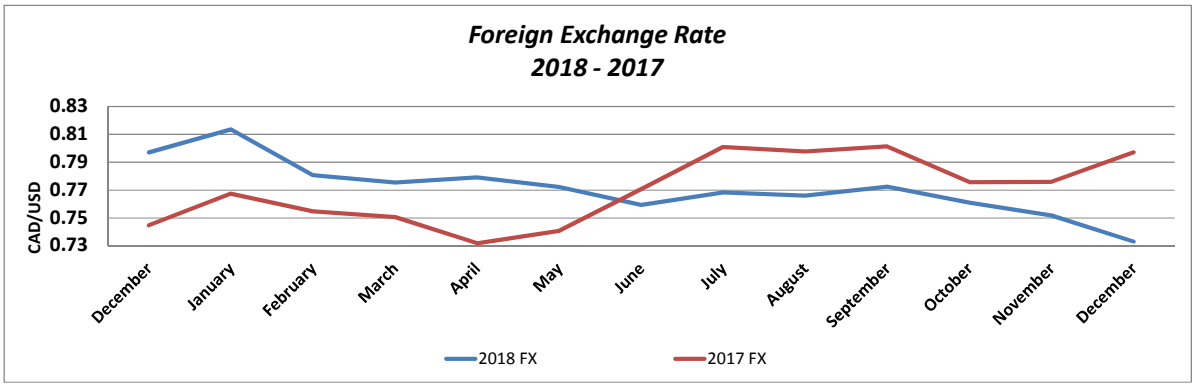
The previous credit facilities were replaced with a new credity facility agreement with a Canadian chartered bank. The new credit facility contains financial covenants regarding minimum interest coverage and leverage ratios and matures on December 31, 2023.

The maximum available credit that can be utilized under the new facility is US$125.0, with available financing declining by US$4.8 each quarter over the term of the facility, beginning March 31, 2019, to a minimum of US$30.0.

Foreign Exchange Loss (Gain)

The Company recorded a foreign exchange loss for Q4 2018 of $5.1 compared to a loss of $1.4 in Q4 2017. The variance between periods was due to the impact of exchange rate movements on the Company's U.S. dollar denominated credit facility and senior secured term loan, which was repaid in FY 2018. A relative weakening of the Canadian dollar in both Q4 2018 and Q4 2017, in relation to the U.S. dollar, contributed to an increase in the debt balances and a corresponding foreign exchange loss in both periods. The comparative loss in Q4 2018 was larger due to the larger decline in the strength of the Canadian dollar relative to that in Q4 2017.

The foreign exchange loss for FY 2018 was $9.5 compared to a gain of $5.9 in FY 2017. As shown in the chart below, a relative weakening of the Canadian dollar in FY 2018 contributed to an increase in the debt balance and a corresponding foreign exchange loss. In comparison, the Canadian dollar strengthened during FY 2017, resulting in a foreign exchange gain.



FINANCIAL CONDITION, CASH FLOWS, LIQUIDITY AND CAPITAL RESOURCES

Sources and Uses of Cash

($millions)	Three months ended December 31 2018	2017	Year ended December 31 2018	2017
Cash provided by operations prior to changes in non-cash working capital	**$ 58.4**	$ 33.5	**$ 152.7**	$ 81.2
Changes in non-cash working capital	**(31.9)**	8.5	**(44.4)**	13.1
Cash provided by operations	**26.5**	42.0	**108.3**	94.3
Cash used in financing activities	**(23.2)**	(24.4)	**(55.2)**	(37.7)
Cash used in investing activities	**(11.3)**	(19.4)	**(51.9)**	(60.5)
Increase (decrease) in cash and cash equivalents	**$ (8.0)**	$ (1.8)	**$ 1.2**	$ (3.9)

Operating Activities

Cash provided by operations prior to changes in non-cash working capital for Q4 2018 was $58.4 compared to cash provided by operations of $33.5 in Q4 2017. The increase of $24.9 was due to an increase in revenue of $35.4 as a result of increased sales combined with favourable palladium prices during Q4 2018. These positive cash flows were partially offset by the increase in production costs of $6.0, increased smelting, refining and freight costs of $1.2, and an increase in royalty fees of $1.2 in Q4 2018. The Company also realized a gain on disposal of equipment of $0.3 in Q4 2018 compared to a loss on disposal of $0.4 in Q4 2017.

Cash provided by operations prior to changes in non-cash working capital for FY 2018 was $152.7 compared to cash provided by operations of $81.2 in FY 2017. The increase of $71.5 was due to an increase in revenue of $124.4 as a result of increased sales combined with favourable palladium prices during the year. These positive cash flows were partially offset by the increase in production costs of $33.9, an increase in smelter, refining and freight costs of $5.2, and an increase in royalty costs of $4.2 compared to those in 2017. The Company also realized a gain on disposal of equipment of $0.3 in FY 2018 compared to a loss on disposal of $0.8 in FY 2017.

Changes to non-cash working capital in Q4 2018 resulted in a use of cash of $31.9 compared to a source of cash of $8.5 in Q4 2017. The $40.4 variance was primarily due to a $26.2 increase in cash used for accounts receivable, a $2.5 increase in cash used to acquire inventory parts for new mining equipment acquired in 2018, and a decrease of $11.4 in cash related to a reduction in accounts payable and accrued liabilities.

Changes to non-cash working capital in FY 2018 resulted in a use of cash of $44.4 compared to a source of cash of $13.1 in FY 2017. The $57.5 variance was primarily due to the reversal of unrealized losses on forward sales contracts and an increase in cash used to settle accounts payables and accrued liabilities during FY 2018 of $36.1 and a reduction of $21.4 to cash used in accounts receivable in FY 2018, compared to cash used in accounts receivable and accounts payable and accrued liabilities for FY 2017.

