

J.P. Morgan Securities LLC, JPMorgan Chase Bank, N.A., and Affiliates Disclosures

Important New Account Information

To help the government fight the funding of terrorism and money laundering activities, Federal law requires all financial institutions to obtain, verify, and record information that identifies each person who opens an account. What this means for you: When you open an account, we will ask for your name, address, date of birth (for individuals), and any other information that will allow us to identify you. We may also ask to see your driver's license or other identifying documents.

Securities Are Not FDIC Insured

J.P. Morgan Securities LLC ("JPMS" or the "Firm") is a subsidiary of JPMorgan Chase & Co. JPMS is a broker/dealer registered with the Securities and Exchange Commission ("SEC") and is a member of the New York Stock Exchange, Financial Industry Regulatory Authority ("FINRA"), and the Securities Investor Protection Corporation ("SIPC"). JPMS' obligations and securities sold, offered, or recommended by JPMS are not deposits and are not insured by the Federal Deposit Insurance Corporation ("FDIC"). JPMS is not a bank and is a separate legal entity from its bank or thrift affiliates. The obligations of JPMS are not obligations of its bank or thrift affiliates (unless explicitly stated otherwise), and these affiliates are not responsible for securities sold, offered, or recommended by JPMS. JPMS' bank or thrift affiliates may be lenders to issuers of securities that JPMS underwrites, in which case proceeds of offerings underwritten by JPMS may be used for repayment of such loans, and you should refer to the disclosure documents relating to particular securities for discussion of any such lending relationships. JPMorgan Chase Bank, N.A. (the "Bank") is a wholly-owned subsidiary of JPMorgan Chase & Co. The FDIC does not insure money invested in securities even if the securities are purchased at an insured bank. The obligations of the Bank are not obligations of its thrift affiliates (unless explicitly stated otherwise).

Nonpublic Customer Information

The Federal Reserve and the SEC require that we obtain your consent before we can share nonpublic customer information with or obtain such information from our bank or thrift affiliates, including their credit evaluation of you. Unless and until you notify us in writing to the contrary, you shall be deemed to have consented to the disclosure of nonpublic information between us and our bank or thrift affiliates, to the extent permitted by law.

Telephone Recording Disclosure

As part of our compliance with applicable laws and regulations, certain telephone lines in our sales and trading departments will be recorded. Please note that these recordings may be made with or without the use of a spoken warning, tone, or similar notification.

J.P. Morgan Securities LLC Disclosures

Compliance with Applicable Laws

As a condition to JPMS' acceptance of your instructions, you represent that you will, and undertake to, comply with and fulfill all of your obligations under applicable laws and regulations (including, in particular, those relating to short sales) and will not breach such applicable laws or regulations.

You also agree to provide us promptly with all information necessary for us to perform our obligations under applicable laws and regulations.

Specific additional provisions that apply when trading on certain markets will be included on <http://www.jpmorgan.com/pages/disclosures> from time to time.

FINRA Rule 2266 SIPC Information

JPMS is a member of SIPC. Clients may obtain information about SIPC, including the SIPC brochure, by contacting SIPC at www.sipc.org or (202) 371-8300.

FINRA Rule 2267 Investor Education and Protection

BrokerCheck provides investors with the ability to research the professional backgrounds, business practices, and conduct of FINRA-registered brokerage firms and brokers. In connection with this program, investors may call the BrokerCheck Hotline at (800) 289-9999 and visit the FINRA website at <http://brokercheck.finra.org>. An investor brochure that includes information describing the FINRA BrokerCheck Program is available from either of these sources.

Payment for Order Flow and Ownership Interests

JPMS may pay from time to time for certain order flow in the form of direct payment, discounts, rebates, reductions of fees, or credits. JPMS does not receive payment for order flow from market makers to which customer orders in equity securities are routed. JPMS receives rebates from and pays fees to certain registered securities exchanges for providing or taking liquidity on those exchanges, according to those exchanges' published fee schedules approved

by the SEC. Alternative trading systems also charge fees and, in some cases, pay rebates for the provision or removal of liquidity. In addition, JPMS receives marketing fees from options exchanges under marketing fee programs sponsored by certain exchanges. Under some circumstances, the amount received by JPMS from a trading center over a period of time may exceed the amount that JPMS is charged by such trading center. Such practices are one of many factors that may impact routing decisions and do not alter JPMS' policy to route customer orders in securities to the trading centers where it believes customers will receive the best execution, taking into account, among other factors, price, transaction cost, volatility, reliability, market depth, and speed.

Affiliates of JPMS have ownership interests in certain trading centers. Accordingly, JPMS stands to share in any profits that such trading centers derive from the execution of JPMS customer orders on those trading centers. Additional information on the material aspects of JPMS' relationships with the primary trading centers to which JPMS routes, including descriptions of arrangements for payment for order flow and profit-sharing relationships, is available in JPMS' SEC Rule 606 reports at <https://www.jpmorgan.com/disclosures/sec-order-execution>.

Authorized Traders

JPMS requests that you do not send us a list of personnel who are authorized to place orders. JPMS defers to your internal controls to ensure that personnel who contact us to place orders are properly authorized to enter into the transactions they request.

Transfer Restrictions and Sales Pursuant to a Registration Statement

As a condition to JPMS' acceptance of any order from you, you represent that you will, prior to entering the order, (a) advise us (i) of any legal restrictions on the transfer of any securities you sell (including under Rule 144 or 145(d) under the Securities Act of 1933) and (ii) whether any securities you sell are being sold pursuant to a registration statement and (b) provide any necessary documents to us (including prospectuses or opinions) to satisfy legal transfer requirements. You are responsible for any delays, expenses, and losses associated with compliance or failure to comply with any restrictions on the transfer of securities.

Handling of Listed Option Orders

Solicited Order Mechanism

When handling an order of 500 contracts or more on your behalf, JPMS may solicit other parties to execute against your order and may thereafter execute your

order using the International Securities Exchange's ("ISE") Solicited Order Mechanism. This functionality provides a single-price execution only so that your entire order may receive a better price after being exposed to the ISE's participants but will not receive partial price improvement. For further details on the operation of this Mechanism, please refer to NASDAQ ISE Rule 716(d), available at <http://ise.cchwallstreet.com/tools/PlatformViewer.asp?selectednode=chp%5F1%5F1%5F6&manual=%2Fcontents%2Fisc%2Fisc%2Drules%2F>.

Tied Hedge Orders

When handling an option order of 500 contracts or more on your behalf, JPMS may buy or sell a hedging stock, security futures, or futures position following receipt of the option order but prior to announcing the option order to the trading crowd. The option order may thereafter be executed using the tied hedge procedures of the exchange on which the order is executed. These procedures permit the option order and hedging position to be presented for execution as a net-priced package subject to certain requirements. For further details on the operation of the procedures, please refer to the exchange rules for tied hedge orders, including CBOE Rule 6.74.10, available at <https://markets.cboe.com/us/options/regulation/>.

Professional Customer Designation for Option Orders

In order to properly represent orders entered on exchanges, JPMS is required to indicate whether public customer orders are "Professional Orders." To comply with this requirement, JPMS is required to review its customers' activity on at least a quarterly basis to determine whether orders that are not for the account of a broker or dealer should be represented as Professional Orders. Under circumstances where JPMS identifies a customer who has placed an average of more than 390 orders in listed options per day during any month of a calendar quarter, JPMS will represent that customer's orders as Professional Orders within five (5) days of the next calendar quarter. If, during a quarter, an exchange identifies a customer for which orders are not being represented as Professional Orders but that has averaged more than 390 orders per day during a month, the exchange will notify JPMS, and JPMS will be required to change the manner in which it is representing the customer's orders within five (5) days.

Additionally, broker-dealers that route listed option orders to JPMS have an obligation to review such order flow and appropriately designate customer orders as Professional Orders.

Extended Trading Hours

Under CBOE Rule 6.1A(j), Nasdaq Rule 4631 and FINRA Rule 2265, JPMS may not accept an order

from a customer for execution during extended trading hours (as defined therein) without disclosing the potential risks involved in such extended-hours trading, such as:

1. Risk of Lower Liquidity. Liquidity refers to the ability of market participants to buy and sell securities. Generally, the more orders or quotes that are available in a market, the greater the liquidity. Liquidity is important because with greater liquidity it is easier for investors to buy or sell securities, and as a result, investors are more likely to pay or receive a competitive price for securities purchased or sold. There may be lower liquidity in extended trading hours as compared to regular trading hours, including fewer market-makers quoting during extended trading hours. As a result, your order may only be partially executed, or not at all.

2. Risk of Higher Volatility. Volatility refers to the changes in price that securities undergo when trading. Generally, the higher the volatility of a security, the greater its price swings. There may be greater volatility in extended trading hours than in regular trading hours. As a result, your order may only be partially executed, or not at all, or you may receive an inferior price in extended trading hours as compared to regular trading hours.

3. Risk of Changing Prices. The prices of securities traded in extended trading hours may not reflect the prices either at the end of regular trading hours or upon the opening of regular trading hours the next business day. As a result, you may receive an inferior price in extended trading hours as compared to regular trading hours.

