

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549

FORM 8-K

CURRENT REPORT

Pursuant to Section 13 or 15(d) of the
Securities Exchange Act of 1934

Date of Report (Date of earliest event reported): April 25, 2025

BULLFROG AI HOLDINGS, INC.

(Exact name of Registrant as Specified in Its Charter)

Nevada (State or Other Jurisdiction of Incorporation)	001-41600 (Commission File Number)	84-4786155 (IRS Employer Identification No.)
325 Ellington Blvd, Unit 317 Gaithersburg, MD (Address of Principal Executive Offices)		20878 (Zip Code)

Registrant's Telephone Number, Including Area Code: (240) 658-6710

Not Applicable

(Former Name or Former Address, if Changed Since Last Report)

Check the appropriate box below if the Form 8-K filing is intended to simultaneously satisfy the filing obligation of the registrant under any of the following provisions:

- ☐ Written communications pursuant to Rule 425 under the Securities Act (17 CFR 230.425)
- ☐ Soliciting material pursuant to Rule 14a-12 under the Exchange Act (17 CFR 240.14a-12)
- ☐ Pre-commencement communications pursuant to Rule 14d-2(b) under the Exchange Act (17 CFR 240.14d-2(b))
- ☐ Pre-commencement communications pursuant to Rule 13e-4(c) under the Exchange Act (17 CFR 240.13e-4(c))

Securities registered pursuant to Section 12(b) of the Act:

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Common Stock, par value \$0.00001 per share	BFRG	The Nasdaq Stock Market LLC (The Nasdaq Capital Market)
Tradeable Warrants	BFRGW	The Nasdaq Stock Market LLC (The Nasdaq Capital Market)

Indicate by check mark whether the registrant is an emerging growth company as defined in Rule 405 of the Securities Act of 1933 (§230.405 of this chapter) or Rule 12b-2 of the Securities Exchange Act of 1934 (§ 240.12b-2 of this chapter).

Emerging growth company ☒

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act. ☐

Item 1.01 Entry Into a Material Definitive Agreement.

On April 25, 2025, Bullfrog AI Holdings, Inc. (the “Company”) entered into an At-The-Market Sales Agreement (the “Agreement”) with BTIG, LLC (“BTIG”), pursuant to which the Company may offer and sell, from time to time in its sole discretion, shares of its common stock, par value \$0.00001 per share (the “Common Stock”), having an aggregate offering price of up to \$20,000,000 (the “Shares”), through BTIG as its sales agent. The Shares will be offered and sold pursuant to the Company’s Registration Statement on Form S-3 (Registration No. 333-281341) filed by the Company on August 7, 2024, as amended by Amendment No. 1 thereto filed on August 15, 2024, and declared effective by the U.S. Securities and Exchange Commission on August 21, 2024 (the “Registration Statement”) and the Company’s prospectus supplement filed on April 25, 2025 that forms a part of such Registration Statement. The issuance and sale, if any, of the Shares may be made by any method permitted by law deemed to be an “at-the-market offering” as defined in Rule 415 of the Securities Act of 1933, as amended, including, without limitation, sales made directly on the Nasdaq Capital Market, or on any other existing trading market for the Common Stock.

The Company is not obligated to make any sales of the Common Stock, and BTIG is not required to sell any specific number or dollar amount of shares of the Common Stock, under the Agreement. The Company and BTIG may suspend or terminate the offering of Shares upon notice to BTIG or the Company, as applicable, and subject to other conditions.

Subject to the Company’s request to sell Shares, BTIG will act as the Company’s sales agent and use commercially reasonable efforts, consistent with its normal trading and sales practices, to sell on the Company’s behalf, from time to time, such Shares based upon instructions from the Company (including any price, time or size limits or other customary parameters or conditions that the Company may impose). The Company will pay BTIG a commission fee of 3% of the gross sales price of any Shares sold through

BTIG under the Agreement, and also has provided BTIG with customary representations and warranties and indemnification under the Agreement.

The foregoing description of the Agreement is not complete and is qualified in its entirety by reference to the full text of the Agreement, a copy of which is filed as Exhibit 1.1 to this Current Report on Form 8-K and incorporated herein by reference. The opinion of Ballard Spahr regarding the validity of the Shares that will be issued pursuant to the Agreement is also filed herewith as Exhibit 5.1.

This Current Report on Form 8-K shall not constitute an offer to sell or the solicitation of an offer to buy the securities discussed herein, nor shall there be any offer, solicitation, or sale of the securities in any state in which such offer, solicitation or sale would be unlawful prior to registration or qualification under the securities laws of any such state.

Item 9.01 Financial Statements and Exhibits.