Financing Activities

Financing activities in Q4 2018 resulted in a use of cash of $23.2 compared to a use of cash of $24.4 in Q4 2017. During Q4 2018, the Company repaid $34.3 of principal on its credit facilities, compared to a repayment of $16.6 of principal in Q4 2017. The Company also repaid $46.9 (US$35.0) of principal outstanding on the senior secured term loan, compared to $18.8 (US$15.0) repaid in Q4 2017, and had additional repayments of obligations under finance leases of $2.5 in Q4 2018 compared to Q4 2017. The increase in repayments of the credit facility principal and senior secured term loan at December 31, 2018, resulted in a reduction to interest paid of $0.6 in Q4 2018 compared to Q4 2017, partially offset by a weakening of the Canadian dollar, relative to the U.S. dollar, in Q4 2018 compared to Q4 2017. Additional net financing of $9.4 was provided from the issuance of flow-through shares in Q4 2018 and proceeds drawn against the Company's credit facilities of $57.3 in Q4 2018, compared to proceeds drawn against credit facilities of $15.3 in Q4 2017.

Financing activities in FY 2018 resulted in a use of cash of $55.2 compared to a use of cash of $37.7 in FY 2017. Net cash of $9.4 was sourced from the Company's flow-through share issuance in Q4 2018, and proceeds of $74.5 from the Company's credit facility in FY 2018 compared to proceeds of $31.2 in FY 2017. However, the Company repaid $72.9 in principal on its credit facility in FY 2018 compared to a repayment of $30.0 in FY 2017, resulting in net cash provided by proceeds of credit facilities of $1.6 in FY 2018 compared to net cash proceeds from credit facilities of $1.2 in FY 2017. The Company also repaid $46.9 of principal on its senior secured term loan in FY 2018, compared to a repayment of $18.8 in FY 2017. The remaining variance between the two periods was primarily related to an increase of $2.2 in repayment of obligations under finance leases and a reduction of interest payments of $2.6 due to lower debt outstanding, partially offset by a weakening of the Canadian dollar, relative to the U.S. dollar, in FY 2018 compared to FY 2017.

In December 2018, the Company issued 714,257 flow-through common shares at a price of $14.00 per share for gross proceeds of $10.0, less financing costs of $0.6, yielding net proceeds of $9.4. The Company is required to spend the gross proceeds of $10.0 in 2019 on eligible exploration expenditures, which expenditures were renounced to investors for the 2018 tax year. As at December 31, 2018, no eligible exploration expenditures were incurred.

Investing Activities

Investing activities in Q4 2018 used cash of $11.3 compared to $19.4 in Q4 2017. Investing activities used cash of $51.9 in FY 2018 compared to $60.5 in FY 2017. The cash outlays for both periods were due to additions to mining interests, net of disposals, which are summarized in the following table.

	Three months ended December 31		Year ended December 31	
($millions)	**2018**	2017	**2018**	2017
Underground development	**$ 2.0**	$ 3.8	**$ 9.6**	$ 10.7
Tailings management facility	**3.5**	5.7	**16.5**	17.2
Mill equipment	**2.4**	0.7	**11.0**	3.3
Equipment and rebuilds	**4.0**	9.2	**17.5**	21.5
Total additions to mining interests before adjustments[1]	**$ 11.9**	$ 19.4	**$ 54.6**	$ 52.7
Payment of accrued capital investment[2]	**-**	-	**-**	7.8
Total additions to mining interests	**$ 11.9**	$ 19.4	**$ 54.6**	$ 60.5
Proceeds on disposal of mining interests	**(0.6)**	-	**(2.7)**	-
Net additions to mining interests	**$ 11.3**	$ 19.4	**$ 51.9**	$ 60.5

1 Total additions to mining interests before adjustments excludes non-cash amounts relating to assets acquired under finance leases (Q4 2018 - $nil, Q4 2017 – $1.0, FY 2018 - $11.7, and FY 2017 - $9.8).

2 Accounts payable and accrued liabilities reported at December 31, 2016 included $7.8 relating to capital costs which had been accrued at year end and were excluded from additions to mining interests due to their non-cash status. At the time of payment in Q1 2017, the related cash outflows were added to cash used for additions to mining interests in investing activities reported on the condensed interim consolidated statements of cash flows.

Liquidity and Capital Resources

($millions)	At December 31 2018	2017
Cash and cash equivalents	**$ 12.3**	$ 11.1
Total debt	**49.1**	85.6
Shareholders' equity	**549.7**	427.8

As at December 31, 2018, the Company had cash and cash equivalents of $12.3 compared to $11.1 as at December 31, 2017. The funds are deposited with major Canadian chartered banks.

Throughout FY 2017 and FY 2018, the Company had, subject to a borrowing base calculation formula, a US$60.0 credit facility that was secured by a first priority charge on the Company's accounts receivable and inventory and by a second priority charge on the Company's property, plant and equipment. In addition, a first priority charge on non-leased mobile equipment was assigned as collateral by the Company during Q2 2017. The credit facility was available for use for working capital liquidity and general corporate purposes. The credit facility matured on December 31, 2018.

On December 14, 2018, the Company replaced the previous US$60.0 credit facility with a new credit facility with another Canadian chartered bank with maximum available financing of US$125.0. Initial proceeds on the new credit facility were used to repay the outstanding principal on the previous credit facility and settle the outstanding principal of US$35.0 for the Company's senior secured term loan. At December 31, 2018, the Company's new credit facility drawn was $37.0 (US$27.1), in addition to $24.3 (US$17.8) for letters of credit, resulting in remaining borrowing availability of $109.2 (US$80.1).

The Company's new credit facility contains financial covenants which, if not met, may result in an event of default. The credit facility also includes, but is not limited to, covenants applicable to limits on liens, additional debt, repayments, material adverse change provisions. Certain events of default result in the loan becoming immediately due. Other events of default entitle the lender to demand immediate repayment. The Company was in compliance with all covenants at December 31, 2018.

The senior secured term loan financing provided for the availability of a US$50.0 term loan, of which US$15.0 was repaid on December 22, 2017. The remaining balance of US$35.0 was repaid on December 14, 2018, prior to maturity on December 31, 2018.