4. Risk of News Announcements. Normally, issuers make news announcements that may affect the price of their securities after regular trading hours. Similarly, important financial information is frequently announced outside of regular trading hours. These announcements may occur during extended trading hours, and if combined with lower liquidity and higher volatility, may cause an exaggerated and unsustainable effect on the price of a security.

5. Risk of Wider Spreads. The spread refers to the difference between the price for which you can buy a security and the price for which you can sell it. Lower liquidity and higher volatility in extended trading hours may result in wider than normal spreads for a particular security.

6. Risk of Lack of Calculation or Dissemination of Underlying Index Value or Intraday Indicative Value ("IIV"). Where an updated underlying index or portfolio value, or IIV, is not calculated or publicly disseminated during extended trading hours, an investor who is unable to calculate implied values for certain derivative securities products may be at a disadvantage to market professionals during extended trading hours.

7. Risk of Lack of Regular Trading in Securities Underlying Indexes. Securities underlying the indexes or portfolios will not be regularly trading as they are during regular trading hours, or may not be trading at all. This may cause prices during extended trading hours to not reflect the prices of those securities when they open for trading.

8. Risk of Unlinked Markets. Depending on the extended hours trading system or the time of day, the prices displayed on a particular extended hours system may not reflect the prices in other concurrently operating extended hours trading systems dealing in the same securities. Accordingly, you may receive an inferior price in one extended hours trading system than you would in another extended hours trading system.

Order Handling During Volatile Market Conditions

You should keep the following considerations in mind when routing an order in a security to JPMS during periods of high volatility in the security's prices or trading volumes:

1. Delays: High volumes of trading during such periods, whether at market opening or intra-day, may cause delays in execution and executions at prices and sizes significantly away from the market price and size quoted or displayed at the time the order was entered. Quoted or displayed share sizes may also be smaller during such periods, making it harder to execute larger share orders.

2. Market Order Prices and Limit Order Liquidity: While you may receive a prompt execution of a market order during such periods, the execution may be at a price significantly different from the current quoted price for that security. While you receive price protection for a limit order because it is executed only at the specified limit price or better, there is the possibility that the order will not be executed during such periods.

3. Limited Access: You may suffer market losses during such periods if systems problems result in an inability to place buy or sell orders. JPMS will make reasonable efforts to communicate with clients as appropriate in the event of such system problems.

4. Trading Halts: In the event the primary listing exchange for the security or FINRA declares a trading halt in the security or across all NMS stocks, JPMS may be prohibited from trading the security during such periods.

5. Limit Up/Limit Down Price Bands: During such periods, JPMS may be prohibited from trading the security at prices below or above the security's Lower or Upper Price Bands, respectively, disseminated pursuant to the Regulation NMS Plan to Address Extraordinary Market Volatility.

Electronic Trading

JPMS offers a variety of electronic order execution services, including algorithmic trading strategies (e.g., volume-weighted average price (“VWAP”) trading strategies), smart order routing technology (“SOR” or, collectively with algorithmic trading strategies, “Algorithms/SOR”), and alternative trading systems (JPM-X and JPB-X). One or more of these electronic order execution services may be used in the execution of your order even where you utilize the expertise of a JPMS professional.

In keeping with its regulatory obligations to maintain reasonable risk management controls, JPMS has no obligation to accept, execute, or cancel all or any part of an order that you seek to execute or cancel through JPMS. JPMS, in its discretion, may reject all or any part of an order, whether routed to a trading center for execution via JPMS-provided or sponsored access or routed to a JPMS system, desk, or trader for handling.

Market day orders received by the SOR will first sweep the lit exchanges up to a price level that is the more aggressive of either 1% or 10 cents away from the far touch price and capped within the limit up – limit down bands, and then will post the residual as a limit order to an exchange. The limit price applied will be in accordance with the numerical guidelines for clearly erroneous executions. Market Day orders received in the pre-open will be posted to the primary exchange as market orders in order to participate in the opening auction. Market Day orders designated for trading in the post-close session will be rejected by the SOR. If you have any questions concerning the handling of your market day orders, or to discuss additional scenarios, please contact your JPMS sales representative.

When an algorithmic trading strategy or SOR is used in the handling of your order, the algorithmic trading strategy or SOR, depending on your particular trading execution objective, generally breaks your order into smaller orders over the specified time period and routes these smaller orders to one or more national securities exchange, alternative trading system, single dealer platform, internal engine for matching against principal interest, and/or other venue, according to the strategy’s or technology’s imbedded routing logic (algorithmic or SOR-generated orders are referred to herein, collectively as “Algorithms/SOR Orders”). With the exception of certain types of order flow and/or order instructions, Algorithms/SOR Orders will be routed to an internal engine for matching against principal interest, JPM-X, and/or JPB-X for matching opportunities before being routed to outside venues for execution. JPMS may use an external broker dealer (which may exercise discretion) or a

third-party algorithm or order router (either of which may exercise discretion and/or may be white-labelled) to access execution venues. JPMS may route orders in non-Regulation NMS securities (OTC securities) to external broker-dealers (which may exercise discretion) for execution. JPMS may use its affiliate J.P. Morgan Securities Canada Inc. or another Canadian broker-dealer (either of which may exercise discretion), or use a third-party algorithm or order router (either of which may exercise discretion and/or may be white-labelled), to access execution venues in Canada on behalf of non-Canadian clients trading Canadian securities.

In addition, some users of JPMS’ trading services also have the capability to send orders and conditional orders (“Firm/Conditional Orders”) directly to JPM-X or JPB-X or to direct the Algorithms/SOR to route conditional orders to JPB-X. Customer orders routed to an internal engine for matching against principal interest, JPM-X, or JPB-X are subject to JPMS’ policies and procedures regarding best execution (including the consideration given to price, transaction cost, and other factors associated with execution quality) in the same manner and to the same extent as other orders executed by JPMS on other execution venues.

JPM-X is designed to execute orders at the national best bid or offer or better based on price/tier/time priority. This means that of two equally priced orders, the one that is in the higher priority tier will take priority regardless of the time it was submitted to JPM-X. Firm/Conditional Orders in JPM-X are assigned to order flow types, which are grouped into tiers. You may participate in more than one tier, depending upon the order flow types to which your Firm/Conditional Orders are assigned by JPMS. The JPM-X order book is tiered based on order flow type in the following priority:

- (1) Tier 1 – Institutional investor client flow and JPMS affiliates’ flow accessing JPM-X via the Algorithms/SOR (Order Flow Type I-1);
- (2) Tier 2 – Institutional investor client flow with direct access to JPM-X (Order Flow Type I-2);
- (3) Tier 3 – U.S.-registered broker-dealer client flow (both agency and principal) accessing JPM-X via the Algorithms/SOR (Order Flow Type I-3);
- (4) Tier 4 – Internal (JPMS) principal trading desk flow accessing JPM-X via the Algorithms/SOR (Order Flow Type P-1) and internal (JPMS) electronic liquidity provider flow with direct access to JPM-X (Order Flow Type P-2); and
- (5) Tier 5 – Flow of external broker-dealers categorized as electronic liquidity providers with direct access to JPM-X (Order Flow Type I-4 / ELP) and flow of external broker-dealers not

categorized as electronic liquidity providers (both agency and principal) with direct access to JPM-X (Order Flow Type I-5).

JPB-X is designed to execute orders at a VWAP (for orders designated as VWAP Price Match orders) or the close price (for orders designated as Close Price Match orders). Firm/Conditional Orders in JPB-X are assigned to order flow types, which are grouped into tiers. The JPB-X order book is tiered based on order flow type in the following priority (the tier and order flow designations correspond to the designations used for JPM-X to avoid confusion on the part of JPMS clients that use both JPM-X and JPB-X):

- (1) Tier 1 – Institutional investor client flow and JPMS affiliates’ flow accessing JPB-X via the Algorithms/SOR (Order Flow Type I-1);
- (2) Tier 2 – Institutional investor client flow with direct access to JPB-X (Order Flow Type I-2);
- (3) Tier 3 – U.S.-registered broker-dealer client flow (both agency and principal) accessing JPB-X via the Algorithms/SOR (Order Flow Type I-3);
- (4) Tier 4 – Internal (JPMS) principal trading desk flow accessing JPB-X via the Algorithms/SOR (Order Flow Type P-1); and
- (5) Tier 5 – N/A for JPB-X.

There is no Order Flow Type P-2, I-4 / ELP, or I-5 in JPB-X.

JPMS reserves the right to review and add, remove, or revise an order flow type or tier assignment in JPM-X or JPB-X at any time.

You may opt out of executing in JPM-X and/or JPB-X altogether or executing against one or more of the JPM-X or JPB-X order flow types (i.e., sub-tiers) or tiers to meet your specific trading needs. You can identify order flow type or tier restrictions

(i) on an order-by-order basis in the Firm/Conditional Order instructions submitted to JPMS or (ii) by contacting your JPMS sales representative with respect to a subset of Firm/Conditional Orders or all order flow. In addition, JPMS may further limit the order flow types or tiers with which your Firm/Conditional Orders interact based on your trading objectives, consistent with your order instructions; accordingly, you may be prevented from interacting with an order flow type or tier with which you have not opted-out of interacting.

