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Pricing Supplement to the Prospectus dated April 27, 2017,  
the Prospectus Supplement dated September 23, 2018, and the Product Supplement dated May 1, 2017

### **Senior Medium-Term Notes, Series E**

#### **Autocallable Barrier Notes with Contingent Coupons due on February 28, 2020**

#### **Each Linked to a Single Exchange Traded Fund**

This pricing supplement relates to two separate note offerings. Each issue of the notes is linked to one, and only one, Reference Stock named below. We refer to the shares of the Reference Stock Issuer as the "Reference Stock." You may participate in one or both of the offerings at your election. This pricing supplement does not, however, allow you to purchase a single note linked to a basket of the Reference Stocks described below.

The notes are designed for investors who are seeking monthly contingent periodic interest payments (as described in more detail below), as well as a return of principal if the closing price of the applicable Reference Stock on any monthly Call Date is greater than 110% of its Initial Stock Price (the "Call Level"). Investors should be willing to have their notes automatically redeemed prior to maturity and be willing to lose some or all of their principal at maturity.

The notes will pay a Contingent Interest Payment on each monthly Interest Payment Date at the applicable rate set forth below if the closing price of the Reference Stock on the applicable monthly Observation Date is greater than the applicable Coupon Barrier. However, if the closing price of the applicable Reference Stock is less than or equal to the Coupon Barrier on an Observation Date, the notes will not pay the Contingent Interest Payment for that Observation Date.

If on any Observation Date beginning in May 2019, the closing price of the applicable Reference Stock is greater than the Call Level, the notes will be automatically called. On the applicable Call Settlement Date, for each \$1,000 principal amount, investors will receive the principal amount plus the applicable Contingent Interest Payment.

The notes do not guarantee any return of principal at maturity. Instead, if the notes are not automatically called, the payment at maturity will be based on the Final Stock Price of the applicable Reference Stock and whether the closing price of that Reference Stock has declined from the Initial Stock Price below the Trigger Price during the Monitoring Period (a "Trigger Event"), as described below.

If the notes are not automatically redeemed, a Trigger Event has occurred, and the Final Stock Price is lower than the Initial Stock Price on the Valuation Date, investors will be subject to one-for-one loss of the principal amount of the notes for any percentage decrease from the Initial Stock Price to the Final Stock Price. In such a case, you will receive a cash amount at maturity that is less than the principal amount, together with the final Contingent Interest Payment, if payable.

The notes will not be listed on any securities exchange.

All payments on the notes are subject to the credit risk of Bank of Montreal.

The notes will be issued in minimum denominations of \$1,000 and integral multiples of \$1,000.

Our subsidiary, BMO Capital Markets Corp. ("BMOCM"), is the agent for this offering. See "Supplemental Plan of Distribution (Conflicts of Interest)" below

The notes *will not be* subject to conversion into our common shares or the common shares of any of our affiliates under subsection 39.2(2.3) of the Canada Deposit Insurance Corporation Act (the "CDIC Act").

**Common Terms for Each of the Notes:**

**Pricing Date:** On or about November 27, 2018    **Maturity Date:** On or about February 28, 2020  
**Settlement Date:** On or about November 30, 2018    **Call Level:** 110% of the applicable Initial Stock Price  
**Valuation Date:** On or about February 21, 2020

**Specific Terms for Each of the Notes:**

Autocallable RevEx Number	Reference Stock Issuer	Ticker Symbol	Initial Stock Price	Coupon Barrier and Trigger Price	Contingent Interest Rate	CUSIP	Principal Amount	Price to Public <sup>(1)</sup>	Agent's Commission <sup>(1)</sup>	Proceeds to Bank of Montreal
0459	SPDR® S&P® Oil & Gas Exploration & Production	XOP	[ ]	[ ], 75% of the Initial Price	13.20% (1.10% per month)	06367WEK5 [ ]	100%		0.75%  US\$ [ ]	99.25%  US\$ [ ]

	ETF							
	VanEck		[ ]					
	Vectors™			75%	8.40%		0.75%	99.25%
0460	Gold	GDX	[ ]	of	(0.70% per	06367WEL3 [ ]	100%	
	Miners			the	month)			
	ETF			Initial			US\$[ ]	US\$[ ]
				Price				

(1) Certain dealers who purchase the notes for sale to certain fee-based advisory accounts may forego some or all of their selling concessions, fees or commissions. The public offering price for investors purchasing the notes in these accounts may be between \$992.50 and \$1,000 per \$1,000 in principal amount.

*Investing in the notes involves risks, including those described in the “Selected Risk Considerations” section beginning on page P-5 of this pricing supplement, the “Additional Risk Factors Relating to the Notes” section beginning on page PS-4 of the product supplement, and the “Risk Factors” sections beginning on page S-1 of the prospectus supplement and on page 8 of the prospectus.*

**Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of the notes or passed upon the accuracy of this pricing supplement, the product supplement, the prospectus supplement or the prospectus. Any representation to the contrary is a criminal offense.**

The notes will be our unsecured obligations and will not be savings accounts or deposits that are insured by the United States Federal Deposit Insurance Corporation, the Deposit Insurance Fund, the Canada Deposit Insurance Corporation or any other governmental agency or instrumentality or other entity.

On the date of this preliminary pricing supplement, based on the terms set forth above, the estimated initial value of the notes is \$969.60 per \$1,000 in principal amount as to the notes linked to the XOP, and \$973.90 per \$1,000 in principal amount as to the notes linked to the GDX. The estimated initial value of the notes on the Pricing Date may differ from this value but will not be less than \$955.00 as to each of the notes. However, as discussed in more detail in this pricing supplement, the actual value of each of the notes at any time will reflect many factors and cannot be predicted with accuracy.

**BMO CAPITAL MARKETS**

**Key Terms of Each of the Notes:**

General:	This pricing supplement relates to two separate offerings of notes. Each offering is a separate offering of notes linked to one, and only one, Reference Stock. If you wish to participate in both of the offerings, you must purchase each of the notes separately. The notes offered by this pricing supplement do not represent notes linked to a basket of the Reference Stocks.
Contingent Interest Payment Dates:	Interest, if payable, will be paid on the last business day of each month, beginning on December 31, 2018, and until the maturity date, subject to the automatic redemption feature. The final Contingent Interest Payment Date will be the maturity date.
Contingent Interest Payments:	If the price of the applicable Reference Stock on an Observation Date is greater than the applicable Coupon Barrier, a Contingent Interest Payment will be paid on the applicable Interest Payment Date, at the applicable rate specified on the cover page.
Automatic Redemption:	If, on any Observation Date beginning in May 2019, the closing price of the applicable Reference Stock is greater than the Call Level, the notes will be automatically redeemed.
Payment upon Automatic Redemption:	If the notes are automatically redeemed, then, on the applicable Call Settlement Date, for each \$1,000 principal amount, investors will receive the principal amount plus the applicable Contingent Interest Payment.
Observation Dates:	Five trading days prior to the applicable Contingent Interest Payment Date.
Call Settlement Dates:	The Contingent Interest Payment Date immediately following the applicable Observation Date.
Payment at Maturity:	If the notes are not automatically redeemed, the payment at maturity for the notes is based on the performance of the applicable Reference Stock. You will receive \$1,000 for each \$1,000 in principal amount of the note, unless (a) a Trigger Event has occurred <b>and</b> (b) the Final Stock Price is less than the Initial Stock Price.  If a Trigger Event has occurred, and if the Final Stock Price is less than the Initial Stock Price, you will receive at maturity, for each \$1,000 in principal amount of your notes, a cash amount equal to:

$$\$1,000 + [\$1,000 \times (\text{Percentage Change})]$$

**This amount will be less than the principal amount of your notes, and may be zero.**

In each case, you will also receive the applicable Contingent Interest Payment, if payable.

**Trigger Event:** A Trigger Event will be deemed to occur if the closing price of the applicable Reference Stock is less than the Trigger Price on any trading day during the Monitoring Period.

**Monitoring Period:** The period from the Pricing Date to and including the Valuation Date.

**Percentage Change:**  $\frac{\text{Final Stock Price} - \text{Initial Stock Price}}{\text{Initial Stock Price}}$ , expressed as a percentage

**Initial Stock Price:** The closing price of the applicable Reference Stock on the Pricing Date. The Initial Stock Price is subject to adjustments in certain circumstances. See “General Terms of the Notes — Payment at Maturity” and “— Anti-dilution Adjustments” in the product supplement for additional information about these adjustments.