The Company's cash and liquidity position and covenant compliance is sensitive to a number of variables which cannot be predicted with certainty, including, but not limited to, meeting production targets, metal prices, foreign exchange rates, operational costs and capital expenditures, as well as the Company's success in finalizing future financing arrangements. Adverse changes in any of these variables may have a material impact on the Company's liquidity position.

Contractual Obligations

Contractual obligations are comprised as follows:

As at December 31, 2018	Payments Due by Period			
($millions)	Total	1-3 Years	3-5 Years	5+ Years
Credit facility	$ 37.0	$ 37.0	$ -	$ -
Finance lease obligations	12.1	12.1	-	-
Operating leases	0.8	0.6	0.2	-
	$ 49.9	$ 49.7	$ 0.2	$ -

In addition to contracted obligations, the Company has asset retirement obligations at December 31, 2018 in the amount of $23.5 for the LDI mine. The Company has letters of credit of $22.4 related to the asset retirement obligation.

Related Party Transactions

Brookfield Business Partners LP ("BBU") is a limited partnership publicly listed on the New York Stock Exchange and the TSX, whose general partner is a wholly-owned subsidiary of Brookfield Asset Management Inc. Collectively, BBU and its affiliates indirectly hold approximately 53.5 million common shares of the Company, representing approximately 91% of the issued and outstanding common shares of NAP.

During the three months and year ending December 31, 2018, related party transactions consisted of interest payments of $1.0 and $4.4, respectively, relating to the outstanding US$35.0 ($46.9) senior secured term loan due to BCP, which was fully repaid on December 17, 2018, prior to maturity on December 31, 2018. For the comparative period in 2017, interest payments of $1.5 and $6.4 were made during the three-month and year ending December 31, 2017. A repayment of US$15.0 ($18.8) in principal was applied towards the outstanding balance of US$50.0 on December 22, 2017 to settle the portion of the term loan that matured on December 31, 2017.

OUTSTANDING SHARE DATA

As of February 14, 2019, there were 58,840,783 common shares of the Company outstanding.

CRITICAL ACCOUNTING POLICIES AND ESTIMATES

Critical accounting policies generally include estimates that are highly uncertain and for which changes in those estimates could materially impact the Company's financial statements. The following accounting policies are considered critical:

a. Use of estimates

The preparation of the consolidated financial statements in conformity with IFRS requires management to make judgments, estimates, and assumptions that affect the application of accounting policies and the reported amount of assets and liabilities, the disclosure of contingent assets and liabilities at the date of the consolidated financial statements and the reported amounts of revenue and expenses during the year. Significant estimates and assumptions relate to recoverability of mining operations and mineral exploration properties. While management believes that these estimates and assumptions are reasonable, actual results could vary significantly.

Certain assumptions are dependent upon reserves, which represent the estimated amount of ore that can be economically and legally extracted from the Company's properties. In order to estimate reserves, assumptions are required about a range of geological, technical and economic factors, including quantities, grades, production techniques, recovery rates, production costs, transportation costs, commodity prices and exchange rates. Estimating the quantity and/or grade of reserves requires the size, shape and depth of ore bodies to be determined by analyzing geological data such as drilling samples. This process may require complex and difficult geological judgments to interpret the data. Estimates and underlying assumptions are reviewed on an ongoing basis. Revisions to accounting estimates are recognized in the period they are determined and in any future periods affected.

Because the economic assumptions used to estimate reserves change from period to period, and because additional geological data is generated during the course of operations, estimates of reserves may change from period to period. Changes in reported reserves may affect the Company's financial results and financial position in a number of ways, including the following:

- Asset carrying values including mining interests may be affected due to changes in estimated future cash flows;
- Depreciation and amortization charged in the statement of operations may change or be impacted where such charges are determined by the units of production basis, or where the useful economic lives of assets change; and
- Decommissioning, site restoration and environmental provisions may change where changes in estimated reserves affect expectations about the timing or cost of these activities.

b. Impairment assessments of long-lived assets

The carrying amounts of the Company's non-financial assets, excluding inventories and deferred tax assets, are reviewed at each reporting date to determine whether any triggering events have occurred which may indicate potential impairment. Impairment is assessed at the level of cash-generating units ("CGUs"). An impairment loss is recognized for any excess of carrying amount over the recoverable amount.

Impairment is determined for an individual asset unless the asset does not generate cash inflows that are independent of those generated from other assets or groups of assets, in which case, the individual assets are grouped together into CGUs for impairment purposes.

The recoverable amount of an asset or CGU is the greater of its "value in use", defined as the discounted present value of the future cash flows expected to arise from its continuing use and its ultimate disposal, and its "fair value less cost of disposal", defined as the best estimate of the price that would be received to sell an asset in an orderly transaction between market participants at the measurement date, less costs of disposal. In assessing value in use, the estimated future cash flows are discounted to their present value using a pre-tax discount rate that reflects current market assessments of the time value of money and the risks specific to the asset.

Impairment losses recognized in prior periods are assessed at each reporting date for any indications that the loss has decreased or no longer exists. An impairment loss on non-financial assets other than goodwill is reversed if there has been a change in the estimates used to determine the recoverable amount, only to the extent that the asset's carrying amount does not exceed the carrying amount that would have been determined, net of amortization, if no impairment loss had been recognized.

c. Depreciation and amortization of mining interests

Mining interests relating to plant and equipment, mining leases and claims, royalty interests, and other development costs are recorded at cost with depreciation and amortization provided on the unit of production method over the estimated remaining tonnes of ore to be processed, based on the proven and probable reserves or, in the event that the Company is mining resources, an appropriate estimate of the measured resources expected to be converted to reserves based on prior conversion rates.

Mining interests relating to small vehicles and certain machinery with a determinable expected life are recorded at cost with depreciation provided on a straight-line basis over their estimated useful lives, ranging from three to seven years, which most closely reflects the expected pattern of consumption of the future economic benefits embodied in the asset. Straight-line depreciation is calculated over the depreciable amount, which is the cost of an asset, less its residual value.

Significant components of individual assets are assessed and, if a component has a useful life that is different from the remainder of that asset, that component is depreciated separately using the unit-of-production or straight-line method as appropriate. Costs relating to land are not amortized.