You may opt out of having your orders routed to any venue whose quotes are not protected under Regulation NMS (which may include, e.g., an alternative trading system (such as JPM-X or JPB-X, as discussed above), an electronic liquidity provider from which JPMS receives indications of interest, or another broker-dealer) by instructing your JPMS sales representative. You may opt into interacting

with an internal engine for matching against principal interest for low touch flow by contacting your JPMS sales representative and may opt out of interacting with an internal engine for matching against principal interest for high touch flow by contacting your JPMS representative. An instruction to opt out of interacting with one or more order flow types or tiers in JPM-X or JPB-X will not cause JPMS to restrict the routing of your orders to any venue by SOR. JPMS offers an alert service, Block Watch, that can be used to notify you, your electronic coverage team, and/or your high-touch coverage team when one of your live, electronic low-touch orders matches contra-liquidity represented by a “natural” indication of interest (IOI) published by the JPMS high-touch desk. JPMS will designate an IOI as “natural” to represent interest on an agency basis (i.e., customer order in hand) or interest on a principal basis that is being or was established in connection with the facilitation of a customer order (e.g., unwinding or hedging client generated activity or, to the extent permitted and in compliance with any conditions imposed by service providers, building inventory to meet expected customer demand), including the facilitation of clients’ listed option orders and certain over-the-counter equity derivatives, or the execution of a client’s order on a riskless principal basis.

JPMS is not obligated to act upon alerts triggered by such services. You may opt into Block Watch, configure parameters used to trigger alerts, and identify alert recipients by contacting your JPMS sales representative.

If you wish to opt out or in, in whole or in part, or have any questions concerning the manner in which your orders are handled by JPMS, please contact your JPMS sales representative.

Conditional Orders

The Algorithms/SOR, at its own direction or the direction of JPMS clients, can send messages indicating trading interest (“Algorithms/SOR Conditional Orders”) to seek liquidity in more than one destination (including JPM-X and JPB-X) simultaneously, without the risk of overfill. In addition, certain JPMS clients may route conditional orders directly to JPM-X or JPB-X (“Direct Conditional Orders”) to find potential trading interest.

When the Algorithms/SOR or a JPMS client (“User 1”) submits a conditional order to JPM-X and JPM-X detects a match between the conditional order and contra interest (either a firm order or another conditional order) submitted by the Algorithms/SOR or a JPMS client (“User 2”), JPM-X will send a firm-up invitation to User 1 (and, if the contra interest is another conditional order, User 2). User 1 (and, if the contra interest is another conditional order, User 2) will have two (2) seconds to

respond to the firm-up invitation with a firm order. Conditional orders are assigned to the same JPM-X tier as any firm order of the same order flow type, and all crossing preferences determined by a user apply to the user’s firm orders and conditional orders. Within the JPM-X book, firm orders have priority over conditional orders at a given price level, and immediate-or-cancel (“IOC”) orders can never be executed against a conditional order, even if an IOC order meets the parameters of a conditional order. JPMS logs details regarding conditional orders (including information regarding firm-up invitations sent, firm orders received, and execution quantities) within JPM-X system files that can be reviewed by JPMS to assess whether clients have engaged in systematic behavior resulting in a materially negative impact to the operation of JPM-X or to other users, as evidenced by, e.g., a low firm-up rate in response to firm-up invitations, and consequently should be permitted to continue to submit conditional orders. By default, (i) the Algorithms/SOR can submit conditional orders to JPM-X and (ii) firm orders resting in the JPM-X book are eligible to be matched with conditional orders. Clients can opt out of (i) the submission of conditional orders on their behalf and/or (ii) having their firm orders resting in the JPM-X book be matched with conditional orders. Clients can opt out in whole or in part (with respect to a subset of Firm/Conditional Orders or all Firm/Conditional Orders) by contacting their JPMS sales representatives.

Algorithms/SOR Conditional Orders and Direct Conditional Orders can be routed to JPB-X. Algorithms/SOR Orders and firm orders from JPMS clients with direct access to JPB-X can only be routed to JPB-X as the result of a match of conditional orders, as a result of which JPB-X will send a firm-up invitation to the Algorithms/SOR or JPMS client with direct access to JPB-X. The Algorithms/SOR or JPMS client with direct access to JPB-X will have two (2) seconds to respond to the firm-up invitation with a firm order. JPB-X fills firm orders, including Algorithms/SOR Orders, that are crossed by JPB-X at either a VWAP calculated by JPB-X after a five-minute match period (for VWAP Price Match orders) or the official closing price as determined by the closing auction at the security’s primary exchange (for Close Price Match orders). JPMS reserves the right to limit or prohibit a client’s use of conditional orders at JPMS’ discretion if JPMS detects systematic behavior resulting in a materially negative impact to the operation of JPB-X or to other users as evidenced by, e.g., a high cancellation rate or, with respect to orders designated for VWAP Price Match, high VWAP slippage of the client’s algorithmic orders. By default, the Algorithms/SOR can submit conditional orders to JPB-X. Clients can opt out of the submission of conditional orders on their behalf. Clients can opt out in whole or in part (with

respect to a subset of conditional orders or all conditional orders) by contacting their JPMS sales representatives.

Conditional orders and firm-up invitations are handled on an automated basis and are not disseminated to any other users, third-parties, or personnel outside of Electronic Client Solutions, although compliance, regulatory management, middle office, and technology personnel may access this information for their assigned compliance or operational purposes.

Conditional orders submitted to venues other than JPM-X and JPB-X are executed in accordance with the rules of such venues. If you have any questions concerning conditional orders, please contact your JPMS sales representative.

For more information regarding JPM-X or JPB-X, please refer to their respective Form ATS-N or FAQs, available at <http://www.jpmorgan.com/ecs>.

Guaranteed Price Orders

JPMS is dedicated to seeking best execution of your orders and providing transparency when working your orders or hedging against market risk from facilitating them. We may receive orders from you for single stocks or a basket of securities whereby we agree that JPMS will execute in a principal capacity all or a portion of the order at a guaranteed price. That price may be based on an independent benchmark such as VWAP or the official closing price for the security/ies comprising the basket. In addition, from time to time you may ask JPMS to bid on a program order with the understanding that if our bid is accepted, we will execute the program as principal on the agreed-upon terms.

Prior to the execution of a guaranteed price order or in contemplation of winning a bid, JPMS may establish a hedge through single or multiple trades that serve to offset our market risk associated with facilitating these transactions. This hedge will usually involve principal trades (possibly throughout the day) in the same security or in a related derivative instrument on the same side of the market as your order.

JPMS makes every reasonable effort to minimize the market impact of its hedging. Nevertheless, such activity may ultimately affect the agreed guaranteed benchmark price. Similarly, where JPMS does not win a bid, but engages in principal hedging activity before the bid is awarded, such activity could affect the execution price of your order with the broker-dealer that is awarded the bid. Please contact your JPMS sales representative if you would like to discuss JPMS’ hedging strategies.

JPMS makes every reasonable effort to facilitate your guaranteed price orders but may not execute such orders fully or at all under certain

circumstances (e.g., a primary exchange’s failure to publish a close price, the inclusion of a security on JPMS’ restricted list, a trading or regulatory halt, or another regulatory restriction such as a price test under SEC Rule 201). In addition, orders directed to the Guaranteed Market-on-Close Facility may be routed by JPMS on an agency basis to an external venue, which may not execute the order fully or at all. Please contact your JPMS sales representative if you would like to discuss JPMS’ handling of guaranteed price orders.

15c3-5 Market Access

SEC Rule 15c3-5 requires broker-dealers that access or provide access to exchanges or alternative trading systems to establish, document, and maintain a system of risk management controls that are reasonably designed to manage the financial, regulatory, and other risks in connection with market access. JPMS has developed controls that may pause or reject select orders that exceed certain pre-determined risk parameters. For certain paused orders, JPMS will determine if it is appropriate to send the orders to the market based upon a variety of factors, including, but not limited to, order size, price, and volume considerations.

FINRA Rule 5270

In the normal course, JPMS accepts and facilitates customer block orders, including block orders in single stocks, baskets of securities, and derivatives. JPMS may trade principally at prices that would satisfy a customer block order where such transactions are unrelated (e.g., as a result of information barriers) to the customer block order. Under certain circumstances, JPMS may also engage in bona fide hedging or positioning activity to reduce the market risk associated with the facilitation of a customer block order. Such trading activity may impact the execution price of the customer block order. JPMS, however, will use reasonable efforts to avoid or minimize any such impact and to obtain the best possible execution for the customer block order.

If you have any questions about this matter, or wish to discuss it further, please contact your JPMS sales representative.

“Not Held” Institutional Orders

If a client designates an order for an institutional account (an “institutional order”) as “not held” or does not designate the order as “held” or “not held,” JPMS will handle the order on a “not held” basis. If a client designates an institutional order as “held,” JPMS may reject the order.

We believe that handling an institutional order on a “not held” basis allows us to “work” clients’ orders using our judgment and discretion as to the price at which, the time when, or the manner in which such orders will be represented on, exposed to, or executed by a venue to achieve a high quality execution. For “not-held” IOC orders, the SOR may use price and/or time discretion when routing the order. For “held” IOC orders in a security routed by the SOR, the SOR will route to the primary market for that security for immediate execution.