**Call Level:** 110% of the applicable Initial Stock Price.

**Final Stock Price:** The closing price of the applicable Reference Stock on the Valuation Date.

**Pricing Date:** On or about November 27, 2018

**Settlement Date:** On or about November 30, 2018

**Valuation Date:** On or about February 21, 2020

**Maturity Date:** On or about February 28, 2020

**Physical Delivery Amount:** We will only pay cash on the maturity date, and you will have no right to receive any shares of the applicable Reference Stock.

**Calculation Agent:** BMOCM

**Selling Agent:** BMOCM

**Key Terms of the Notes Linked to the SPDR® S&P® Oil & Gas Exploration & Production ETF:**

Reference Stock: SPDR® S&P® Oil & Gas Exploration & Production ETF (NYSE Arca symbol: XOP). See the section below entitled “The Reference Stocks— SPDR® S&P® Oil & Gas Exploration & Production ETF” for additional information about this Reference Stock.

Contingent Interest Rate: 13.20% per annum (1.10% of the principal amount per month) unless earlier redeemed. Accordingly, each interest payment, if payable, will equal \$11.00 for each \$1,000 in principal amount per month.

Coupon Barrier and Trigger Price: 75% of the Initial Price

CUSIP: 06367WEK5

**Key Terms of the Notes Linked to the VanEck Vectors™ Gold Miners ETF:**

Reference Stock: VanEck Vectors™ Gold Miners ETF (NYSE Arca symbol: GDX). See the section below entitled “The Reference Stocks— VanEck Vectors™ Gold Miners ETF” for additional information about this Reference Stock.

Contingent Interest Rate: 8.40% per annum (0.70% of the principal amount per month) unless earlier redeemed. Accordingly, each interest payment, if payable, will equal \$7.00 for each \$1,000 in principal amount per month.

Coupon Barrier and Trigger Price: 75% of the Initial Price

Price:

CUSIP: 06367WEL3

The Pricing Date and the Settlement Date are subject to change. The actual Pricing Date, Settlement Date, Contingent Interest Payment Dates, Observation Dates, Valuation Date and Maturity Date for each of the notes will be set forth in the final pricing supplement.

## Additional Terms of the Notes

You should read this pricing supplement together with the product supplement dated May 1, 2017, the prospectus supplement dated September 23, 2018 and the prospectus dated April 27, 2017. **This pricing supplement, together with the documents listed below, contains the terms of each of the notes and supersedes all other prior or contemporaneous oral statements as well as any other written materials including preliminary or indicative pricing terms, correspondence, trade ideas, structures for implementation, sample structures, fact sheets, brochures or other educational materials of ours or the agent.** You should carefully consider, among other things, the matters set forth in “Additional Risk Factors Relating to the Notes” in the product supplement, as the notes involve risks not associated with conventional debt securities. We urge you to consult your investment, legal, tax, accounting and other advisers before you invest in the notes.

You may access these documents on the SEC website at [www.sec.gov](http://www.sec.gov) as follows (or if such address has changed, by reviewing our filings for the relevant date on the SEC website):

Product supplement dated May 1, 2017:

<https://www.sec.gov/Archives/edgar/data/927971/000121465917002873/j427172424b5.htm>

Prospectus supplement dated September 23, 2018:

<https://www.sec.gov/Archives/edgar/data/927971/000119312518280416/d624491d424b5.htm>

Prospectus dated April 27, 2017:

<https://www.sec.gov/Archives/edgar/data/927971/000119312517142728/d254784d424b2.htm>

Please note that references in the product supplement to the prospectus supplement will be deemed to refer to the prospectus supplement dated September 23, 2018.

Our Central Index Key, or CIK, on the SEC website is 927971. As used in this pricing supplement, “we,” “us” or “our” refers to Bank of Montreal.

We have filed a registration statement (including a prospectus) with the SEC for the offerings to which this document relates. Before you invest, you should read the prospectus in that registration statement and the other documents that we have filed with the SEC for more complete information about us and these offerings. You may obtain these documents free of charge by visiting the SEC’s website at <http://www.sec.gov>. Alternatively, we will arrange to send

to you the prospectus (as supplemented by the prospectus supplement and product supplement) if you request it by calling our agent toll-free at 1-877-369-5412.

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## Selected Risk Considerations

An investment in the notes involves significant risks. Investing in the notes is not equivalent to investing directly in the applicable Reference Stock. These risks are explained in more detail in the “Additional Risk Factors Relating to the Notes” section of the product supplement.

**Your investment in the notes may result in a loss.** — The notes do not guarantee any return of principal. If the notes are not automatically redeemed, the payment at maturity will be based on the Final Stock Price and whether a Trigger Event has occurred. If a Trigger Event has occurred, and if the Final Stock Price is less than the Initial Stock Price, you will be subject to a one-for-one loss of the principal amount of the notes for any Percentage Change from the Initial Stock Price. In such a case, you will receive at maturity a cash payment that is less than the principal amount of the notes and may be zero. **Accordingly, you could lose up to the entire principal amount of your notes, and your payments on the notes could be limited to the monthly Contingent Interest Payments, if any.**

**The protection provided by the Trigger Price may terminate on any day during the Monitoring Period.** — If the closing price of the applicable Reference Stock on any trading day during the Monitoring Period is less than the Trigger Price, you will be fully exposed at maturity to any decrease in the price of the applicable Reference Stock. Under these circumstances, if the Percentage Change on the Valuation Date is less than zero, you will lose 1% (or a fraction thereof) of the principal amount of your investment for every 1% (or a fraction thereof) that the Final Stock Price is less than the Initial Stock Price. You will be subject to this potential loss of principal even if, after the Trigger Event, the price of the applicable Reference Stock increases above the Trigger Price.

**You may not receive any Contingent Interest Payments with respect to your notes.** — We will not necessarily make periodic interest payments on the notes. If the closing price of the applicable Reference Stock on an Observation Date is less than the Coupon Barrier, we will not pay you the Contingent Interest Payment applicable to that Observation Date. If the closing price of the applicable Reference Stock is less than the Coupon Barrier on each of the Observation Dates, we will not pay you any Contingent Interest Payments during the term of the notes, and you will not receive a positive return on the applicable notes. Furthermore, the non-payment of the Contingent Interest Payment as to the final Observation Date will coincide with a loss of principal on the notes if a Trigger Event has previously occurred, because in such a case, the applicable Final Stock Price will be less than the Trigger Price.

**Your notes are subject to automatic early redemption.** — We will redeem the notes if the closing price of the applicable Reference Stock on any Observation Date beginning in May 2019 is greater than the Call Level. Following an automatic redemption, you may not be able to reinvest your proceeds in an investment with returns that are comparable to the notes.

**Your return on the notes is limited to the applicable Contingent Interest Payments, if any, regardless of any appreciation in the value of the applicable Reference Stock.** — You will not receive a payment at maturity with a value greater than your principal amount plus the final Contingent Interest Payment, if payable. In addition, if the notes are automatically called, you will not receive a payment greater than the principal amount plus the applicable Contingent Interest Payment, even if the Final Stock Price exceeds the Call Level by a substantial amount.

Accordingly, your maximum return on the applicable notes is limited to the potential return represented by the Contingent Interest Payments.

**Your investment is subject to the credit risk of Bank of Montreal.** — Our credit ratings and credit spreads may adversely affect the market value of the notes. Investors are dependent on our ability to pay any amounts due on the notes, and therefore investors are subject to our credit risk and to changes in the market's view of our creditworthiness. Any decline in our credit ratings or increase in the credit spreads charged by the market for taking our credit risk is likely to adversely affect the value of the notes.