Leased assets are depreciated over their useful lives when it is reasonably certain that the Company will obtain ownership by the end of the lease term.

Depreciation methods, useful lives and residual values are reviewed at each financial year-end and adjusted if appropriate.

d. Revenue recognition

Revenue from the sale of metals in the course of ordinary activities is measured at the fair value of the consideration to which the Company expects to be entitled to receive in exchange for transferring goods or services to a customer, net of volume adjustments. Consideration is also given to the incremental costs of obtaining a contract and the costs directly related to fulfilling a contract. Revenue is recognised when a customer obtains control of the goods or services. The timing of the transfer of control of the goods or services requires the Company to exercise judgement, taking into consideration all of the facts and circumstances of the relevant contracts with their customers. These facts include the nature and timing of the satisfaction of performance obligations applicable under the individual terms of the contract.

Revenue from the sale of palladium and by-product metals from the LDI mine is provisionally recognized based on forward market prices upon the delivery of concentrate to the smelter or the designated shipping point, which is when customers obtain control of the concentrate. Invoices are generated and revenue is recognised at that point in time. The total consideration for the concentrate sold is allocated to each of the payable metals contained in the concentrate based on the assays, metal accountabilities, and forward market prices for each respective metal under the contract. The Company's smelter contracts provide for final prices to be determined by quoted market prices in a period subsequent to the date of concentrate delivery. Variations from the provisionally priced sales are recognized as revenue adjustments until final pricing is determined. Accounts receivable is recorded net of estimated treatment and refining costs which are subject to final assay adjustments. Subsequent adjustments to provisional pricing amounts due to changes in metal prices and foreign exchange are recorded in revenues.

e. Asset retirement obligations

In accordance with Company policies, asset retirement obligations relating to legal and constructive obligations for future site reclamation and closure of the Company's mine sites are recognized when the probability of outflow of resources to settle the obligation is identified and a reliable estimate of that outflow can be determined. At that time, a liability and corresponding asset are recorded using management's best estimates. Estimated closure and restoration costs are provided for in the accounting period when the obligation arising from the related disturbance occurs.

The amount of any liability recognized is estimated based on the risk-adjusted costs required to settle future obligations, discounted using a pre-tax risk-free discount rate consistent with the time period of expected cash flows. When the liability is initially recorded, a corresponding asset retirement cost is recognized as an addition to mining interests and amortized using the unit of production method.

The liability for each mine site is accreted over time and the accretion charges are recognized as an interest cost in the condensed interim consolidated statements of operations and comprehensive loss. The liability is subject to re-measurement at each reporting date based on changes in discount rates and timing or amounts of the costs to be incurred. Changes in the liability, other than accretion charges, relating to mine rehabilitation and restoration obligations, which are not the result of current production of inventory, are added to or deducted from the carrying value of the related asset retirement cost in the reporting period recognized. If the change results in a reduction of the obligation in excess of the carrying value of the related asset retirement cost, the excess balance is recognized as a recovery through profit or loss in the period.

f. Income and mining taxes

Income tax expense is comprised of current and deferred tax. Current tax and deferred tax are recognized in profit or loss except to the extent that it relates to a business combination, or items recognized directly in equity or in other comprehensive income.

Current tax is the expected tax payable or receivable on the taxable income or loss for the year, using tax rates enacted or substantively enacted at the reporting date, and any adjustment to tax payable in respect of previous years.

Deferred tax is recognized in respect of temporary differences between the carrying amounts of assets and liabilities for financial reporting purposes and the amounts used for taxation purposes. Deferred tax is not recognized for the following temporary differences:

(i) the initial recognition of assets or liabilities in a transaction that is not a business combination and that affects neither accounting nor taxable profit or loss;

(ii) taxable temporary differences associated with investments in subsidiaries, associates, and interests in joint arrangements where the timing of the reversal of the temporary differences can be controlled by the parent and it is probable that the temporary difference will not reverse in the foreseeable future; and

(iii) temporary differences arising on the initial recognition of goodwill.

Deferred tax is measured at the tax rates that are expected to be applied to temporary differences when they reverse, based on the laws that have been enacted or substantively enacted by the reporting date.

Deferred tax assets and liabilities are offset if there is a legally enforceable right to offset current tax liabilities and assets, and they relate to income or mining taxes levied by the same tax authority on the same taxable entity, or on different tax entities, but they intend to settle current tax liabilities and assets on a net basis or their tax assets and liabilities will be realized simultaneously.

A deferred tax asset is recognized for unused tax losses, tax credits and deductible temporary differences, to the extent that it is probable that future taxable profits will be available against which they can be utilized. Deferred tax assets are reviewed at each reporting date and are reduced to the extent that it is no longer probable that the related tax benefit will be realized.

Adoption of New Accounting Standards

The following new accounting standards have been adopted by the Company:

IFRS 2 Share-based payment
IFRS 15 Revenue from contracts with customers
IFRS 9 Financial Instruments: Classification and Measurement
IFRIC 22 Foreign Currency Transactions and Advance Consideration

New standards not yet adopted

The following new standards are not yet effective for the year ended December 31, 2018 or have otherwise not yet been adopted by the Company:

IFRS 16 Leases
IFRIC 23 Uncertainty over Income Tax Treatments

For additional details regarding the nature of the adopted and unadopted standards and any impacts on the Company's reporting, please refer to note 3 of the Company's 2018 consolidated financial statements.

OTHER INFORMATION

Additional information regarding the Company is included in the Company's annual information form available on SEDAR at www.sedar.com.

RISKS AND UNCERTAINTIES

In addition to the risks and uncertainties discussed within the Company's most recent annual information form, the reader should also consider the following risk factors:

Sales of a significant number of the Common Shares in the public markets, and the expectation of such sales, could depress the market price of the Company's Common Shares.
Brookfield holds an approximate 91% ownership in the Company. The remaining 9% of the Company's common shares are held publicly. The trading of a significant number of common shares in the public market, or the perception that significant sales could occur, may result in higher volatility and/or adversely impact the Company's share price or ability to raise capital in the future. As a result, readers of this MD&A are cautioned regarding the potential for significant shifts in the Company's share price that may occur in advance of, or following, material trading activity or equity offerings by the Company.