We appreciate the ongoing dialogue with our clients concerning the handling of their orders. If you have any questions, or do not wish for your orders to be handled in the above-referenced fashion, please contact your JPMS sales representative.

SEC Rule 605 and 606 Reporting

For purposes of JPMS’ reporting under SEC Rule 605, “not held”-designated IOC orders may be deemed to be covered orders. For purposes of JPMS’ reporting under amended SEC Rule 606, effective January 18, 2019, “not held”-designated IOC orders would be reflected in JPMS’ reports for “not held” orders under Rule 606(b)(3) rather than its reports for “held” orders under Rule 606(a).

Any customer of JPMS may request, free of charge, information on any of the customer’s orders routed for execution by JPMS in the six months prior to the request. Specifically, any customer may request the identity of the venue to which any of the customer’s orders was routed for execution, whether the order was a directed or non-directed order, and the time of any resulting transaction. In addition, hard copies of JPMS’ quarterly order routing reports prepared pursuant to SEC Rule 606 are available free of charge upon request.

Net Trades

JPMS’ policy on net trades defines a “net trade” as a principal transaction in which JPMS, as a market maker or block positioner, after having received an order from a customer to buy (sell) an equity security, purchases (sells) the equity security at one price from (to) another broker-dealer or another customer and then sells to (buys from) the original customer at a different price. On occasion, JPMS, as a registered market maker or block positioner, may execute your orders as principal on a net basis, as described above. In such cases, the trade price reflected on the confirmation will be the net price of the trade.

In addition, JPMS may route your orders as agent to another broker-dealer that may execute your orders as principal on a net basis, as described above. In such cases, the trade price reflected on

JPMS’ confirmation to you will be the gross price of the trade (exclusive of any JPMS commissions, mark-ups, and mark-downs).

If you have no objection to JPMS executing orders on a net basis, as described above, you need not respond to this disclosure. If you prefer that JPMS not execute your orders on a net basis, please contact your JPMS sales representative.

Indications of Interest and Advertising

JPMS uses certain service providers to advertise executions and indications of interest (“IOIs”). Indications of interest are expressions of trading interest that contain one or more of the following elements: security name, side of the market, size, and/or price. When publishing IOIs, JPMS will adhere to the guidance issued by regulators and service providers, including the manner in which JPMS will designate an IOI as a “natural” IOI. JPMS will designate an IOI as “natural” to represent interest on an agency basis (i.e., customer order in hand) or interest on a principal basis that is being or was established in connection with the facilitation of a customer order (e.g., unwinding or hedging client generated activity or, to the extent permitted and in compliance with any conditions imposed by service providers, building inventory to meet expected customer demand), including the facilitation of clients’ listed option orders and certain over-the-counter equity derivatives, or the execution of a client’s order on a riskless principal basis. You may opt out of JPMS advertising your executions and/or publishing IOIs based on your trading interest, to the extent it is represented by JPMS on an agency basis, by contacting your JPMS sales representative.

Regulation NMS Order Protection Rule

Rule 611 of Regulation NMS (“Reg NMS”) (commonly known as the Order Protection Rule) establishes intermarket price protection against trade-throughs for all NMS stocks, as defined by Reg NMS, by requiring broker-dealers to attempt to access any better priced protected quotes on automated trading centers when executing at prices that would trade through those protected quotes. (An automated trading center is one that can, among other things, immediately and automatically respond to an immediate-or-cancel order and update its quotes. A protected quote is one that is displayed by an automated trading center, is disseminated pursuant to an effective national market system plan, and is the best bid or best offer on that automated trading center.)

Rule 611 contains a number of exceptions, which are designed to make the rule’s intermarket price protection as efficient as possible. One of those exceptions is referred to as the Intermarket Sweep Order (“ISO”) exception. An ISO is a limit order for an NMS stock that is identified with an ISO designation when routed to an automated trading center and, simultaneously with the routing of that

limit order, is accompanied by one or more additional limit orders (also marked as ISOs) that will execute against the protected quotations on those automated trading centers. The ISO designation alerts the receiving automated trading center that the order sender itself is executing against any better priced protected quotations at other automated trading centers.

A broker-dealer is obligated to send ISOs when the price of a transaction between the broker-dealer and a customer, or a transaction between two or more customers, is outside of the current national best bid and offer (“NBBO”) for the NMS stock. If, after sending ISOs to other automated trading centers and receiving fills / partial fills back (or receiving no response after a reasonable period of time), there are still shares of the order left to be executed, the broker-dealer can then execute the remainder at the original order price.

A trade for which the ISO exception is being used can be executed in two different ways:

- (i) at the same time ISOs are routed (the “print-and-sweep” approach); or
- (ii) After ISOs are routed, responses are received, and the original size of the order is reduced to reflect any fills that result from the ISO routes (the “sweep-and-print” approach).

Under the print-and-sweep approach, the broker-dealer would complete the customer’s order at the time the ISOs are routed and would take any subsequent ISO fills into its inventory. Under the sweep-and-print approach, the customer would receive the benefit of any better prices obtained by the ISOs.

In general, JPMS will adopt a sweep-and-print approach (as described above) when executing your orders, which means that any better-priced fills will be allocated to your order. JPMS’ equities trading desks, however, may use a print-and-sweep approach for its order flow. If you have no objection to JPMS’ decision to use a print-and-sweep approach for ISOs handled by JPMS’ equities trading desks, you need not respond to this disclosure. If you have any questions regarding this approach, please contact your JPMS sales representative.

In the event that JPMS does not receive a response to an ISO within a reasonable period of time, JPMS can consider the ISO to be lost, and any subsequent fills resulting from such lost ISOs will generally be allocated to JPMS’ account and taken into inventory.

FINRA Rule 5320 and Principal Trading

Rule 5320 generally prohibits a member firm that accepts and holds a customer order from

trading for its own account at terms that would satisfy the customer order, unless the member immediately thereafter executes the customer order at the same or better price than it traded for its own account. Described below are certain exceptions to this rule and an explanation of how JPMS will handle those exceptions. Please note that consistent with existing regulatory guidance, “not held” orders are outside the scope of the rule.

Large Orders and Institutional Account Exceptions

Large orders (orders of 10,000 or more shares with a total value of \$100,000 or more), and/or orders from institutional accounts (including, accounts with total assets of at least \$50 million) are exempted from the requirements of Rule 5320. JPMS will generally work such orders in accordance with customer instructions. While working such orders, JPMS may trade for its own account at prices that would satisfy the customer order.

“No-Knowledge” Exception

JPMS maintains Rule 5320 internal controls known as information barriers between its trading units. The information barriers are designed to prevent one trading unit from having knowledge of customer orders held by a different trading unit. With these barriers in place, one trading unit may hold a customer order while another trading unit, including the market making trading unit, executes an order for a JPMS account that would satisfy the customer order.

If you object to the manner in which we are handling your orders, as described above, please contact your JPMS sales representative.

Principal Trading

JPMS may execute certain of your orders on a principal basis unless you opt out of JPMS doing so. When deciding whether to facilitate your order (partially or fully) on a principal basis, the price at which to do so, and how and when to hedge or liquidate the resulting facilitation position, JPMS may consider, among other factors, the percentage of your order that already has been executed and JPMS’ related historical performance when hedging or liquidating facilitation positions associated with your transactions. If JPMS routes your order away and then executes the last portion of it on a principal basis, JPMS may benefit from any resulting market impact and subsequent price reversion.

JPMS also may handle certain of your orders on a riskless principal basis. Restrictions or preferences you may have requested with respect to agency conditional orders or orders may not necessarily apply to conditional orders or orders handled by JPMS on a riskless principal basis. Such

conditional orders or orders may be assigned to an order flow type for internal (JPMS) flow rather than client flow in JPM-X and/or JPB-X. If you have any questions about the manner in which your conditional orders or orders are handled by JPMS, please contact your JPMS sales representative.

Conflicts of Interest Disclosure for ETF Transactions

JPMS and its affiliates (collectively, “J.P. Morgan”) comprise a full-service securities firm and a commercial bank engaged in securities trading and brokerage activities, as well as providing investment banking, asset management, financing, financial advisory services, and other commercial and investment banking products and services to a wide range of corporations, institutions, funds, and individuals. J.P. Morgan acts as an investment banker, research provider, investment manager, financier, advisor, market maker, trader, prime broker, transfer agent, lender, custodian, agent, and principal and has direct or indirect interests in the global debt, equity, currency, commodity, and other markets.