**Potential conflicts.** — We and our affiliates play a variety of roles in connection with the issuance of the notes, including acting as calculation agent. In performing these duties, the economic interests of the calculation agent and other affiliates of ours are potentially adverse to your interests as an investor in the notes. We or one or more of our affiliates may also engage in trading of shares of the Reference Stocks or the securities held by the Reference Stocks on a regular basis as part of our general broker-dealer and other businesses, for proprietary accounts, for other accounts under management or to facilitate transactions for our customers. Any of these activities could adversely affect the price of the Reference Stocks and, therefore, the market value of, and the payments on, the notes. We or one or more of our affiliates may also issue or underwrite other securities or financial or derivative instruments with returns linked or related to changes in the performance of the Reference Stocks. By introducing competing products into the marketplace in this manner, we or one or more of our affiliates could adversely affect the market value of the notes.

**Our initial estimated value of the notes will be lower than the price to public.** — Our initial estimated value of the notes is only an estimate, and is based on a number of factors. The price to public of the notes will exceed our initial estimated value, because costs associated with offering, structuring and hedging the notes are included in the price to public, but are not included in the estimated value. These costs include the underwriting discount and selling concessions, the profits that we and our affiliates expect to realize for assuming the risks in hedging our obligations under the notes and the estimated cost of hedging these obligations. The initial estimated value of each of these notes may be as low as the applicable amount indicated on the cover page of this pricing supplement.

**Our initial estimated value does not represent any future value of the notes, and may also differ from the estimated value of any other party.** — Our initial estimated value of each of the notes as of the date of this preliminary pricing supplement is, and our estimated value as determined on the Pricing Date will be, derived using our internal pricing models. This value is based on market conditions and other relevant factors, which include volatility of the applicable Reference Stock, dividend rates and interest rates. Different pricing models and assumptions could provide values for the notes that are greater than or less than our initial estimated value. In addition, market conditions and other relevant factors after the Pricing Date are expected to change, possibly rapidly, and our assumptions may prove to be incorrect. After the Pricing Date, the value of each of the notes could change dramatically due to changes in market conditions, our creditworthiness, and the other factors set forth in this pricing supplement and the product supplement. The value of each of the notes after the Pricing Date is not expected to correlate with one another. These changes are likely to impact the price, if any, at which we or BMOCM would be willing to purchase the notes from you in any secondary market transactions. Our initial estimated values do not represent a minimum price at which we or our affiliates would be willing to buy your notes in any secondary market at any time.

**The terms of the notes are not determined by reference to the credit spreads for our conventional fixed-rate debt.** — To determine the terms of the notes, we will use an internal funding rate that represents a discount from the credit spreads for our conventional fixed-rate debt. As a result, the terms of the notes are less favorable to you than if we had used a higher funding rate.

**Certain costs are likely to adversely affect the value of the notes.** — Absent any changes in market conditions, any secondary market prices of the notes will likely be lower than the price to public. This is because any secondary market prices will likely take into account our then-current market credit spreads, and because any secondary market prices are likely to exclude all or a portion of the underwriting discount and selling concessions, and the hedging profits and estimated hedging costs that are included in the price to public of the notes and that may be reflected on your account statements. In addition, any such price is also likely to reflect a discount to account for costs associated with establishing or unwinding any related hedge transaction, such as dealer discounts, mark-ups and other transaction costs. As a result, the price, if any, at which BMOCM or any other party may be willing to purchase the notes from you in secondary market transactions, if at all, will likely be lower than the price to public. Any sale that you make prior to the maturity date could result in a substantial loss to you.

**Owning the notes is not the same as owning shares of the applicable Reference Stock or a security directly linked to the applicable Reference Stock.** — The return on your notes will not reflect the return you would realize if you actually owned shares of the applicable Reference Stock or a security directly linked to the performance of the applicable Reference Stock and held that investment for a similar period. Your notes may trade quite differently

from the applicable Reference Stock. Changes in the price of the applicable Reference Stock may not result in comparable changes in the market value of your notes. Even if the price of the applicable Reference Stock increases during the term of the notes, the market value of the notes prior to maturity may not increase to the same extent. It is also possible for the market value of the notes to decrease while the price of the applicable Reference Stock increases. In addition, any dividends or other distributions paid on the applicable Reference Stock will not be reflected in the amount payable on the notes.

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**You will not have any shareholder rights and will have no right to receive any shares of the applicable Reference Stock at maturity.** — Investing in your notes will not make you a holder of any shares of the applicable Reference Stock, or any securities held by the applicable Reference Stock. Neither you nor any other holder or owner of the notes will have any voting rights, any right to receive dividends or other distributions, or any other rights with respect to those securities.

**No Delivery of Shares of the applicable Reference Stock.** — The notes will be payable only in cash. You should not invest in the notes if you seek to have the shares of the applicable Reference Stock delivered to you at maturity.

**Changes that affect the applicable Underlying Index will affect the market value of the notes, whether the notes will be automatically called, and the amount you will receive at maturity.** — The policies of the applicable index sponsor, S&P Dow Jones Indices LLC (“S&P”) for the Underlying Index of the SPDRS&P<sup>®</sup> Oil & Gas Exploration & Production ETF, and NYSE Arca for the Underlying Index of the VanEck Vectors<sup>™</sup> Gold Miners ETF, concerning the calculation of the applicable Underlying Index, additions, deletions or substitutions of the components of the applicable Underlying Index and the manner in which changes affecting those components, such as stock dividends, reorganizations or mergers, may be reflected in the applicable Underlying Index and, therefore, could affect the share price of the applicable Reference Stock, the amounts payable on the notes, whether the notes are automatically called, and the market value of the notes prior to maturity. The amounts payable on the notes and their market value could also be affected if the applicable index sponsor changes these policies, for example, by changing the manner in which it calculates the applicable Underlying Index, or if the applicable index sponsor discontinues or suspends the calculation or publication of the applicable Underlying Index.

**Adjustments to the applicable Reference Stock could adversely affect the notes.** — The sponsor and advisor of the applicable Reference Stock (which is (a) SSgA Funds Management, Inc. (“SSFM”) for the SPDRS&P<sup>®</sup> Oil & Gas Exploration & Production ETF, and (b) Van Eck Associates Corporation (“Van Eck”) for the VanEck Vectors<sup>™</sup> Gold Miners ETF) is responsible for calculating and maintaining the applicable Reference Stock. The sponsor and advisor of the applicable Reference Stock can add, delete or substitute the stocks comprising the applicable Reference Stock or make other methodological changes that could change the share price of the applicable Reference Stock at any time. If one or more of these events occurs, the calculation of the amount payable at maturity may be adjusted to reflect such event or events. Consequently, any of these actions could adversely affect the amounts payable on the notes and/or the market value of the notes.

**We have no affiliation with the index sponsor of the applicable Underlying Index and will not be responsible for its actions.** — The sponsor of the applicable Underlying Index is not our affiliate, and will not be involved in the offerings of the notes in any way. Consequently, we have no control over the actions of the index sponsor of the applicable Underlying Index, including any actions of the type that would require the calculation agent to adjust the payment to you at maturity. The index sponsor of the applicable Underlying Index has no obligation of any sort with respect to the notes. Thus, the index sponsor of the applicable Underlying Index has no obligation to take your interests into consideration for any reason, including in taking any actions that might affect the value of the notes. None of our proceeds from the issuance of the notes will be delivered to the index sponsor of the applicable Underlying Index.

**We and our affiliates do not have any affiliation with the applicable investment advisor or the applicable Reference Stock Issuer and are not responsible for their public disclosure of information.** — The investment advisor of the applicable Reference Stock Issuer advises the applicable Reference Stock Issuer on various matters, including matters relating to the policies, maintenance and calculation of the applicable Reference Stock. We and our affiliates are not affiliated with the applicable investment advisor or the applicable Reference Stock Issuer in any way and have no ability to control or predict its actions, including any errors in or discontinuance of disclosure regarding the methods or policies relating to the applicable Reference Stock. Neither the applicable investment advisor nor the applicable Reference Stock Issuer is involved in the offerings of the notes in any way or has any obligation to consider your interests as an owner of the notes in taking any actions relating to the applicable Reference Stock Issuer that might affect the value of the notes. Neither we nor any of our affiliates has independently verified the adequacy or accuracy of the information about the applicable investment advisor, the applicable Reference Stock Issuer or the applicable Reference Stock contained in any public disclosure of information. You, as an investor in the notes, should make your own investigation into the applicable Reference Stock Issuer.