The Corporation is dependent on third parties for smelting and refining its palladium.
The Company's mining and milling operations produce a concentrate material sold to third party smelters. To ensure competitiveness of smelting and refining contracts with third parties, the Company solicits tenders from various smelters in advance of maturity of its smelter agreements. Where possible, the Company looks to secure long-term contracts with multiple smelter locations to mitigate market risk and the risk of potential interruption to sales and related cash flows which may result from interruptions to third party smelting operations.

Forward-looking information may prove inaccurate.
Certain valuations and measurements required consideration of forecast estimates and the use of various assumptions reliant upon factors which are beyond the control of the Company. Please refer to the Company's notice provided on page 4 of this MD&A regarding the use and risks associated with such foward-looking information.

Some additional risk factors discussed elsewhere in this MD&A are as follows:

Liquidity Risk – Please see the liquidity and capital resources section of this MD&A.

Financing Risk – Please see the going concern section of this MD&A.

INTERNAL CONTROLS

Disclosure Controls and Procedures

Management is responsible for the information disclosed in this MD&A and has in place the appropriate information systems, procedures and controls to ensure that information used internally by management and disclosed externally is, in all material respects, complete and reliable.

As at December 31, 2018, the Chief Executive Officer and Chief Financial Officer certify that they have designed, or caused to be designed under their supervision, disclosure controls and procedures to provide reasonable assurance that material information relating to the Company and its consolidated subsidiaries would be made known to them by others within those entities.

The disclosure controls and procedures are evaluated annually through regular internal reviews which are carried out under the supervision of, and with the participation of, the Company's management, including the Chief Executive Officer and Chief Financial Officer. Based on that evaluation, the Chief Executive Officer and Vice President, Finance and Chief Financial Officer concluded that the design and operation of these disclosure controls were effective as of December 31, 2018.

Internal Control over Financial Reporting

As at December 31, 2018, the Chief Executive Officer and Chief Financial Officer certify that they have designed, or caused to be designed under their supervision, internal controls over financial reporting to provide reasonable assurance regarding the reliability of financial reporting and the preparation of the financial statements for external purposes in accordance with IFRS.

There have been no changes in the Company's internal controls over the financial reporting that occurred during the most recent period ended December 31, 2018 that have materially affected, or are reasonably likely to materially affect, the Company's internal control over financial reporting.

Management is responsible for establishing and maintaining adequate internal controls over financial reporting. Internal control over financial reporting, no matter how well designed, has inherent limitations and can only provide reasonable assurance, not absolute assurance, with respect to the preparation and fair presentation of published financial statements and management does not expect such controls will prevent or detect all misstatements due to error or fraud.

Under the supervision and with the participation of the Chief Executive Officer and the Chief Financial Officer, management performs regular internal reviews and conducts an annual evaluation of the effectiveness of its internal control over financial reporting based on the framework in Internal Control – Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013). Based on that evaluation, the Chief Executive Officer and Chief Financial Officer concluded that the design and operation of these internal controls over financial reporting were effective as of December 31, 2018.

SUMMARY OF QUARTERLY RESULTS

($millions except per share amounts)	2018					2017				
	Q1	Q2	Q3	**Q4**	**Total**	Q1	Q2	Q3	Q4	Total
PRODUCTION RESULTS										
Ore mined (tonnes)										
Underground	569,468	532,865	565,277	**618,211**	**2,285,821**	363,136	455,169	500,560	578,249	1,897,114
Surface	480,916	529,085	498,169	**548,344**	**2,056,514**	77,600	201,543	279,070	403,847	962,060
Total	1,050,384	1,061,950	1,063,446	**1,166,555**	**4,342,335**	440,736	656,712	779,630	982,096	2,859,174
Mined ore grade (Pd g/t)										
Underground	3.3	3.0	3.2	**3.3**	**3.2**	4.4	3.9	3.8	3.5	3.9
Surface	1.0	1.0	1.1	**1.4**	**1.1**	1.0	1.0	1.0	0.9	0.9
Milling										
Tonnes milled (dry metric tonnes)	1,021,147	1,077,472	1,028,361	**1,110,754**	**4,237,734**	458,382	580,265	704,287	1,037,185	2,780,119
Palladium recoveries (%)	79.9	79.5	79.5	**80.2**	**80.1**	82.6	84.3	82.3	80.4	80.6
Palladium concentrate grade (g/t)	263	239	214	**226**	**234**	295	313	276	271	286
Tonnes of concentrate produced	7,162	7,735	8,729	**9,632**	**33,258**	4,496	5,177	6,101	7,206	22,980
Production cost per tonne milled[1]	$ 47	$ 41	$ 46	**$ 45**	**$ 45**	$ 80	$ 68	$ 56	$ 42	$ 57
Payable production										
Palladium (oz)	57,053	57,652	56,852	**65,904**	**237,461**	40,252	50,222	53,118	58,000	201,592
Platinum (oz)	4,218	4,107	3,604	**4,439**	**16,368**	2,342	2,838	3,293	3,794	12,267
Gold (oz)	3,569	4,153	3,856	**4,238**	**15,816**	2,803	2,962	3,746	3,784	13,295
Nickel (lbs)	-	-	-	**-**	**-**	70,517	-	-	-	70,517
Copper (lbs)	1,214,905	1,074,719	1,154,554	**1,102,321**	**4,546,499**	602,644	806,452	924,154	789,894	3,123,144
FINANCIAL RESULTS										
Revenue	$ 86.6	$ 94.1	$ 93.6	**$ 122.5**	**$ 396.8**	$ 44.3	$ 70.3	$ 70.7	$ 87.1	$ 272.4
Production costs	48.4	47.5	45.0	**46.2**	**187.1**	31.9	41.1	40.0	40.2	153.2
Mine restoration and mitigation costs (recoveries)	-	-	-	**-**	**-**	-	-	-	-	-
Exploration expense	3.8	2.4	1.9	**3.1**	**11.2**	0.5	0.9	1.3	3.1	5.8
Total capital investment	16.8	17.5	20.1	**11.9**	**66.3**	20.2	10.8	18.8	12.7	62.5
Net income (loss) and comprehensive income (loss)[2]	4.6	14.2	22.9	**77.5**	**119.2**	(1.0)	10.6	12.2	14.3	36.1
Income (loss) per share – Basic[2]	$ 0.08	$ 0.24	$ 0.39	**$ 1.33**	**$ 2.05**	$ (0.02)	$ 0.18	$ 0.21	$ 0.25	$ 0.62
Diluted[2]	$ 0.08	$ 0.24	$ 0.39	**$ 1.32**	**$ 2.03**	$ (0.02)	$ 0.18	$ 0.21	$ 0.25	$ 0.62
Cash provided by (used in) operations	13.5	33.1	35.2	**26.5**	**108.3**	10.7	25.7	15.9	42.0	94.3
Cash provided by (used in) financing activities	8.6	(26.0)	(14.6)	**(23.2)**	**(55.2)**	8.7	(17.5)	(4.5)	(24.4)	(37.7)
Cash provided by (used in) investing activities	(12.5)	(13.9)	(14.2)	**(11.3)**	**(51.9)**	(16.3)	(9.5)	(15.3)	(19.4)	(60.5)
Palladium sold (ounces)	55,982	60,664	55,513	**60,731**	**232,890**	33,297	53,982	52,709	57,323	197,311
Palladium revenue per ounce sold (US$)[1]	$ 1,001	$ 986	$ 1,114	**$ 1,339**	**$ 1,111**	$ 812	$ 799	$ 882	$ 1,001	$ 876
Other results[1]										
AISC per ounce of palladium produced (US$)[1]	$ 709	$ 658	$ 733	**$ 670**	**$ 690**	$ 765	$ 612	$ 688	$ 734	$ 694
Cash cost per ounce of palladium sold (US$), net of by-product revenues[1]	$ 567	$ 500	$ 555	**$ 513**	**$ 531**	$ 627	$ 485	$ 516	$ 463	$ 509