(d) Exhibits

Exhibit No.	Description
1.1	At-The-Market Sales Agreement, dated April 25, 2025, by and between Bullfrog AI Holdings, Inc. and BTIG, LLC.
5.1	Opinion of Ballard Spahr.
23.1	Consent of Ballard Spahr (included in Exhibit 5.1).
104	Cover Page Interactive Data File (formatted as Inline XBRL)

SIGNATURE

Pursuant to the requirements of the Securities Exchange Act of 1934, the Registrant has duly caused this report to be signed on its behalf by the undersigned hereunto duly authorized.

Bullfrog AI Holdings, Inc.

Date: April 28, 2025

By: /s/ Vininder Singh
Name: Vininder Singh
Title: Chief Executive Officer

BULLFROG AI HOLDINGS, INC.
UP TO \$20,000,000 OF COMMON STOCK
(PAR VALUE \$0.00001 PER SHARE)
AT-THE-MARKET SALES AGREEMENT

April 25, 2025

BTIG, LLC
 65 East 55th Street
 New York, New York 10022

Ladies and Gentlemen:

Bullfrog AI Holdings, Inc., a Nevada corporation (the “**Company**”), confirms its agreement (this “**Agreement**”) with BTIG, LLC (“**BTIG**” and, together with the Company, the “**Parties**”), as follows:

1. **Issuance and Sale of Shares.** The Company agrees that, from time to time during the term of this Agreement, on the terms and subject to the conditions set forth herein, it may issue and sell to or through BTIG, as sales agent and/or principal, up to that number of shares of the Company’s Common Stock, par value \$0.00001 per share (the “**Common Stock**”), having an aggregate offering price of \$20,000,000 (the “**Shares**”); *provided, however*, that in no event shall the Company issue or sell to or through BTIG such number of *Shares* that would (a) cause the Company not to satisfy the eligibility requirements for use of Form S-3 (including, if and so long as applicable, General Instruction I.B.6. of Form S-3), (b) exceed the number or amount of shares of Common Stock then available for offer and sale under the currently effective Registration Statement (as defined below) pursuant to which the offering hereunder and under any Terms Agreement is being made or (c) exceed the number of authorized but unissued shares of the Company’s Common Stock (the lesser of (a), (b) and (c), the “**Maximum Amount**”). Notwithstanding anything to the contrary contained herein, the Parties acknowledge and agree that compliance with the limitations set forth in this Section 1 on the Maximum Amount of Shares that may be issued and sold under this Agreement and any Terms Agreement (as defined below) shall be the sole responsibility of the Company, and that BTIG shall have no obligation in connection with such compliance. The Company agrees that whenever it determines to sell Shares directly to BTIG, as principal, it will enter into a separate agreement (each, a “**Terms Agreement**”) in the form agreed upon by the Company and BTIG relating to such sale in accordance with Section 2(b) of this Agreement (each such transaction being referred to as a “**Principal Transaction**”). Each transaction pursuant to this Agreement in which the Company determines to sell Shares through BTIG, as sales agent, is hereinafter referred to as an “**Agency Transaction**”. The issuance and sale of Shares to or through BTIG will be effected pursuant to the Registration Statement (as defined below) filed by the Company and which was declared effective under the Securities Act (as defined below) by the U.S. Securities and Exchange Commission (the “**Commission**”).