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**The correlation between the performance of the applicable Reference Stock and the performance of the applicable Underlying Index may be imperfect.** — The performance of the applicable Reference Stock is linked principally to the performance of the applicable Underlying Index. However, because of the potential discrepancies identified in more detail in the product supplement, the return on the applicable Reference Stock may correlate imperfectly with the return on the applicable Underlying Index.

**The applicable Reference Stock is subject to management risks.** — The applicable Reference Stock is subject to management risk, which is the risk that the applicable investment advisor's investment strategy, the implementation of which is subject to a number of constraints, may not produce the intended results. For example, the applicable investment advisor for a Reference Stock may invest a portion of the applicable Reference Stock Issuer's assets in securities not included in the relevant industry or sector but which the applicable investment advisor believes will help the applicable Reference Stock track the relevant industry or sector.

**Lack of liquidity.** — The notes will not be listed on any securities exchange. BMOCM may offer to purchase the notes in the secondary market, but is not required to do so. Even if there is a secondary market, it may not provide enough liquidity to allow you to trade or sell the notes easily. Because other dealers are not likely to make a secondary market for the notes, the price at which you may be able to trade the notes is likely to depend on the price, if any, at which BMOCM is willing to buy the notes.

**Hedging and trading activities.** — We or any of our affiliates may carry out hedging activities related to the notes, including in the applicable Reference Stock, the securities that it holds, or instruments related to the applicable Reference Stock. We or our affiliates may also trade in the applicable Reference Stock, such securities, or instruments related to the applicable Reference Stock from time to time. Any of these hedging or trading activities on or prior to the Pricing Date and during the term of the notes could adversely affect the payments on the notes.

**Many economic and market factors will influence the value of the notes.** — In addition to the price of the applicable Reference Stock and interest rates on any trading day, the value of the notes will be affected by a number of economic and market factors that may either offset or magnify each other, and which are described in more detail in the product supplement.

**You must rely on your own evaluation of the merits of an investment linked to the applicable Reference Stock.** — In the ordinary course of their businesses, our affiliates from time to time may express views on expected movements in the price of the applicable Reference Stock or the securities held by the applicable Reference Stock. One or more of our affiliates have published, and in the future may publish, research reports that express views on the applicable Reference Stock or these securities. However, these views are subject to change from time to time. Moreover, other professionals who deal in the markets relating to applicable Reference Stock at any time may have significantly different views from those of our affiliates. You are encouraged to derive information concerning the applicable Reference Stock from multiple sources, and you should not rely on the views expressed by our affiliates.

Neither the offering of the notes nor any views which our affiliates from time to time may express in the ordinary course of their businesses constitutes a recommendation as to the merits of an investment in the notes.

**Significant aspects of the tax treatment of the notes are uncertain.** — The tax treatment of each of the notes is uncertain. We do not plan to request a ruling from the Internal Revenue Service or from any Canadian authorities regarding the tax treatment of each of the notes, and the Internal Revenue Service or a court may not agree with the tax treatment described in this pricing supplement.

The Internal Revenue Service has released a notice that may affect the taxation of holders of “prepaid forward contracts” and similar instruments. According to the notice, the Internal Revenue Service and the U.S. Treasury are actively considering whether the holder of such instruments should be required to accrue ordinary income on a current basis. While it is not clear whether the notes would be viewed as similar to such instruments, it is possible that any future guidance could materially and adversely affect the tax consequences of an investment in the notes, possibly with retroactive effect.

Please read carefully the section entitled “Supplemental U.S. Federal Income Tax Considerations” in this pricing supplement, the section entitled “United States Federal Income Taxation” in the accompanying prospectus and the section entitled “Certain Income Tax Consequences” in the accompanying prospectus supplement. You should consult your tax advisor about your own tax situation.



**Additional Risks Relating to the Notes Linked to the SPDR® S&P® Oil & Gas Exploration & Production ETF**

**The stocks included in the Underlying Index of SPDR® S&P® Oil & Gas Exploration & Production ETF are concentrated in one sector.** — All of the stocks included in the applicable Underlying Index are issued by companies in the oil and gas exploration and production sector. As a result, the stocks that will determine the performance of the applicable Underlying Index, which the applicable Reference Stock seeks to replicate, are concentrated in one sector. Although an investment in the notes will not give holders any ownership or other direct interests in the stocks comprising the applicable Underlying Index, the return on an investment in the notes will be subject to certain risks associated with a direct equity investment in companies in the oil and gas exploration and production sector. Accordingly, by investing in the notes, you will not benefit from the diversification which could result from an investment linked to companies that operate in multiple sectors.

The issuers of the stocks held by the applicable Reference Stock and included in the applicable Underlying Index develop and produce, among other things, crude oil and natural gas, and provide, among other things, drilling services and other services related to oil and gas production and distribution. Stock prices for these types of companies are affected by supply and demand both for their specific product or service and for oil and gas products in general. The price of oil and gas, exploration and production spending, government regulation, world events and economic conditions will likewise affect the performance of these companies. Correspondingly, the stocks of companies in this sector are subject to swift price fluctuations caused by events relating to international politics, energy conservation, the success of exploration projects and tax and other governmental regulatory policies. Weak demand for the companies' products or services or for oil and gas products and services in general, as well as negative developments in these other areas, would adversely impact the value of the stocks held by the applicable Reference Stock and included in the applicable Underlying Index, the market price of the applicable Reference Stock, and the value of the notes.

**Additional Risks Relating to the Notes Linked to the VanEck Vectors™ Gold Miners ETF**

**The holdings of the VanEck Vectors™ Gold Miners ETF are concentrated in the gold and silver mining industries.** — All or substantially all of the equity securities held by the applicable Reference Stock are issued by gold or silver mining companies. An investment in the notes linked to the applicable Reference Stock will be concentrated in the gold and silver mining industries. As a result of being linked to a single industry or sector, the notes may have increased volatility as the share price of the applicable Reference Stock may be more susceptible to adverse factors that affect that industry or sector. Competitive pressures may have a significant effect on the financial condition of companies in these industries.

In addition, these companies are highly dependent on the price of gold or silver, as applicable. These prices fluctuate widely and may be affected by numerous factors. Factors affecting gold prices include economic factors, including, among other things, the structure of and confidence in the global monetary system, expectations of the future rate of

inflation, the relative strength of, and confidence in, the U.S. dollar (the currency in which the price of gold is generally quoted), interest rates and gold borrowing and lending rates, and global or regional economic, financial, political, regulatory, judicial or other events. Gold prices may also be affected by industry factors such as industrial and jewelry demand, lending, sales and purchases of gold by the official sector, including central banks and other governmental agencies and multilateral institutions which hold gold, levels of gold production and production costs, and short-term changes in supply and demand because of trading activities in the gold market. Factors affecting silver prices include general economic trends, technical developments, substitution issues and regulation, as well as specific factors including industrial and jewelry demand, expectations with respect to the rate of inflation, the relative strength of the U.S. dollar (the currency in which the price of silver is generally quoted) and other currencies, interest rates, central bank sales, forward sales by producers, global or regional political or economic events, and production costs and disruptions in major silver producing countries such as Mexico and Peru. The supply of silver consists of a combination of new mine production and existing stocks of bullion and fabricated silver held by governments, public and private financial institutions, industrial organizations and private individuals. In addition, the price of silver has on occasion been subject to very rapid short-term changes due to speculative activities. From time to time, above-ground inventories of silver may also influence the market.

**Relationship to gold and silver bullion.** — The applicable Reference Stock invests in shares of gold and silver mining companies, but not in gold bullion or silver bullion. The applicable Reference Stock may under- or over-perform gold bullion and/or silver bullion over the term of the notes.

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**Examples of the Hypothetical Payment at Maturity for a \$1,000 Investment in the Notes**

The following table illustrates the hypothetical payments on a note at maturity, assuming that the notes are not automatically called. The hypothetical payments are based on a \$1,000 investment in the note, a hypothetical Initial Stock Price of \$100.00, a hypothetical Trigger Price of \$75.00 (75.00% of the hypothetical Initial Stock Price), a hypothetical Call Level of \$110.00 (110% of the hypothetical Initial Stock Price), a range of hypothetical Final Stock Prices and the effect on the payment at maturity if (i) a Trigger Event occurs or (ii) if a Trigger Event does not occur.