1. Non-IFRS measure. Please refer to Non-IFRS Measures on pages 25-28.

2 During the year ended December 31, 2018, while calculating depreciation of mining interests subsequent to the release of the updated mineral reserve and resource statement effective July 4, 2018, the Company determined that the historical unit of production methodology, which was based on produced ounces of palladium as compared to total contained ounces on the previous reserve and resource statement, would result in a misallocation of depreciation over the remaining estimated life of the mine. The Company has adjusted its depreciation policy for mineral properties to depreciate the carrying amount using the units of production method based on tonnage of ore processed as compared to the total tonnes of ore included within mineral reserves and resources based on the current reserve statement, including a portion of measured resources expected to be converted to reserves based on prior conversion rates. The Company has revised the comparative figures to correct the immaterial impact of this item.

OUTLOOK

In 2019, the Company expects production of between 220,000 to 235,000 ounces of payable palladium. The average head grade will drop slightly in 2019 as the mill feed will return to a blend of underground ore and lower grade stockpile ore on surface. Mining from the Sheriff pit was completed in Q4 2018.

AISC for 2019 are forecasted to average between US$785 to US$815 per payable palladium ounce. Sustaining capital investment is estimated at $44.0, while project capital is forecasted at $40.0.

Giving consideration to the Company's cash flow and capital allocation alternatives, including the previously announced underground expansion project, the Company's board of directors announced a quarterly $0.03 per share dividend to common shareholders of record on February 14, 2019.

NON-IFRS MEASURES

This MD&A refers to production cost per tonne milled, palladium revenue per ounce sold, cash cost per ounce of palladium sold, EBITDA, adjusted EBITDA, and AISC amounts calculated per ounce of palladium produced, which are not recognized measures under IFRS. Such Non-IFRS financial measures do not have any standardized meaning prescribed by IFRS and may not be comparable to similar measures presented by other issuers. Management uses these measures internally. The use of these measures enables management to better assess performance trends. Management understands that a number of investors, and others who follow the Company's performance also assess performance in this way. Management believes that these measures reflect the Company's performance and provide indications of its expected performance in future periods. This data is intended to provide additional information and should not be considered in isolation or as a substitute for measures of performance prepared in accordance with IFRS.

The following tables reconcile these Non-IFRS measures to the most directly comparable IFRS measures:

Production Costs per Tonne Milled

Production costs per tonne milled provides the cost of producing concentrate and is computed as follows:

	2018					2017				
	Q1	Q2	Q3	**Q4**	**Total**	Q1	Q2	Q3	Q4	Total
Production costs ($million)	$ 48.4	$ 47.5	$ 45.0	**$ 46.2**	**$ 187.1**	$ 31.9	$ 41.1	$ 40.0	$ 40.2	$ 153.2
Deduct:										
Inventory adjustments	0.1	(3.4)	2.3	**3.4**	**2.4**	4.7	(1.8)	(0.5)	2.9	5.3
On-site mining, general & administration costs ($million)	48.5	44.1	47.3	**49.6**	**189.5**	36.6	39.3	39.5	43.1	158.5
Divide by:										
Tonnes milled (dry metric tonnes)	1,021,147	1,077,472	1,028,361	**1,110,754**	**4,237,734**	458,382	580,265	704,287	1,037,185	2,780,119
Production cost per tonne milled	$ 47	$ 41	$ 46	**$ 45**	**$ 45**	$ 80	$ 68	$ 56	$ 42	$ 57

Palladium Revenue Per Ounce Sold

Palladium revenue per ounce sold represents the palladium revenue, after pricing and foreign exchange adjustments, per payable ounce of palladium that is recognized in revenue in each period. The measure provides a comparison between the estimated proceeds from the sale of the company's primary metal at current market prices and the Company's Non-IFRS measure for AISC per ounce of palladium produced.