As a result, J.P. Morgan may have potential conflicts of interest relating to the exchange-traded fund (“ETF”) that you may purchase from or sell to us. In particular, J.P. Morgan may:

- Act as an authorized participant in the purchase or sale of shares from an ETF. J.P. Morgan may, from time to time, receive a fee in connection with its role as an authorized participant. J.P. Morgan will have information about pending creations or redemptions of large blocks of ETF shares. J.P. Morgan has the right to terminate its authorized participant status and/or cease creating or redeeming ETF shares without notice.
- Act as a market maker or block positioner in the ETF shares. In this regard, J.P. Morgan will often buy or sell ETF shares for other customers or for its own account while you are selling or buying ETF shares. J.P. Morgan will receive customary brokerage commissions, mark-ups/mark-downs, or other charges and fees from these transactions and, when acting as principal, may also benefit from the dealer’s spread.
- Act as a market maker or block positioner in securities or other instruments that are held by the ETF and/or are part of the index whose performance the ETF seeks to track. In this regard, J.P. Morgan will often buy or sell securities, derivatives, or other instruments for other customers or for its own account without regard to whether the ETF is buying, selling, or holding those securities, derivatives, or instruments.
- Act as principal for its own account or as agent by buying or selling securities and other instruments to or from the ETF. J.P. Morgan will often act as counterparty to the ETF in connection with securities and derivatives transactions (including, but not limited to, swaps, forwards, and options of all types). J.P. Morgan will receive customary brokerage commissions, mark-

ups/mark-downs, or other charges and fees from these transactions and, when acting as principal, may also benefit from the dealer's spread.

- Have a significant ownership interest in the ETF shares or related derivatives (including long and short positions) and effect transactions in derivatives related to the ETF, including taking large short and other positions to hedge positions in the ETF shares.
- Be a lender of ETF shares to third parties for a lending fee. In this regard, if you have a margin account, you should note that J.P. Morgan may lend your ETF shares to others pursuant to your margin account agreement.
- Contribute capital towards the formation of an ETF (seeding) and obtain a significant ownership interest in the ETF before the ETF shares are offered to other investors.
- Have multiple advisory, transactional, financial, and other interests in the companies whose securities or other instruments may be purchased or sold by the ETF. J.P. Morgan will, from time to time, engage in business with these companies, including extending loans to, making equity investments in, or providing advisory services to the companies, including merger and acquisition advisory services. In the course of those activities, certain J.P. Morgan personnel will acquire nonpublic information about the companies. Such information could affect the prices at which the ETF shares trade. J.P. Morgan will maintain the confidentiality of such information and not disclose it to the ETF, ETF shareholders, or other unauthorized personnel.
- Publish research reports or otherwise express long-term or short-term views about the ETF, the index whose performance the ETF seeks to track, and/or the securities and other instruments that comprise the index.

J.P. Morgan's activities described herein could negatively affect the performance of the underlying index and/or the price at which you will be able to transact in your ETF shares in the secondary market.

J.P. Morgan's trading activities will, at times, be contrary to the trading activity of the ETF and/or ETF shareholders. J.P. Morgan's economic interests (such as long or short positions in the ETF) will, at times, be inconsistent with those of the ETF and/or ETF shareholders. It is also possible that J.P. Morgan activities could result in substantial returns for J.P. Morgan while the value of the ETF shares declines.

Information and Privacy Related to Access to Research through JPMS and Third Parties

Electronic access to JPMS research through J.P. Morgan Markets or other JPMS distribution

outlets is subject to the information and privacy terms of the agreements governing these applications, and by accessing JPMS research through third parties such as Bloomberg, FactSet, Thomson Reuters, S&P Capital IQ, etc., you consent to the communication and disclosure on a delayed basis to JPMS (and any of its officers, agents, or employees) of all information and data in respect of your use of JPMS research on these services.

Alpha Capture Platforms

JPMS sales representatives communicate trade ideas to in-house and third-party alpha capture platforms ("ACPs").

Under certain circumstances, JPMS sales representatives might deem it appropriate to share trade ideas, in whole or in part, with you and other users on one or more ACPs. As a result, trade ideas provided to you through those platforms may also be shared with other customers that participate in those platforms. In addition, as a registered broker-dealer, JPMS reserves the right to review any trade idea submission and reject, close, or modify any such submission.

J.P. Morgan may today, or in the future, do business or enter into transactions on a principal basis for any issuer(s) or financial instrument(s) to which such trade idea(s) directly or indirectly relate, including in response to the trade idea(s). J.P. Morgan employees or agents may personally hold investments or enter transactions for any issuer(s) or financial instrument(s) to which such trade idea(s) directly or indirectly relate, including in response to the trade idea(s). The trade idea(s) are prepared in accordance with J.P. Morgan's policy for managing conflicts of interest which is available at the following link <https://www.jpmmorgan.com/corporate/About-JPMC/document/jpmc-coi-policy.pdf>.

If you have any questions, or to the extent that you object to the manner in which JPMS is handling the use of trade ideas that are submitted to ACPs, please contact your JPMS sales representative.

Trading Data

JPMS may utilize certain order and trade information to provide market color or trend analyses, both externally and to internal principal or agency trading desks, or to advertise, report on, or enhance the quality of its execution or other services offered to clients. JPMS also may share aggregated information with third parties that provide JPMS with analytics regarding, e.g., its market share and other performance metrics on a client-by-client basis. JPMS believes the above uses of order and trade information are sufficiently anonymized and/or aggregated to protect client strategies. If you have any questions about these practices, please contact your JPMS sales representative.

When choosing destinations for an order, JPMS' Algorithms/SOR may rely on historical or real-time execution data resulting from other orders routed by the Algorithms/SOR in the same security. A client may opt out of the inclusion of its real-time execution data in the real-time execution data relied upon to route other clients' orders, in which case real-time execution data resulting from other clients' orders would not be relied upon to route the client's orders. JPMS' Algorithms/SOR may always rely on real-time execution data resulting from a client's order when choosing destinations for that particular order.

The SOR decides whether to route firm orders to JPM-X in part based on an anonymized feed of the aggregated quantities of resting buy firm orders and resting sell firm orders, per symbol, available in each tier of the JPM-X order book at (i) the National Best Bid, (ii) National Best Offer, or (iii) NBBO midpoint (with non-peg limit orders that could be executed at more than one of the above prices aggregated with orders at the most aggressive of those prices). The SOR does not share information from the feed with any other trading system or desk. A client may opt out of the inclusion of its orders in the feed, in which case the SOR would not rely upon the feed when routing the client's orders.

FINRA Rule 4370 Business Continuity Plan

JPMS has corporate policies and procedures in place that strive to provide assurance and confidence that business continuity and contingency plans are adequate to support an unexpected disruption of our information systems and office facilities. The following business continuity control practices are in place:

1. Recovery plans are designed to restore the JPMS environment, which include alternative work spaces and back-up computer systems.
2. The recovery plans are subject to annual testing.
3. The recovery tests utilize off-site copies of data, applications, and system software.
4. Materials identified as necessary to resume operations are stored at off-site locations with security and environmental controls.
5. Long-range plans have been developed which relate to strategic business plans.
6. A regular review of capacity and resource needs is performed to update processing and storage requirements.

Our control policies, procedures, and practices have been reviewed, examined, and/or tested by internal and independent auditors.

JPMS has business continuity plans, which have been tested. These plans include off-site facilities for

trading, critical investment systems, and operating areas. In addition, call forwarding and other telecommunication services are in place to provide continued communication between JPMS and its clients. The specific details of these plans are confidential for obvious security reasons.

We also have extensive back-up policies, procedures, and processes in place designed to handle recovery activities with minimal interruption in service if a critical system failure should occur. Precautionary measures include the back-up and storage of critical data files on a regular basis on two independent media: disc and tape. Critical back-up tapes are then removed from the primary production site and stored at an off-site facility daily.

The recovery plans, policies, procedures, and practices address events ranging from small events to regional crises. Such events would include damage to or loss of single floors within our facilities, individual computer systems, entire facilities or data centers, and wide scale disruptions which affect both our staff and facilities/systems. JPMS will endeavor to continue business on behalf of its clients on that same business day during any and all events, recognizing that service may be impacted for longer periods depending upon the seriousness of the event.

In the event of a disaster or business disruption, if you are unable to contact your JPMS account representative, please contact the firm on (800) 392-3936 or through any JPMorgan Chase office. The recovery and business continuity plans of JPMS are subject to modification without notice. Updates will be posted to JPMS websites, and customers may request this information by contacting the number above.

JPMS does not guarantee that for every event or business disruption: (i) such plans will be successfully implemented; or (ii) such plans, if implemented, will be sufficient and appropriate to avoid, deter, or mitigate the event or business disruption. In addition, insofar as JPMS is dependent upon various infrastructures (e.g., transportation, telecommunications, exchanges, industry utilities, etc.), JPMS' ability to implement its plans may be impacted by issues with these infrastructures.

Transactions Effected by Non-U.S. Affiliates

JPMS intermediates securities transactions effected by its non-U.S. affiliates for or with its U.S. clients when appropriate and in accordance with Rule 15a-6 under the Securities Exchange Act of 1934.

Notice to Canadian Customers

Canadian securities orders from Canadian

clients must be placed directly with J.P. Morgan Securities Canada Inc. ("JPMSCI"). JPMSCI is the IROC Dealer Member affiliate of JPMS.

Confidential Information

Client and JPMSCI acknowledge and agree that information relating to Account Transactions of the client is confidential ("Confidential Information"). JPMSCI shall hold such information in strict confidence. Client consents to JPMSCI disclosing Confidential Information:

- (i) to the extent required by Applicable Law; and
- (ii) to its affiliates, service providers, and their respective employees, agents, or representatives who require such information.