The hypothetical examples shown below are intended to help you understand the terms of the notes. If the notes are not automatically called, the actual cash amount that you will receive at maturity will depend upon the Final Stock Price of the applicable Reference Stock, and whether its closing price is below the Trigger Price on any trading day during the Monitoring Period. If the notes are automatically called prior to maturity, the hypothetical examples below will not be relevant, and you will receive on the applicable Call Settlement Date, for each \$1,000 principal amount, the principal amount plus the applicable Contingent Interest Payment.

As discussed in more detail above, your total return on the notes will depend on the number of Contingent Interest Payment Dates on which the Contingent Interest Payment is payable. It is possible that the only payments on your notes will be the payment, if any, due at maturity. The payment at maturity will not exceed the principal amount, and may be significantly less.

**Payment at Maturity (Excluding Interest Payments)**

<b>Hypothetical Final Stock Price</b>	<b>Hypothetical Final Stock Price Expressed as a Percentage of the Initial Stock Price</b>	<b>Payment at Maturity (Excluding Interest Payments)</b>	
		<b>(i) if the closing market price of the applicable Reference Stockprice does not fall below the Trigger Price on any day during the Monitoring Period</b>	<b>(ii) if the closing market price of the applicable Reference Stock falls below the Trigger Price on any day during the Monitoring Period</b>
\$150.00	150.00%	\$1,000.00	\$1,000.00

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\$125.00	125.00%	\$1,000.00	\$1,000.00
\$110.00	110.00%	\$1,000.00	\$1,000.00
\$100.00	100.00%	\$1,000.00	\$1,000.00
\$90.00	90.00%	\$1,000.00	\$900.00
\$80.00	80.00%	\$1,000.00	\$800.00
\$75.00	75.00%	\$1,000.00	\$750.00
\$70.00	70.00%	N/A	\$700.00
\$65.00	65.00%	N/A	\$650.00
\$50.00	50.00%	N/A	\$500.00
\$25.00	25.00%	N/A	\$250.00
\$0.00	0.00%	N/A	\$0.00

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## **Supplemental U.S. Federal Income Tax Considerations**

*The following, together with the discussion of U.S. federal income taxation in the accompanying prospectus and prospectus supplement, is a general description of the material U.S. tax considerations relating to the notes. It does not purport to be a complete analysis of all tax considerations relating to the notes. Prospective purchasers of the notes should consult their tax advisors as to the consequences under the tax laws of the country of which they are resident for tax purposes and the tax laws of Canada and the U.S. of acquiring, holding and disposing of the notes and receiving payments under the notes. This summary is based upon the law as in effect on the date of this pricing supplement and is subject to any change in law that may take effect after such date.*

The following section supplements the discussion of U.S. federal income taxation in the accompanying prospectus and prospectus supplement with respect to United States holders (as defined in the accompanying prospectus). It applies only to those holders who are not excluded from the discussion of U.S. federal income taxation in the accompanying prospectus. It does not apply to holders subject to special rules including holders subject to Section 451(b) of the Code. In addition, the discussion below assumes that an investor in the notes will be subject to a significant risk that it will lose a significant amount of its investment in the notes. Bank of Montreal intends to treat conditional interest payments with respect to the notes as U.S. source income for U.S. federal income tax purposes.

You should consult your tax advisor concerning the U.S. federal income tax and other tax consequences of your investment in the notes in your particular circumstances, including the application of state, local or other tax laws and the possible effects of changes in federal or other tax laws.

**NO STATUTORY, JUDICIAL OR ADMINISTRATIVE AUTHORITY DIRECTLY DISCUSSES HOW THE NOTES SHOULD BE TREATED FOR U.S. FEDERAL INCOME TAX PURPOSES. AS A RESULT, THE U.S. FEDERAL INCOME TAX CONSEQUENCES OF AN INVESTMENT IN THE NOTES ARE UNCERTAIN. BECAUSE OF THE UNCERTAINTY, YOU SHOULD CONSULT YOUR TAX ADVISOR IN DETERMINING THE U.S. FEDERAL INCOME TAX AND OTHER TAX CONSEQUENCES OF YOUR INVESTMENT IN THE NOTES, INCLUDING THE APPLICATION OF STATE, LOCAL OR OTHER TAX LAWS AND THE POSSIBLE EFFECTS OF CHANGES IN FEDERAL OR OTHER TAX LAWS.**

We will not attempt to ascertain whether any Reference Stock or any of the entities whose stock is owned by that Reference Stock would be treated as a “passive foreign investment company” within the meaning of Section 1297 of the Code or a “U.S. real property holding corporation” within the meaning of Section 897 of the Code. If a Reference Stock or any of the entities whose stock is owned by that Reference Stock were so treated, certain adverse U.S. federal income tax consequences could possibly apply. You should refer to any available information filed with the SEC by each Reference Stock and the entities whose stock is owned by that Reference Stock and consult your tax advisor regarding the possible consequences to you in this regard.

In the opinion of our counsel, Morrison & Foerster LLP, it would generally be reasonable to treat a note with terms described in this pricing supplement as a pre-paid cash-settled contingent income-bearing derivative contract in respect of the applicable Reference Stock for U.S. federal income tax purposes, and the terms of the notes require a holder and us (in the absence of a change in law or an administrative or judicial ruling to the contrary) to treat the notes for all tax purposes in accordance with such characterization. Although the U.S. federal income tax treatment of the conditional interest payments is uncertain, we intend to take the position, and the following discussion assumes, that such conditional interest payments (including any interest payment on or with respect to the maturity date) constitute taxable ordinary income to a United States holder at the time received or accrued in accordance with the holder's regular method of accounting. If the notes are treated as described above, it would be reasonable for a United States holder to take the position that it will recognize capital gain or loss upon the sale or maturity of the notes in an amount equal to the difference between the amount a United States holder receives at such time (other than amounts properly attributable to any interest payments, which would be treated, as described above, as ordinary income) and the United States holder's tax basis in the notes. In general, a United States holder's tax basis in the notes will be equal to the price the holder paid for the notes. Capital gain recognized by an individual United States holder is generally taxed at ordinary income rates where the property is held for one year or less. The deductibility of capital losses is subject to limitations.

## **Alternative Treatments**

Alternative tax treatments of the notes are also possible and the Internal Revenue Service might assert that a treatment other than that described above is more appropriate. For example, it would be possible to treat the notes, and the Internal Revenue Service might assert that the notes should be treated, as a single debt instrument. If the notes are so treated, a United States holder would generally be required to accrue interest currently over the term of the notes irrespective of the Contingent Interest Payments, if any, paid on the notes. In addition, any gain a United States holder might recognize upon the sale or maturity of the notes would be ordinary income and any loss recognized by a holder at such time would be ordinary loss to the extent of interest that same holder included in income in the current or previous taxable years in respect of the notes, and thereafter, would be capital loss.

Because of the absence of authority regarding the appropriate tax characterization of the notes, it is also possible that the Internal Revenue Service could seek to characterize the notes in a manner that results in other tax consequences that are different from those described above.

The Internal Revenue Service has released a notice that may affect the taxation of holders of the notes. According to the notice, the Internal Revenue Service and the Treasury Department are actively considering whether the holder of an instrument such as the notes should be required to accrue ordinary income on a current basis irrespective of any interest payments, and they sought taxpayer comments on the subject. It is not possible to determine what guidance they will ultimately issue, if any. It is possible, however, that under such guidance, holders of the notes will ultimately be required to accrue income currently and this could be applied on a retroactive basis. The Internal Revenue Service and the Treasury Department are also considering other relevant issues, including whether additional gain or loss from such instruments should be treated as ordinary or capital and whether the special “constructive ownership rules” of Section 1260 of the Code might be applied to such instruments. Holders are urged to consult their tax advisors concerning the significance, and the potential impact, of the above considerations. We intend to treat the notes for U.S. federal income tax purposes in accordance with the treatment described in this pricing supplement unless and until such time as the Treasury Department and Internal Revenue Service determine that some other treatment is more appropriate.

## **Backup Withholding and Information Reporting**

Please see the discussion under “United States Federal Income Taxation—Other Considerations—Backup Withholding and Information Reporting” in the accompanying prospectus for a description of the applicability of the backup withholding and information reporting rules to payments made on your notes.