The calculation for palladium revenue per payable ounce sold is as follows:

	2018					2017				
	Q1	Q2	Q3	**Q4**	**Total**	Q1	Q2	Q3	Q4	Total
Revenue after pricing adjustments ($million)	$ 86.6	$ 94.1	$ 93.6	**$ 122.5**	**$ 396.8**	$ 44.3	$ 70.3	$ 70.7	$ 87.1	$ 272.4
Deduct:										
By-product metal revenue	(15.7)	(16.4)	(13.3)	**(15.5)**	**(60.9)**	(8.7)	(12.0)	(12.6)	(14.5)	(47.8)
Palladium revenue ($million)	$ 70.9	$ 77.7	$ 80.3	**$ 107.0**	**$ 335.9**	$ 35.6	$ 58.3	$ 58.1	$ 72.6	$ 224.6
Divide by:										
Payable ounces of palladium sold	55,982	60,664	55,513	**60,731**	**232,890**	33,297	53,982	52,709	57,323	197,311
Palladium revenue per ounce sold (CDN$)	$ 1,266	$ 1,281	$ 1,447	**$ 1,762**	**$ 1,442**	$ 1,069	$ 1,080	$ 1,102	$ 1,267	$ 1,138
Average exchange rate (CAD/USD)	0.79	0.77	0.77	**0.76**	**0.77**	0.76	0.74	0.80	0.79	0.77
Palladium revenue per ounce sold (US$)	$ 1,001	$ 986	$ 1,114	**$ 1,339**	**$ 1,111**	$ 812	$ 799	$ 882	$ 1,001	$ 876

Cash Cost Per Ounce of Palladium Sold

The Company uses this measure internally to evaluate the operating performance of the Company for the reporting periods presented. The Company believes that cash cost per ounce of palladium sold is a critical metric for evaluating the results of the underlying business of the Company.

Cash cost per ounce includes mine site operating costs, such as mining, milling, processing concentrate, general and administration and royalty costs, but are exclusive of depreciation, amortization, reclamation, capital, corporate, and exploration costs. The cash cost per ounce calculation is reduced by deducting by-product revenue and is then divided by ounces of palladium sold to arrive at cash cost per ounce of palladium sold, net of by-product revenues. The Company's primary operation relates to the extraction of palladium metal. Therefore, all other metals extracted in conjunction with the palladium metal are considered to be by-products for the purposes of the cash cost calculation. This measure, along with revenues, is considered to be a key indicator of a Company's ability to generate operating earnings and cash flow from its mining operations.

	2018					2017				
	Q1	Q2	Q3	**Q4**	**Total**	Q1	Q2	Q3	Q4	Total
Production costs ($million)	$ 48.4	$ 47.5	$ 45.0	**$ 46.2**	**$ 187.1**	$ 31.9	$ 41.1	$ 40.0	$ 40.2	$ 153.2
Smelting, refining and freight costs	3.9	4.3	4.3	**4.9**	**17.4**	2.1	3.2	3.2	3.7	12.2
Royalty expense	3.6	4.0	4.0	**5.4**	**17.0**	2.2	3.0	3.4	4.2	12.8
Operational expenses ($million)	$ 55.9	$ 55.8	$ 53.3	**$ 56.5**	**$ 221.5**	$ 36.2	$ 47.3	$ 46.6	$ 48.1	$ 178.2
Deduct:										
By-product metal revenue ($million)	(15.7)	(16.4)	(13.3)	**(15.5)**	**(60.9)**	(8.7)	(12.0)	(12.6)	(14.5)	(47.8)
	$ 40.2	$ 39.4	$ 40.0	**$ 41.0**	**$ 160.6**	$ 27.5	$ 35.3	$ 34.0	$ 33.6	$ 130.4
Divided by:										
Payable ounces of palladium sold	55,982	60,664	55,513	**60,731**	**232,890**	33,297	53,982	52,709	57,323	197,311
Cash cost per ounce of palladium sold (CDN$), net of by-product revenues	$ 718	$ 649	$ 721	**$ 675**	**$ 690**	$ 825	$ 656	$ 645	$ 586	$ 661
Average exchange rate (CAD/USD)	0.79	0.77	0.77	**0.76**	**0.77**	0.76	0.74	0.80	0.79	0.77
Cash cost per ounce of palladium sold (US$), net of by-product revenues	$ 567	$ 500	$ 555	**$ 513**	**$ 531**	$ 627	$ 485	$ 516	$ 463	$ 509

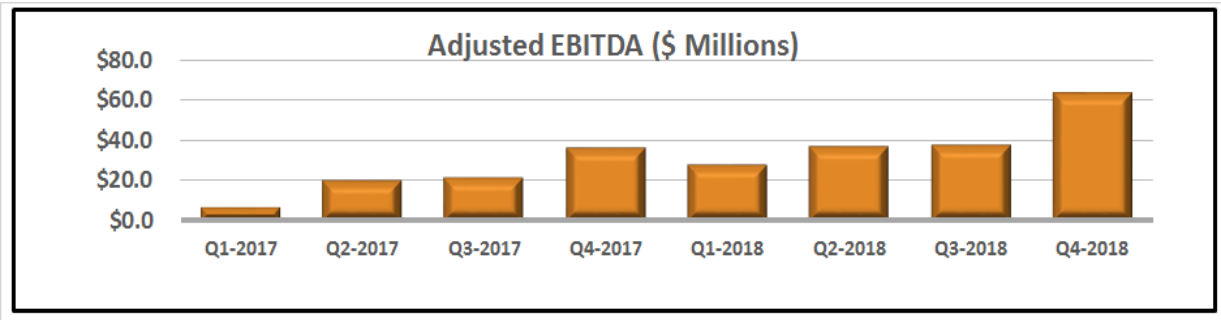
EBITDA and adjusted EBITDA

The Company believes that EBITDA and adjusted EBITDA are valuable indicators of the Company's ability to generate operating cash flow to fund working capital needs, service debt obligations, and fund capital expenditures.