Privacy

Client hereby consents to the collection, use, and disclosure of any personal information (within the meaning of applicable provincial/territorial or federal legislation) by or on behalf of JPMSCI, its agents, and employees, and any party by whom services are performed on behalf of the foregoing from time to time. A copy of the J.P. Morgan – Canada Wholesale Policy is available upon request.

National Instrument 31-103 (Registration Requirements and Exemptions)

In accordance with the above regulation, JPMS makes the following representations:

- If JPMS is trading with you in reliance upon the international dealer exemption from the dealer registration requirement under NI 31-103, JPMS is not registered in Canada and is subject to trading restrictions, including, among other things, that JPMS is only permitted to trade "foreign securities" with "permitted clients" resident in Canada. A foreign security is a security issued by an issuer incorporated, formed, or created under the laws of a foreign (i.e., non-Canadian) jurisdiction or a security issued by a government of a foreign jurisdiction. This serves to put you on notice that you should only place orders with JPMS for foreign securities in accordance with NI 31-103.
- JPMS' main office is located in New York, NY.
- There may be difficulty enforcing legal rights against JPMS because it resides outside of Canada and all of its assets are situated outside of Canada.
- The below list contains JPMS' agent for service of process for each province in Canada.

Alberta
152928 Canada Inc.
c/o Stikeman Elliott LLP

4300 Bankers Hall
888 3rd Street S.W. Calgary,
Alberta T2P 5C5 Attention:
President
T:(403) 266-9000 F:(403) 266-9034

British Columbia 152928
Canada Inc.
c/o Stikeman Elliott LLP 666
Burrard Street
Suite 1700, Park Place
Vancouver, British Columbia V6C 2X8 Attention:
President
T:(604) 631-1300 F:(604) 681-1825

Manitoba
MLT Aitkins LLP
30th Floor, 360 Main Street
Winnipeg, Manitoba R3C 4G1
Attention: Richard L. Yaffe
T:(204) 957-4670 F:(204) 957-4251

New Brunswick Stewart
McKelvey
Suite 1000, Brunswick House
44 Chipman Hill, P.O. Box 7289, Postal Station A
Saint John, NB E2L 4S6
Attention: C. Paul W. Smith
T:(506) 632-1970 F:(506) 652-1989

Newfoundland
Stewart McKelvey
Suite 1100, Cabot Place
100 New Gower Street, P.O. Box 5038
St. John's, Newfoundland and Labrador A1C 5V3
Attention: Geoff Brown
T:(709) 722-4270 F:(709) 722-4565

Nova Scotia
Stewart McKelvey
Suite 900, Purdy's Wharf Tower One 1959
Upper Water Street, P.O. Box 997 Halifax,
Nova Scotia, B3J 2X2
Attention: Gavin Stuttard
T:(902) 420-3200 F:(902) 420-1417

Ontario
152928 Canada Inc.
c/o Stikeman Elliott LLP
Suite 5300 Commerce Court West,
199 Bay Street
Toronto, Ontario M5L 1B9
Attention: President
T:(416) 869-5617 F:(416) 947-0866

Prince Edward Island
Stewart McKelvey
65 Grafton Street
P.O. Box 2140, Stn Central
Charlottetown, Prince Edward Island C1A 8B9
Attention: Keith Boswell
T:(902) 892-2485 F:(902) 566-5283

Quebec
152928 Canada Inc.
c/o Stikeman Elliott LLP

1155 René-Lévesque Blvd., 41st floor
Montréal, Quebec H3B 3V2
Attention: Président
T:(514) 397-3000 F:(514) 397-3222

Saskatchewan McDougall
Gauley LLP
1500 – 1881 Scarth Street
Regina, Saskatchewan S4P 4K9
Attention: Michael W. Milani, Q.C.
T:(306) 565-5117 F:(306) 359-0785

Nunavut Field
Law
P.O. Box 1734
House 2436
Iqaluit, NU X0A 0H0
T:(867) 979-0550

Northwest Territory
Field Law
Suite 601
4920 – 52nd Street
Yellowknife, NT X1A 3T1
T:(867) 920-4542

Yukon Territory
Lackowicz & Hoffman
300 – 204 Black Street
Whitehorse, Yukon Territory Y1A 2M9
T:(867) 668-5252

Please feel free to contact your J.P. Morgan sales representative with questions regarding any of the above.

Canada's Anti-Spam Legislation ("CASL")

CASL sets forth the requirements for sending any commercial electronic message ("CEMs") to the electronic address of a person within Canada. Pursuant to CASL, any CEMs sent to you by JPMS are exempt from CASL under the exemption provided for inter-business CEMs.

Filing a Complaint

If you have a complaint about our services or a product, please contact your registered representative. You may want to consider using a method other than email for sensitive information. Acknowledgement of complaints may take place as soon as possible; typically we strive to respond within 5 business days. Decisions regarding complaints may be provided roughly within 90 days of receiving the complaint.

In addition, you may be eligible for Ombudsman for Banking Services and Investments ("OBISI") independent dispute resolution services when:

- We do not provide our decision within 90 days after you made your complaint

or

- You are not satisfied with our decision.

For more information about filing a complaint with OBISI, visit <http://www.obsi.ca/>.

Wrapper Exemption

JPMS is delivering this notice to inform you that we are relying on the exemption in section 3A.3 or 3A.4, as applicable, of National Instrument 33-105 *Underwriting Conflicts* (NI 33-105) from the underwriter conflicts of interest disclosure requirements of NI 33-105 for any distribution to you in the future of an eligible foreign security, as defined in NI 33-105.

If, in connection with a distribution of an eligible foreign security, as defined in Ontario Securities Commission Rule 45-501 *Ontario Prospectus and Registration Exemptions* or Multilateral Instrument 45-107 *Listing Representation and Statutory Rights of Action Disclosure Exemptions*, we deliver to you an offering document that constitutes an offering memorandum under applicable securities laws in Canada, you may have, depending on the province or territory of Canada in which the trade was made to you, remedies for rescission or damages if the offering memorandum (including any amendment thereto) contains a misrepresentation, provided that the remedies for rescission or damages are exercised by you within the time limit prescribed by the securities legislation of your province or territory. You should refer to any applicable provisions of the securities legislation of your province or territory for the particulars of these rights or consult with a legal advisor.

Important Disclosure to Clients Trading Brazilian Securities

This disclosure applies to customer accounts ("Customer") transacting in Brazilian securities through JPMS. By conducting trades, the Customer will be deemed to have agreed and accepted the terms which are set forth in this disclosure statement.

Where the Customer is an investment advisor, the Customer confirms that it has authority to trade with JPMS on behalf of its advised clients.

Where the Customer is an investment advisor, it has authority, and unless specifically stated otherwise, does make all representations and acknowledges all matters herein on behalf of itself and its advised clients.

Your transactions in Brazilian financial instruments (the "Trades") will be executed on the Brazilian B3 S.A. – Brasil, Bolsa, Balcão ("B3") through JPMS and its Brazil brokerage affiliate

J.P. Morgan Corretora de Câmbio e Valores Mobiliários S.A. ("Brazil Broker"). With regard to these Trades, the Customer acknowledges and agrees to the following:

1. The Trades are subject to various laws and regulations in Brazil, including, without limitation, the Brazil Broker's Rules and Parameters and code of ethics (available at Brazil Broker's website, <http://www.jpmorgan.com/pages/jpmorgan/brazil/en/business/ib/ccvm>), the laws and regulations issued by the National Monetary Council of Brazil, the Brazilian Central Bank (<https://www.bcb.gov.br/en>), the Brazilian Securities Commission ("CVM") (http://www.cvm.gov.br/subportal_ingles/index.html), and B3 (http://www.b3.com.br/en_us/), including, with respect to the latter, those established by B3's bylaws, regulations, manuals, standards, and rules in general.

2. B3 is the self-regulating entity of the Brazilian equity markets and is the auxiliary body of the CVM. B3, in this capacity, is responsible for regulating and supervising the operations and activities carried out by the Brazil Broker in the markets managed by B3 and cleared and settled through B3. Customer expressly abides by the rules and procedures established by such entities and commits to: (i) comply with such rules and procedures; and (ii) be subject to all the restrictions and penalties eventually applicable, in accordance with such rules and procedures as well as the regulations in force.

3. The Customer and the Brazil Broker may be required to provide information to Brazilian regulators, including but not limited to the Brazilian Central Bank, the CVM, or B3, related to Trades.

4. The Brazil Broker may, in its discretion, refuse to receive or execute, totally or partially, the Customer's orders, or cancel any Customer pending order, immediately communicating this refusal or cancellation to the Customer, if:

- (a) the Customer is defaulting on any of his obligations;
- (b) the orders to be executed represent excessive risks in relation to the Customer's financial capacity; and/or
- (c) the Brazil Broker verifies any irregularity, breach, or non-compliance with applicable laws or regulations, in particular those aimed at creating artificial demand, or artificial offer or price conditions, price manipulation, fraudulent transactions, or other non-equitable market practices.

5. The Brazil Broker is required by B3 to: (i) enforce operating and credit limits for its operations; and (ii) establish mechanisms to limit "excessive risks" stemming from market price fluctuations and exceptional market conditions which could "harm" the Customer.