## **Non-United States Holders**



The following discussion applies to non-United States holders of the notes. A non-United States holder is a beneficial owner of a note that, for U.S. federal income tax purposes, is a non-resident alien individual, a foreign corporation, or a foreign estate or trust.

While the U.S. federal income tax treatment of the notes (including proper characterization of the conditional interest payments for U.S. federal income tax purposes) is uncertain, U.S. federal income tax at a 30% rate (or at a lower rate under an applicable income tax treaty) will be withheld in respect of the Contingent Interest Payments paid to a non-United States holder unless such payments are effectively connected with the conduct by the non-United States holder of a trade or business in the U.S. (in which case, to avoid withholding, the non-United States holder will be required to provide a Form W-8ECI). We will not pay any additional amounts in respect of such withholding. To claim benefits under an income tax treaty, a non-United States holder must obtain a taxpayer identification number and certify as to its eligibility under the appropriate treaty's limitations on benefits article, if applicable (which certification may generally be made on a Form W-8BEN or W-8BEN-E, or a substitute or successor form). In addition, special rules may apply to claims for treaty benefits made by corporate non-United States holders. A non-United States holder that is eligible for a reduced rate of U.S. federal withholding tax pursuant to an income tax treaty may obtain a refund of any excess amounts withheld by filing an appropriate claim for refund with the Internal Revenue Service. The availability of a lower rate of withholding or an exemption from withholding under an applicable income tax treaty will depend on the proper characterization of the conditional interest payments under U.S. federal income tax laws and whether such treaty rate or exemption applies to such payments. No assurance can be provided on the proper characterization of the conditional interest payments for U.S. federal income tax purposes and, accordingly, no assurance can be provided on the availability of benefits under any income tax treaty. Non-United States holders must consult their tax advisors in this regard.

Except as discussed below, a non-United States holder will generally not be subject to U.S. federal income or withholding tax on any gain (not including for the avoidance of doubt any amounts properly attributable to any interest which would be subject to the rules discussed in the previous paragraph) upon the sale or maturity of the notes, provided that (i) the holder complies with any applicable certification requirements (which certification may generally be made on a Form W-8BEN or W-8BEN-E, or a substitute or successor form), (ii) the payment is not effectively connected with the conduct by the holder of a U.S. trade or business, and (iii) if the holder is a non-resident alien individual, such holder is not present in the U.S. for 183 days or more during the taxable year of the sale or maturity of the notes. In the case of (ii) above, the holder generally would be subject to U.S. federal income tax with respect to any income or gain in the same manner as if the holder were a United States holder and, in the case of a holder that is a corporation, the holder may also be subject to a branch profits tax equal to 30% (or such lower rate provided by an applicable U.S. income tax treaty) of a portion of its earnings and profits for the taxable year that are effectively connected with its conduct of a trade or business in the U.S., subject to certain adjustments. Payments made to a non-United States holder may be subject to information reporting and to backup withholding unless the holder complies with applicable certification and identification requirements as to its foreign status.

A “dividend equivalent” payment is treated as a dividend from sources within the U.S. and such payments generally would be subject to a 30% U.S. withholding tax if paid to a non-United States holder. Under U.S. Treasury Department regulations, payments (including deemed payments) with respect to equity-linked instruments (“ELIs”) that are “specified ELIs” may be treated as dividend equivalents if such specified ELIs reference an interest in an “underlying security,” which is generally any interest in an entity taxable as a corporation for U.S. federal income tax purposes if a payment with respect to such interest could give rise to a U.S. source dividend. However, Internal Revenue Service guidance provides that withholding on dividend equivalent payments will not apply to specified ELIs that are not delta-one instruments and that are issued before January 1, 2021. Based on our determination that the notes are not “delta-one” instruments, non-U.S. holders should not be subject to withholding on dividend equivalent payments, if any, under the notes. However, it is possible that the notes could be treated as deemed reissued for U.S. federal income tax purposes upon the occurrence of certain events affecting the applicable Reference Stock or the notes, and following such occurrence the notes could be treated as delta-one specified ELIs that are subject to withholding on dividend equivalent payments. Non-United States holders that enter, or have entered, into other transactions in respect of the applicable Reference Stock or the notes should consult their tax advisors as to the application of the dividend equivalent withholding tax in the context of the notes and their other transactions. If any payments are treated as dividend equivalents subject to withholding, we (or the applicable paying agent) would be entitled to withhold taxes without being required to pay any additional amounts with respect to amounts so withheld.

As discussed above, alternative characterizations of the notes for U.S. federal income tax purposes are possible. Should an alternative characterization, by reason of change or clarification of the law, by regulation or otherwise, cause payments as to the notes to become subject to withholding tax in addition to the withholding tax described above, we will withhold tax at the applicable statutory rate. The Internal Revenue Service has also indicated that it is considering whether income in respect of instruments such as the notes should be subject to withholding tax. Prospective investors should consult their own tax advisors in this regard.

## **Foreign Account Tax Compliance Act**

The Foreign Account Tax Compliance Act imposes a 30% U.S. withholding tax on certain U.S. source payments, including interest (and OID), dividends, other fixed or determinable annual or periodical gain, profits, and income, and on the gross proceeds from a disposition of property of a type which can produce U.S. source interest or dividends (“Withholdable Payments”), if paid to a foreign financial institution (including amounts paid to a foreign financial institution on behalf of a holder), unless such institution enters into an agreement with the Treasury Department to collect and provide to the Treasury Department substantial information regarding U.S. account holders, including certain account holders that are foreign entities with U.S. owners, with such institution. A note may constitute an account for these purposes. The legislation also generally imposes a withholding tax of 30% on Withholdable Payments made to a non-financial foreign entity unless such entity provides the withholding agent with a certification that it does not have any substantial U.S. owners or a certification identifying the direct and indirect substantial U.S. owners of the entity.

The U.S. Treasury Department and the Internal Revenue Service have announced that withholding on payments of gross proceeds from a sale or redemption of the notes will only apply to payments made after December 31, 2018. If we determine withholding is appropriate with respect to the notes, we will withhold tax at the applicable statutory rate, and we will not pay any additional amounts in respect of such withholding. Account holders subject to information reporting requirements pursuant to the Foreign Account Tax Compliance Act may include holders of the notes. Foreign financial institutions and non-financial foreign entities located in jurisdictions that have an intergovernmental agreement with the United States governing the Foreign Account Tax Compliance Act may be subject to different rules. Holders are urged to consult with their own tax advisors regarding the possible implications of this legislation on their investment in the notes.

### **Supplemental Plan of Distribution (Conflicts of Interest)**

BMOCM will purchase the notes from us at a purchase price reflecting the commission set forth on the cover page of this pricing supplement. BMOCM has informed us that, as part of its distribution of the notes, it will reoffer the notes to other dealers who will sell them. Each such dealer, or each additional dealer engaged by a dealer to whom BMOCM reoffers the notes, will receive a commission from BMOCM, which will not exceed the commission set forth on the cover page. This commission will include a selling concession paid by BMOCM or one of its affiliates to certain dealers of up to 1.60% of the principal amount in connection with the distribution of the notes.

Certain dealers who purchase the notes for sale to certain fee-based advisory accounts may forego some or all of their selling concessions, fees or commissions. The public offering price for investors purchasing the notes in these accounts may be less than 100% of the principal amount, as set forth on the cover page of this document. Investors that hold their notes in these accounts may be charged fees by the investment advisor or manager of that account based on the amount of assets held in those accounts, including the notes.

We will deliver the notes on a date that is greater than two business days following the pricing date. Under Rule 15c6-1 of the Securities Exchange Act of 1934, trades in the secondary market generally are required to settle in two business days, unless the parties to any such trade expressly agree otherwise. Accordingly, purchasers who wish to trade the notes more than two business days prior to the issue date will be required to specify alternative settlement arrangements to prevent a failed settlement.

We own, directly or indirectly, all of the outstanding equity securities of BMOCM, the agent for this offering. In accordance with FINRA Rule 5121, BMOCM may not make sales in this offering to any of its discretionary accounts without the prior written approval of the customer.

We reserve the right to withdraw, cancel or modify the offering of the notes and to reject orders in whole or in part. You may cancel any order for the notes prior to its acceptance.