EBITDA is defined as net income (loss) and comprehensive income (loss) before the following: change in carrying value of long-term debt; income tax and mining tax expense; interest and other income; interest costs, prepayment fee and other; financing costs; and depreciation and amortization.

Adjusted EBITDA is defined as EBITDA, net of adjustments for the following: exploration expenses; foreign exchange loss (gain); and mine restoration and mitigation costs. EBITDA and Adjusted EBITDA are not necessarily indicative of operating profit or cash flow from operations as determined under IFRS. Other companies may calculate EBITDA and Adjusted EBITDA differently.

($million)	2018					2017				
	Q1	Q2	Q3	**Q4**	**Total**	Q1	Q2	Q3	Q4	Total
Income (loss) and comprehensive income (loss) for the period	$ 4.6	$ 14.2	$ 22.9	**$ 77.5**	**$ 119.2**	$ (1.0)	$ 10.6	$ 12.2	$ 14.3	$ 36.1
Interest and other income	(0.1)	(0.1)	-	**(0.1)**	**(0.3)**	-	(0.1)	-	(0.1)	(0.2)
Interest costs, prepayment fee and other	1.9	2.0	1.7	**2.3**	**7.9**	2.6	2.6	2.5	2.3	10.0
Financing costs	0.4	0.2	0.3	**0.3**	**1.2**	0.3	0.2	0.5	0.7	1.7
Income taxes expense (recovery)	1.3	2.1	2.8	**(39.9)**	**(33.7)**	-	-	-	3.2	3.2
Depreciation and amortization	13.0	13.0	10.9	**15.9**	**52.8**	5.3	8.5	9.7	12.0	35.5
EBITDA	$ 21.1	$ 31.4	$ 38.6	**$ 56.0**	**$ 147.1**	$ 7.2	$ 21.8	$ 24.9	$ 32.4	$ 86.3
Exploration expense	3.8	2.4	1.9	**3.1**	**11.2**	0.5	0.9	1.3	3.1	5.8
Foreign exchange loss (gain)	3.5	3.4	(2.5)	**5.1**	**9.5**	(0.6)	(2.5)	(4.2)	1.4	(5.9)
Change in carrying value of long-term debt	-	-	-	**-**	**-**	(0.3)	0.3	-	-	-
Adjusted EBITDA	$ 28.4	$ 37.2	$ 38.0	**$ 64.2**	**$ 167.8**	$ 6.8	$ 20.5	$ 22.0	$ 36.9	$ 86.2



All-Inclusive Sustaining Costs (AISC)

The Company believes that, in addition to the above Non-IFRS measures, the determination of AISC and AISC per ounce of palladium produced also represents an effective criterion for understanding the economics of the mining operation.

The Company's methodology for calculating AISC follows guidelines provided by the World Gold Council released June 27, 2013, which may not be similar to methodologies used by other precious metal producers that disclose AISC.

	2018					2017				
	Q1	Q2	Q3	**Q4**	**Total**	Q1	Q2	Q3	Q4	Total
Production costs ($million)	$ 48.4	$ 47.5	$ 45.0	**$ 46.2**	**$ 187.1**	$ 31.9	$ 41.1	$ 40.0	$ 40.2	$ 153.2
Deduct:										
Inventory adjustments	0.1	(3.4)	2.3	**3.4**	**2.4**	4.7	(1.8)	(0.5)	2.9	5.3
On-site mining, general & administration costs	$ 48.5	$ 44.1	$ 47.3	**$ 49.6**	**$ 189.5**	$ 36.6	$ 39.3	$ 39.5	$ 43.1	$ 158.5
Royalties & production taxes	3.6	4.0	4.0	**5.4**	**17.0**	2.2	3.0	3.4	4.2	12.8
Third party smelting, refining & transport costs	3.9	4.3	4.3	**4.9**	**17.4**	2.1	3.2	3.2	3.7	12.2
Stock-piles/product inventory write down	-	-	-	**-**	**-**	(0.2)	-	-	-	(0.2)
By-product credits	(15.7)	(16.4)	(13.3)	**(15.5)**	**(60.9)**	(8.7)	(12.0)	(12.6)	(14.5)	(47.8)
Adjusted Operating Costs ($million)	$ 40.3	$ 36.0	$ 42.3	**$ 44.4**	**$ 163.0**	$ 32.0	$ 33.5	$ 33.5	$ 36.5	$ 135.5
Corporate general & administrative costs	2.2	1.7	1.8	**2.1**	**7.8**	1.4	2.3	2.0	1.7	7.4
Reclamation & remediation accretion & amortization	0.1	0.1	0.1	**0.2**	**0.5**	0.1	-	0.1	0.2	0.4
Capitalized mine development (sustaining)	3.1	2.5	1.9	**1.9**	**9.4**	2.8	1.8	2.3	3.8	10.7
Capital expenditure (sustaining)[1]	5.5	9.0	8.0	**9.5**	**32.0**	4.2	3.9	7.8	11.7	27.6
All-inclusive sustaining cost ($million)	$ 51.2	$ 49.3	$ 54.1	**$ 58.1**	**$ 212.7**	$ 40.5	$ 41.5	$ 45.7	$ 53.9	$ 181.6
Ounces of palladium produced	57,053	57,652	56,852	**65,904**	**237,461**	40,252	50,222	53,118	58,000	201,592
AISC per palladium ounce produced (CDN$)	$ 897	$ 855	$ 952	**$ 882**	**$ 896**	$ 1,006	$ 827	$ 860	$ 929	$ 901
Average exchange rate (CAD/USD)	0.79	0.77	0.77	**0.76**	**0.77**	0.76	0.74	0.80	0.79	0.77
AISC per palladium ounce produced (US$)	$ 709	$ 658	$ 733	**$ 670**	**$ 690**	$ 765	$ 612	$ 688	$ 734	$ 694

1 Capital expenditures include principal payments on obligations under finance lease. A final buyout of $2.9 in Q1 2017 relating to a sale-leaseback of various pieces of equipment is excluded. Had this non-recurring expenditure been included, the Q1 2017 AISC would have been $43.4, with an AISC per palladium ounce produced of $1,078 (US$819).