6. In order to be able to carry out the Trades on the B3, the Customer shall: (i) maintain an account with the Brazil Broker and (ii) observe the terms established by the Brazil Broker in connection therewith, so as to comply with all of the Customer's obligations in connection with the Trades and the terms hereof.

7. The Customer appoints the Brazil Broker as a representative on the B3, with power to: (i) take all necessary steps to carry out the Trades, receive and acquit, enter into agreements, and settle the Trades; and (ii) assume all obligations and exercise all rights arising from B3 standards and regulations.

8. The Customer hereby recognizes and agrees that in the case of insufficient balances in its account or lack of payment or delivery, in part or in full, of funds or securities due in connection with the Trades, including, but without limitation, any margins required by the Brazil Broker, by 12pm (twelve o'clock) SPT on the day they are due, the Brazil Broker shall be entitled to, without previous notice or any other judicial or extrajudicial measure, (a) execute, retain, and/or transfer any funds or assets which are held to the Customer's benefit or account and/or held under some form of guarantee and (b) sell, at market prices, the securities and/or other assets given as collateral, as well as any other assets which are held to the Customer's benefit or account and/or held under some form of guarantee, including without limitation, the positions, securities, and/or assets in connection with the Trades executed on the B3.

9. In case of failure to comply with its payment obligations, the Customer shall have its name included in the B3's list of defaulted clients and shall not be authorized to trade until full payment of its outstanding debt, in accordance with the rules issued by the B3.

10. The Customer shall be deemed compliant with its payment obligations relating to the Trades executed on the B3's markets only upon confirmation of receipt of funds by (i) the Brazil Broker; (ii) the Brazil Broker's clearing member; and (iii) the B3. Notwithstanding paragraph 9 above, any collateral posted by the Customer in connection with his Trades may be executed (i) by the Brazil Broker's clearing member if the Brazil Broker fails to transfer to its clearing member the settlement funds corresponding to the Trades executed for the Customer; and (ii) by the B3 if the Brazil Broker's clearing member fails to transfer to the B3 the settlement funds corresponding to the Trades executed for the Customer.

11. The Customer represents and agrees: (a) it is not affiliated with the Brazil Broker; (b) it is not

a Related Person as defined by CVM Rule nº 505/11, as amended from time to time; (c) the Brazil Broker will not be held accountable for (i) investment losses arising from changes in market value on positions resulting from Trades; (ii) intentional or negligent acts carried out by third parties; or (iii) positions resulting from Trades based on incorrect information presented by the Customer to the Brazil Broker; (d) the Brazil Broker will not be liable for delays in the transmission of orders, failure of communication, or any other cause beyond the Brazil Broker's control, including the negligence or misconduct of B3 or its directors, employees, or agents; and (e) the Brazil Broker will not be liable for failure or delay by B3 in complying with its duties to fulfill its obligations or the full payment of all amounts directly or indirectly owed to the Customer, with respect to any transaction contemplated under this disclosure statement.

12. The Customer and any advised sub-accounts shall maintain at all times accurate and current record information with the Brazil Broker and/or JPMS. In addition, in connection with any Trade for the Customer's own account or for its sub-accounts, its customers, or other persons, the Customer shall: (a) promptly respond and provide such information as may be requested by JPMS or the Brazil Broker to comply with the request of any Brazilian regulator, within the deadlines established by JPMS or the Brazil Broker; and (b) provide information and documents upon request, including concerning the identity, address, occupation, contact details, income, net worth, and financial situation of each Customer, as well as the persons having ultimate beneficial interest in the Trade.

13. All communication (including by telephone, electronic mail, messaging systems, or similar means of communication) between the Customer and/or JPMS acting on behalf of the Customer and the Brazil Broker, shall be recorded by the Brazil Broker and maintained in its files (the "Recording") for 5 (five) years, or in the case of regulatory proceedings for such longer period as determined by the CVM, the B3, or the *BM&FBovespa Supervisão de Mercados* ("BSM"). The Recording may be used as evidence for clarification of questions arising in connection with the Customer's account and/or the Trades.

14. Brokerage fees shall be agreed among the Customer, JPMS, and the Brazil Broker, taking into account a variety of factors, possibly including volume of trades, growth, and volume expectations; characteristics of the transactions; and client profile and relationship.

15. With respect to Trades in derivatives on B3, Customer expressly acknowledges and agrees that: (a) the value of its open positions is adjusted daily to reflect the market price fluctuations in accordance with B3's rules. Acting as a buyer in

the futures market, the Customer bears the risk of having a negative impact in the value of its adjusted position if market prices go down. Acting as a seller in the futures market, the Customer bears the risks of having a negative impact in the value of its adjusted position if market prices go up. In either case, the Customer will be required to pay daily adjustments in cash related to the market value adjustment on the positions related to its Trade and, at the discretion of B3 and/or the Brazil Broker, comply with margining requirements; (b) Brazil Broker may at its own discretion (i) limit the amount of open positions held on behalf of the Customer as well as close them out in case the limit is exceeded; (ii) close out, totally or partially, the Customer's positions; (iii) proceed with the enforcement of the guarantees held on behalf of the Customer; (iv) sell or buy the securities necessary for the settlement of open positions held on behalf of the Customer; and (v) request the increase of margins, including for existing positions held on behalf of Customer, payments in anticipation of daily adjustments, additional collateral as the Brazil Broker deems appropriate, and the replacement of deposited collateral, including, without limitation, for existing positions for which collateral has been already posted; (c) the Customer shall post additional collateral and/or replace posted collateral as required and subject to the terms and conditions established by the Brazil Broker; (d) the risk of carry trade is not eliminated by holding covered or offsetting positions by the Customer, either on the futures or options markets; (e) Trades involving options bear certain risks, including: (i) as buyer of a call option the Customer may have a loss on the premium paid, or part thereof, in case the intrinsic value of the option (*i.e.*, the difference between the price of the underlying asset and the strike price, if positive) is lower than the amount of the premium paid for such option; (ii) as buyer of a put option the Customer may have a loss on the premium paid, or part thereof, in case the intrinsic value of the option (*i.e.*, the difference between the strike price and the price of the underlying asset, if positive) is lower than the amount of the premium paid for such option; (iii) as seller of a call option the Customer may suffer losses directly related to the increase of price of the underlying asset in excess of the premium received; and (iv) as seller of a put option the Customer may suffer losses directly related to the decrease of price of the underlying asset in excess of the premium received; (f) despite the fact that open positions in the future and options market may be offset by entering into an opposite Trade (buy or sell) to realize a profit, stop a loss, or avoid the exercise of an option, under certain market liquidity conditions it may be difficult or impossible to liquidate or acquire a position or, in case the position is linked to a stop-loss order, to execute such an order at the stipulated price; and (g) in case of unforeseen situations related to derivatives traded by the Customer or of governmental measures or any other extraordinary factors that impact the pricing, its calculation or disclosure, or its discontinuity, B3 shall take the measures it deems necessary, at its own discretion, to settle the Customer's position or to maintain such position

opened on an equivalent basis.

16. Customer acknowledges and agrees that in the event it has not, in its sole discretion, hired a third-party custodian to provide custodial services for securities and assets, or even in the case it has engaged a third-party custodian yet it prefers to engage the Brazil Broker for the provision of such services with respect to the Trades specified in this Disclosure, it undertakes to, assuming full responsibility for its decision, execute with the Brazil Broker a separate SECURITIES AND ASSETS CUSTODY AGREEMENT (“Custody Agreement”) in order to regulate the provision of custody services by the Brazil Broker, and, in such case, the terms of the Custody Agreement as well as the conditions set out above and in Section 11 of the Rules and Parameters shall apply to the relationship between them. In case of any conflicts between the provisions of the Custody Agreement and the provisions of this disclosure statement, the Custody Agreement provisions shall prevail for all purposes. Regardless of whether the Customer has hired a third-party custodian for the provision of securities custody services and does not intend to hire the Brazil Broker for such purpose, the terms of this clause and those set forth in Section 11 of the Rules and Parameters shall remain applicable, as appropriate, on the occasions that the Brazil Broker provides custody services (i) as required by B3, in cases which the broker and the custodian acting in a particular transaction must be the same institution, such as custody services of shares used as collateral in the B3’s future markets (Stock options or BTC Securities Borrowing and Lending) or (ii) when there is a failure in the settlement of any transaction, or operational error which results in the Brazil Broker rendering such services to the Customer. Specifically with respect to item (i) of the above provision, in case B3 at any time permits that the custodian and the Brazil Broker of the reference transactions be distinct institutions, unless otherwise agreed between the Brazil Broker and the Customer, the Brazil Broker shall cease to provide services of securities and assets custody under such transactions. The Brazil Broker, in the capacity of Customer’s custodian whenever applicable shall perform the Customer registration in B3’s system, through the register of required information to Customer’s identification, pursuant to applicable legislation in force. During the provision of securities custody services by the Brazil Broker, in the individual account opened by the Brazil Broker in the Customer’s name at B3 (“Custody Account”), it shall register: (i) all the deposits, withdrawals and assets transfers; and (ii) debts and credits of assets related to the Custody Events (under the terms of this disclosure, “Custody Event” comprises all the obligations from the security issuer related to the redemption of the principal and accessories of the asset held in custody by a central securities depository); (iii) the financial resources provisions from the asset’s issuer, which refers to Custody Events; (iv) the financial resources due by the Custody Agent and the Customer; (v) the requests for exercise of any