You should not construe the offering of the notes as a recommendation of the merits of acquiring an investment linked to the applicable Reference Stock or as to the suitability of an investment in the notes.

BMOCM may, but is not obligated to, make a market in the notes. BMOCM will determine any secondary market prices that it is prepared to offer in its sole discretion.

We may use the final pricing supplement relating to the notes in the initial sale of the notes. In addition, BMOCM or another of our affiliates may use the final pricing supplement relating to the notes in market-making transactions in any notes after their initial sale. Unless BMOCM or we inform you otherwise in the confirmation of sale, the final pricing supplement is being used by BMOCM in a market-making transaction.

For a period of approximately three months following issuance of the notes, the price, if any, at which we or our affiliates would be willing to buy the notes from investors, and the value that BMOCM may also publish for the notes through one or more financial information vendors and which could be indicated for the notes on any brokerage account statements, will reflect a temporary upward adjustment from our estimated value of the notes that would otherwise be determined and applicable at that time. This temporary upward adjustment represents a portion of (a) the hedging profit that we or our affiliates expect to realize over the term of the notes and (b) the underwriting discount and the selling concessions paid in connection with this offering. The amount of this temporary upward adjustment will decline to zero on a straight-line basis over the three-month period.

No Prospectus (as defined in Directive 2003/71/EC (as amended, the “Prospectus Directive”)) will be prepared in connection with the notes. Accordingly, the notes may not be offered to the public in any member state of the European Economic Area (the “EEA”), and any purchaser of the notes who subsequently sells any of the notes in any EEA member state must do so only in accordance with the requirements of the Prospectus Directive, as implemented in that member state.

The notes are not intended to be offered, sold or otherwise made available to, and should not be offered, sold or otherwise made available to, any retail investor in the EEA. For these purposes, the expression “offer” includes the communication in any form and by any means of sufficient information on the terms of the offer and the notes to be offered so as to enable an investor to decide to purchase or subscribe the notes, and a “retail investor” means a person who is one (or more) of: (a) a retail client, as defined in point (11) of Article 4(1) of Directive 2014/65/EU (as amended, “MiFID II”); or (b) a customer, within the meaning of Insurance Distribution Directive 2016/97/EU, as amended, where that customer would not qualify as a professional client as defined in point (10) of Article 4(1) of MiFID II; or (c) not a qualified investor as defined in the Prospectus Directive. Consequently, no key information document required by Regulation (EU) No 1286/2014 (as amended, the “PRIIPs Regulation”) for offering or selling the notes or otherwise making them available to retail investors in the EEA has been prepared, and therefore, offering or selling the notes or otherwise making them available to any retail investor in the EEA may be unlawful under the PRIIPs Regulation.

### **Additional Information Relating to the Estimated Initial Value of the Notes**

Our estimated initial value of each of the notes on the date of this preliminary pricing supplement, and that will be set forth on the cover page of the final pricing supplement relating to the notes, equals the sum of the values of the following hypothetical components:

- a fixed-income debt component with the same tenor as the notes, valued using our internal funding rate for structured notes; and

- one or more derivative transactions relating to the economic terms of the notes.

The internal funding rate used in the determination of the initial estimated value generally represents a discount from the credit spreads for our conventional fixed-rate debt. The value of these derivative transactions are derived from our internal pricing models. These models are based on factors such as the traded market prices of comparable derivative instruments and on other inputs, which include volatility, dividend rates, interest rates and other factors. As a result, the estimated initial value of each of the notes on the Pricing Date will be determined based on market conditions at that time.

## **The Reference Stocks**

We have derived the following information from publicly available documents. We have not independently verified the accuracy or completeness of the following information. We are not affiliated with the applicable Reference Stock Issuer and the applicable Reference Stock Issuer will have no obligations with respect to the notes. This pricing supplement relates only to the notes and does not relate to the shares of the applicable Reference Stock or any securities included in the applicable Underlying Index. Neither we nor any of our affiliates participates in the preparation of the publicly available documents described below. Neither we nor any of our affiliates has made any due diligence inquiry with respect to the applicable Reference Stock in connection with the offering of the notes. There can be no assurance that all events occurring prior to the date of this pricing supplement, including events that would affect the accuracy or completeness of the publicly available documents described below and that would affect the trading price of the shares of the applicable Reference Stock, have been or will be publicly disclosed. Subsequent disclosure of any events or the disclosure of or failure to disclose material future events concerning the applicable Reference Stock could affect the price of the shares of the applicable Reference Stock during the Monitoring Period, on each Observation Date and on the Valuation Date, and therefore could affect the payments on the notes.

We encourage you to review recent prices of the applicable Reference Stock prior to making an investment decision.

The selection of the applicable Reference Stock is not a recommendation to buy or sell the shares of the applicable Reference Stock. Neither we nor any of our affiliates make any representation to you as to the performance of the shares of the applicable Reference Stock. Information provided to or filed with the SEC under the Securities Exchange Act of 1934 and the Investment Company Act of 1940 relating to the applicable Reference Stock may be obtained through the SEC's website at <http://www.sec.gov>.

## **SPDR® S&P® Oil & Gas Exploration & Production ETF**

In this section, Reference Stock Issuer refers to the SPDR® S&P® Oil & Gas Exploration & Production ETF (the “XOP”), Reference Stock refers to the shares of the XOP, and Underlying Index refers to the S&POil & Gas Exploration & Production Select Industry® Index.

The Reference Stock is an investment portfolio maintained and managed by SSFM. The Reference Stock trades on the NYSE Arca under the ticker symbol “XOP.” The inception date of the Reference Stock is June 19, 2006. Prior to January 8, 2007, the Reference Stock was known as the SPDR® Oil & Gas Exploration & Production ETF.

Information provided to or filed with the SEC by the SPDR® Series Trust (“SPDR”) under the Securities Exchange Act of 1934 can be located by reference to its Central Index Key, or CIK, 1064642 through the SEC’s website at <http://www.sec.gov>. Additional information about SSFM and the Reference Stock may be obtained from other sources including, but not limited to, press releases, newspaper articles and other publicly disseminated documents. We have not made any independent investigation as to the accuracy or completeness of such information.

The Reference Stock seeks to provide investment results that correspond generally to the price and yield performance, before fees and expenses, of the Underlying Index. The Underlying Index represents the oil and gas exploration and production sub-industry portion of the S&P Total Market Index (“S&P TMI”), an index that measures the performance of the U.S. equity market. The Reference Stock is composed of companies that are in the oil and gas sector exploration and production.

The Reference Stock utilizes a sampling strategy, which means that it is not required to purchase all of the securities represented in its Underlying Index. Instead, it may purchase a subset of the securities in the Underlying Index in an effort to hold a portfolio of securities with generally the same risk and return characteristics of the Underlying Index. Under normal market conditions, the Reference Stock will invest at least 80% of its total assets in common stocks that comprise the Underlying Index.

The information above was compiled from the SPDR® website. We have not independently investigated the accuracy of that information. Information contained in the SPDR® website is not incorporated by reference in, and should not be considered a part of, this document.

**The Underlying Index: S&P® Oil & Gas Exploration & Production Select Industry® Index**



We have derived all information contained in this document regarding the Underlying Index, including, without limitation, its make-up, method of calculation and changes in its components, from publicly available information. Such information reflects the policies of, and is subject to change by, S&P.

The Underlying Index is an equal-weighted index that is designed to measure the performance of the oil and gas exploration and production sub-industry portion of the S&P TMI. The S&P TMI includes all U.S. common equities listed on the NYSE (including NYSE Arca), the NYSE American, the Nasdaq Global Select Market, and the Nasdaq Capital Market.

To be eligible for inclusion in the Underlying Index, companies must be in the S&P TMI and must be included in the relevant Global Industry Classification Standard (GICS) sub-industry. The GICS was developed to establish a global standard for categorizing companies into sectors and industries. In addition to the above, companies must satisfy one of the three following combined size and liquidity criteria:

- float-adjusted market capitalization above US\$500 million and float-adjusted liquidity ratio above 90%;
- float-adjusted market capitalization above US\$400 million and float-adjusted liquidity ratio above 150%; or

for current constituents, float adjusted market capitalization above US\$300 million and float-adjusted liquidity ratio greater than or equal to 50%.

All U.S. companies satisfying these requirements are included in the Underlying Index. The total number of companies in the Underlying Index should be at least 35. If there are fewer than 35 stocks, stocks from a supplementary list of highly correlated sub-industries that meet the market capitalization and liquidity thresholds above are included in order of their float-adjusted market capitalization to reach 35 constituents. Minimum market capitalization requirements may be relaxed to ensure there are at least 22 companies in the Underlying Index as of each rebalancing effective date.

Eligibility factors include:

**Market Capitalization:** Float-adjusted market capitalization should be at least US\$400 million for inclusion in the Underlying Index. Existing index components must have a float-adjusted market capitalization of US\$300 million to remain in the Underlying Index at each rebalancing.

**Liquidity:** The liquidity measurement used is a liquidity ratio, defined as dollar value traded over the previous 12-months divided by the float-adjusted market capitalization as of the Underlying Index rebalancing reference date. Stocks having a float-adjusted market capitalization above US\$500 million must have a liquidity ratio greater than 90% to be eligible for addition to the Underlying Index. Stocks having a float-adjusted market capitalization between US\$400 and US\$500 million must have a liquidity ratio greater than 150% to be eligible for addition to the Underlying Index. Existing index constituents must have a liquidity ratio greater than 50% to remain in the Underlying Index at the quarterly rebalancing. The length of time to evaluate liquidity is reduced to the available trading period for IPOs or spin-offs that do not have 12 months of trading history.

**Takeover Restrictions:** At the discretion of S&P, constituents with shareholder ownership restrictions defined in company bylaws may be deemed ineligible for inclusion in the Underlying Index. Ownership restrictions preventing entities from replicating the index weight of a company may be excluded from the eligible universe or removed from the Underlying Index.

**Turnover:** S&P believes turnover in index membership should be avoided when possible. At times, a company may appear to temporarily violate one or more of the addition criteria. However, the addition criteria are for addition to the Underlying Index, not for continued membership. As a result, an index constituent that appears to violate the criteria for addition to the Underlying Index will not be deleted unless ongoing conditions warrant a change in the composition of the Underlying Index.

## **The VanEck Vectors™ Gold Miners ETF**

In this section, Reference Stock Issuer refers to the VanEck Vectors™ Gold Miners ETF (the “GDX”), Reference Stock refers to the shares of the GDX, and the Underlying Index refers to the NYSE Arca Gold Miners Index.

The Reference Stock is an investment portfolio maintained, managed and advised by Van Eck. The VanEck Vectors™ ETF Trust is a registered open-end investment company that consists of numerous separate investment portfolios, including the Reference Stock.

The Reference Stock is an exchange traded fund that trades on NYSE Arca under the ticker symbol “GDX.”

The Reference Stock seeks to provide investment results that correspond generally to the price and yield performance, before fees and expenses, of the Underlying Index. The Underlying Index was developed by the NYSE Amex and is calculated, maintained and published by NYSE Arca. The Underlying Index is a modified market capitalization-weighted index comprised of publicly traded companies involved primarily in mining for gold or silver.

The Reference Stock utilizes a “passive” or “indexing” investment approach in attempting to track the performance of the Underlying Index. The Reference Stock will invest in all of the securities which comprise the Underlying Index. The Reference Stock will normally invest at least 95% of its total assets in common stocks that comprise the Underlying Index.

The notes are not sponsored, endorsed, sold or promoted by Van Eck. Van Eck makes no representations or warranties to the owners of the notes or any member of the public regarding the advisability of investing in the notes. Van Eck has no obligation or liability in connection with the operation, marketing, trading or sale of the notes.

### *The Underlying Index*

We have derived all information contained in this pricing supplement regarding the Underlying Index, including, without limitation, its make-up, method of calculation and changes in its components, from publicly available information and information supplied by NYSE Arca. Such information reflects the policies of, and is subject to change by, NYSE Arca. The Underlying Index was developed by the NYSE Amex (formerly the American Stock Exchange) and is calculated, maintained and published by the NYSE Arca. The NYSE Arca has no obligation to

continue to publish, and may discontinue the publication of, the Underlying Index.

The Underlying Index includes common stocks, ADRs and GDRs of selected companies that are involved primarily in mining for gold or silver and that are listed for trading and electronically quoted on a major stock market that is accessible by foreign investors. Generally, this will include exchanges in most developed markets and major emerging markets, and will include companies that are cross-listed, e.g., both U.S. and Canadian listings. NYSE Arca will use its discretion to avoid exchanges and markets that are considered “frontier” in nature or have major restrictions to foreign ownership. The Underlying Index includes companies that derive at least 50% of their revenues from gold mining and related activities (40% for companies that were included in the Underlying Index prior to September 23, 2013). Also, the Underlying Index maintains exposure to companies with a significant revenue exposure to silver mining in addition to gold mining, which will not exceed 20% of the Underlying Index weight at each rebalance.

Only companies with market capitalizations greater than \$750 million that have an average daily volume of at least 50,000 shares over the past three months and an average daily value traded of at least \$1 million over the past three months are eligible for inclusion in the Underlying Index. Starting in December 2013, for companies that were included in the Underlying Index prior to September 23, 2013, the market capitalization requirement at each rebalance became \$450 million, the average daily volume requirement will be at least 30,000 shares over the past three months and the average daily value traded requirement will be at least \$600,000 over the past three months. NYSE Arca has the discretion to not include all companies that meet the minimum criteria for inclusion. The Underlying Index’s benchmark value was 500.00 at the close of trading on December 20, 2002.

*Calculation of the Underlying Index.* The Underlying Index is calculated by NYSE Arca on a price return basis. The calculation is based on the current modified market capitalization divided by a divisor. The divisor was determined on the initial capitalization base of the Underlying Index and the base level and may be adjusted as a result of corporate actions and composition changes, as described below.

*Index Maintenance.* The Underlying Index is reviewed quarterly to ensure that at least 90% of the index weight is accounted for by index components that continue to meet the initial eligibility requirements. NYSE Arca may at any time and from time to time change the number of securities comprising the group by adding or deleting one or more securities, or replacing one or more securities contained in the group with one or more substitute securities of its choice, if in NYSE Arca's discretion such addition, deletion or substitution is necessary or appropriate to maintain the quality and/or character of the Underlying Index. Components will be removed from the Underlying Index during the quarterly review if (1) the market capitalization falls below \$450 million, or (2) the traded average daily shares for the previous three months is lower than 30,000 shares and the traded average daily value for the previous three months is less than \$600,000.

At the time of the quarterly rebalance, the component security quantities will be modified to conform to the following asset diversification requirements:

(1) the weight of any single component security may not account for more than 20% of the total value of the Underlying Index;

(2) the component securities are split into two subgroups—large and small, which are ranked by market capitalization weight in the Underlying Index. Large securities are defined as having a starting index weight greater than or equal to 5%. Small securities are defined as having a starting index weight below 5%; and

(3) the final aggregate weight of those component securities which individually represent more than 4.5% of the total value of the Underlying Index may not account for more than 45% of the total index value.

The weights of the components securities (taking into account expected component changes and share adjustments) are modified in accordance with the Underlying Index's diversification rules.

Changes to the index composition and/or the component security weights in the Underlying Index are determined and announced prior to taking effect, which typically occurs after the close of trading on the third Friday of each calendar quarter month in connection with the quarterly index rebalance. The share quantities of each component security in the index portfolio remains fixed between quarterly reviews except in the event of certain types of corporate actions such as stock splits, reverse stock splits, stock dividends, or similar events. The share quantities used in the index calculation are not typically adjusted for shares issued or repurchased between quarterly reviews. However, in the

event of a merger between two components, the share quantity of the surviving entity may be adjusted to account for any stock issued in the acquisition. NYSE Arca may substitute securities or change the number of securities included in the Underlying Index, based on changing conditions in the industry or in the event of certain types of corporate actions, including mergers, acquisitions, spin-offs, and reorganizations. In the event of component or share quantity changes to the index portfolio, the payment of dividends other than ordinary cash dividends, spin-offs, rights offerings, re-capitalization, or other corporate actions affecting a component security of the Underlying Index, the index divisor may be adjusted to ensure that there are no changes to the index level as a result of nonmarket forces.