rights; (vi) debts and credits of assets related to the settlement of transactions; (vii) the creation of liens or encumbrances on assets held under custody; and (viii) the blocks on movement of assets deposited under B3’s custody by virtue of a judicial order. The Customer authorizes the Brazil Broker to implement, whenever requested, the Sale Locking Mechanism, pursuant to B3 rulebooks. Under the terms of this disclosure, “Sale Locking Mechanism” means the mechanism whereby the Custody Agent indicates that the relevant assets, subject to a particular sale Trade, are committed to guarantee the fulfillment of the obligation of delivering the assets from or to the settlement account, for the purpose of settlement of the obligations related to such Trade. When acting in the capacity of custodian, the Brazil Broker shall: (i) ensure the integrity of the assets held in custody and maintain confidentiality about its characteristics and quantities, as well as perform the control and preservation of such assets, the respective management and financial settlement, including within the systems of clearinghouses and central securities depositories; (ii) perform the daily reconciliation of Customer’s positions, ensuring that the assets and respective rights are duly registered in the name of Customer within such custody systems, when applicable; (iii) maintain the assets owned by the Customer deposited in individual Custody Accounts, under its name; (iv) make deposits, withdrawals and transfer of assets held in custody exclusively based on Customer’s instructions, provided that these movements are in accordance with the legislation in force, except for the cases of judicial orders or arising from regulatory bodies; (v) process corporate events associated with the assets (“Custody Events”), performing the continuous monitoring of such events as per deliberated by respective issuers and forwarding the financial resources or assets related to the Custody Events and, when applicable, collect the taxes due; (vi) provide periodic information on the assets and the Custody Account to the Customer, pursuant to the terms established herein and the applicable legislation; (vii) formally request to B3 the necessary information in order that the Customer be represented towards the issuer of the assets of its ownership; (viii) create liens and encumbrances on the assets and securities, including those subject to centralized deposit within the custody systems, upon receiving instructions by the Customer and subject to the conditions to be established by the Brazil Broker in each specific case, as well as in accordance with applicable regulations and internal rules issued by the central securities depositories; (ix) give notice to the Customer, as provided in the B3’s Operational Procedures, whenever it intends to cease the custody activities or cease providing the services to the Customer; and (x) like B3, may extend to the Customer the sanctions and measures imposed by B3 to the Brazil Broker as a consequence of Customer’s acts. Notwithstanding other statements provided by the Customer, the Customer acknowledges and

know entirely the risks associated with the rendering of the custody services, especially the following: (i) Systemic and Operational Risks. Notwithstanding the procedures adopted by the Brazil Broker to maintain computerized processes and systems in operation, safe and suitable for the provision of the services hereunder, given the complexity of such systems and their interaction with other systems necessary to enable the provision of the services, including but not limited to the central depository systems, there is a risk of systemic or operational failures which may impact the services rendered by the Brazil Broker; and (ii) Risks of Intervention and Liquidation of the Brazil Broker. By its nature, custody of cash becomes a credit against the Brazil Broker and is not subject to centralized deposit regime. In this sense, in the event of intervention or extrajudicial liquidation of the Brazil Broker, there is a possibility that all cash under custody will be blocked, which would then create the need for administrative and judicial measures for the recovery of such resources, with no guarantee of success. During the provision of custody services by the Brazil Broker, the instructions related to the transfer/movement of assets under Brazil Broker’s custody sent by the Customer shall be sent in accordance with the provisions set forth in this disclosure statement applicable to the sending of orders to the Brazil Broker, as well as in accordance with the criteria established in the Rules and Parameters of the Brazil Broker. The Customer hereby agrees that the Brazil Broker shall, in its sole discretion, hire third-parties to provide the custody services contemplated in this clause; however, pursuant to the applicable legislation in force, the Brazil Broker shall remain responsible for the obligations undertaken towards the Customer, regulatory bodies and central securities depositories.

17. Failure to comply with any of the terms may result in JPMS or the Brazil Broker being unable to accept orders for Trades from the Customer or on behalf of sub-accounts or other third parties.

This disclosure shall be governed by and interpreted in accordance with the laws of New York. Please contact your J.P. Morgan sales representative if you have any questions regarding this matter.

Important Disclosure Regarding Terms of Business Applicable to Securities Transactions on Asia Pacific (ex-Japan) Markets

This disclosure applies to securities transactions executed on a market located in Asia Pacific (ex-Japan) that are intermediated by JPMS pursuant to Rule 15a-6 under the Securities Exchange Act of 1934 (“APAC Transactions”). All APAC Transactions shall be effected by J.P. Morgan entities in Asia Pacific (ex-Japan) (the “J.P. Morgan APAC Entities”), including J.P. Morgan Securities (Asia Pacific) Limited and J.P. Morgan Securities Australia Limited, pursuant to Rule 15a-6. By executing an APAC Transaction, you will be deemed to have agreed to and accepted the terms set out in the J.P. Morgan Terms of Business with the J.P. Morgan

APAC Entities. The J.P. Morgan Terms of Business is available at <https://jpm-jpmorgan-aem-preview-tr.jpmchase.net/content/dam/jpm/global/disclosure/by-business/jpmorgan-terms-of-business-asia-pacific-ex-japan-markets.pdf>.

Order Handling with Respect to Orders Executed by J.P. Morgan Securities (Asia Pacific) Limited

When handling your orders, J.P. Morgan Securities (Asia Pacific) Limited (“JPMSAPL”) will take all reasonable steps to provide execution on best available terms under the Hong Kong Code of Conduct for Persons Licensed by or Registered with the Securities and Futures Commission.

Where you give your order to JPMS for execution by JPMSAPL in Asia markets, you hereby authorize JPMS to send your specific trade instructions (e.g., “not held” or the execution capacity in which JPMSAPL and/or its affiliates may fill your order) for and on your behalf to JPMSAPL. JPMSAPL will endeavor to execute your orders in Hong Kong listed equities as your agent unless JPMSAPL and/or JPMS reasonably understand your instructions otherwise whereupon JPMSAPL may endeavor to arrange for an affiliate of JPMSAPL to act as the principal to your order. Where JPMSAPL is unable to complete the full execution of your order as your agent, any residual part of your order which could not be completed as agent may be completed by an affiliate of JPMSAPL as principal. In such circumstances, JPMSAPL and/or its affiliates will endeavor to notify you of the residual portion that is filled as principal.

With respect to your orders for execution by JPMSAPL outside Hong Kong, unless JPMSAPL and/or JPMS reasonably understand your instructions otherwise, you consent to JPMSAPL and/or its affiliates filling or otherwise facilitating your order (or part of your order) as principal in accordance with the laws, regulations, rules, and customary market practices (including with respect to the execution capacity in which JPMSAPL and/or its affiliates may fill your order) of the applicable market. In such circumstances, JPMSAPL and/or its affiliates will endeavor to notify you of the residual portion that is filled as principal.

Important Disclosure for Australian Clients

Under Australian licensing requirements, the provision of financial services to Australian entities generally requires a financial service provider to hold an Australian Financial Services License (“AFSL”) unless an exemption is granted by the Australian Securities and Investments Commission (“ASIC”).

JPMS does not hold an AFSL covering the

financial services it provides to you. However, JPMS is exempt from the requirement to hold an AFSL under the Corporations Act 2001 of Australia (the “Act”).

Please note that JPMS is primarily regulated by the SEC, FINRA, and the U.S. Commodity Futures Trading Commission (“CFTC”) under the laws of the United States of America, which differ from Australian laws.

In addition to services provided to you by JPMS, you may receive ancillary services from related J.P. Morgan entities (“Related Entities”) that do not hold an AFSL but operate under similar exemptions and are regulated as follows:

1. J.P. Morgan Securities (Asia Pacific) Limited is regulated by the Hong Kong Securities and Futures Commission under the laws of Hong Kong, which differ from Australian laws.
2. J.P. Morgan Securities plc is authorized by the Prudential Regulation Authority (“PRA”) and regulated by the Financial Conduct Authority and the PRA under the laws of the United Kingdom, which differ from Australian laws.
3. J.P. Morgan Markets Limited is authorized and regulated by the Financial Conduct Authority under the laws of the United Kingdom, which differ from Australian laws.
4. J.P. Morgan (S.E.A.) Limited, J.P. Morgan Securities Singapore Private Limited and J.P. Morgan Securities Asia Private Limited are regulated by the Monetary Authority of Singapore under the laws of Singapore, which differ from Australian laws.
5. J.P. Morgan AG is regulated by BaFin under the laws of Germany, which differ from Australian laws.

JPMS and the Related Entities understand that you are a wholesale client within the meaning of section 761G of the Act (“Wholesale Client”). JPMS and the Related Entities may only continue to provide you with financial services while you remain a Wholesale Client. Please inform us if you are not a Wholesale Client now or if you cease to be a Wholesale Client at any time in the future.

If you have any questions regarding this notification, please contact your J.P. Morgan sales representative.

We look forward to continuing to provide you with financial services.

Please feel free to contact your J.P. Morgan sales representative with questions regarding any of the above.