The Company has prepared and filed, in accordance with the provisions of the Securities Act of 1933, as amended, and the rules and regulations promulgated thereunder (collectively, the “**Securities Act**”), with the Commission, not earlier than three years prior to the date hereof, a shelf registration statement on Form S-3 (File No. 333-281341), including a base prospectus, with respect to offerings of certain securities of the Company, including the Shares, and which incorporates by reference documents that the Company has filed or will file in accordance with the provisions of the Securities Exchange Act of 1934, as amended, and the rules and regulations promulgated thereunder (collectively, the “**Exchange Act**”). The Company has prepared a prospectus supplement to the base prospectus included as part of such registration statement at the time it became effective specifically relating to the offering of the Shares pursuant to this Agreement (the “**Prospectus Supplement**”). The Company will furnish to BTIG, for use by BTIG, copies of the base prospectus included as part of such registration statement at the time it became effective, as supplemented by the Prospectus Supplement. Except where the context otherwise requires, such registration statement, as declared effective by the Commission, including the information, if any, deemed pursuant to Rule 430B or 430C under the Securities Act, as applicable, to be part of the registration statement at the time of its effectiveness and all documents filed as part thereof or incorporated by reference therein, and including any information contained in the Prospectus (as defined below) subsequently filed with the Commission pursuant to Rule 424(b) under the Securities Act, collectively, are herein called the “**Registration Statement**,” and the base prospectus included in the registration statement at the time it became effective, including all documents incorporated therein by reference to the extent such information has not been superseded or modified in accordance with Rule 412 under the Securities Act (as qualified by Rule 430B(g) of the Securities Act), as it may be supplemented by the Prospectus Supplement, in the form filed by the Company with the Commission pursuant to Rule 424(b) under the Securities Act, together with any “issuer free writing prospectus” as defined in Rule 433 under the Securities Act (“**Rule 433**”), relating to the Shares (to the extent that the Company is able under Rule 433 to issue any issuer free writing prospectus) that (i) is required to be filed with the Commission by the Company or (ii) is exempt from filing pursuant to Rule 433(d)(5)(i), in each case, in the form filed or required to be filed with the Commission or, if not required to be filed, in the form retained in the Company’s records pursuant to Rule 433(g), is herein called the “**Prospectus**.” If the Company has filed an abbreviated registration statement to register additional securities of the Company pursuant to Rule 462(b) under the Securities Act, then any reference to the Registration Statement in this Agreement shall also be deemed to include such abbreviated registration statement filed by the Company pursuant to Rule 462(b) under the Securities Act. Any reference herein to the Registration Statement, the Prospectus or any amendment or supplement thereto shall be deemed to refer to and include the documents incorporated by reference therein, and any reference herein to the terms “amend,” “amendment” or “supplement” with respect to the Registration Statement or the Prospectus shall be deemed to refer to and include the filing after the execution hereof of any document with the Commission deemed to be incorporated by reference therein (such documents incorporated or deemed to be incorporated by reference are herein called the “**Incorporated Documents**”). For purposes of this Agreement, all references to the Registration Statement, the Prospectus or to any amendment or supplement thereto shall be deemed to include any copy filed with the Commission pursuant to its Electronic Data Gathering Analysis and Retrieval system, or if applicable, the Interactive Data Electronic Applications system when used by the Commission (collectively, “**EDGAR**”).

2. Placements: Principal Transactions.

(a) Each time that the Company wishes to issue and sell Shares hereunder in an Agency Transaction (each, a “**Placement**”), it will notify BTIG by email notice (or other method mutually agreed to in writing by the Parties) of the amount of Shares requested to be sold or the gross proceeds to be raised in a given time period, the time period during which sales are requested to be made, any limitation on the amount of Shares that may be sold in any single day, any minimum price below which sales may not be made or any minimum price requested for sales in a given time period and any other instructions relevant to such requested sales (a “**Placement Notice**”), the form of which is attached hereto as Schedule 1. A Placement Notice shall originate from any of the individual representatives of the Company set forth on Schedule 3, and shall be addressed to each of the individual representatives of BTIG set forth on Schedule 3, as such Schedule 3 may be amended from time to time. Provided the Company is otherwise in compliance with the terms of this Agreement, the Placement Notice shall be effective unless and until (i) BTIG, in accordance with the notice requirements set forth in Section 4, declines to accept the terms contained therein for any reason, in its sole discretion (which shall not be deemed a breach of BTIG’s agreement herein), (ii) the entire amount of the Shares thereunder have been sold or the aggregate Shares sold under this Agreement and all Terms Agreements equals the Maximum Amount, whichever occurs first, (iii) the Company, in accordance with the notice requirements set forth in Section 4, suspends or terminates the Placement Notice or sales thereunder, (iv) BTIG, in accordance with the notice requirements set forth in Section 4, suspends sales under the Placement Notice, (v) the Company issues a subsequent Placement Notice with parameters superseding those on the earlier dated Placement Notice or (vi) this Agreement has been terminated under the provisions of Section 12. The amount of any commission to be paid by the Company to BTIG in connection with the sale of the Shares effected

through BTIG, as agent, in an Agency Transaction shall be calculated in accordance with the terms set forth in Schedule 2. It is expressly acknowledged and agreed that neither the Company nor BTIG will have any obligation whatsoever with respect to a Placement or any Shares unless and until the Company delivers a Placement Notice to BTIG and BTIG does not decline such Placement Notice pursuant to the terms set forth above, and then only upon the terms specified therein and herein. In the event of a conflict between the terms of this Agreement and the terms of a Placement Notice, the terms of the Placement Notice will control.

3

(b) If the Company wishes to issue and sell Shares hereunder in a Principal Transaction, it will notify BTIG by email notice (or other method mutually agreed to in writing by the Parties) of the proposed terms of the Principal Transaction. If BTIG, acting as principal, wishes to accept such proposed terms (which it may decline to do for any reason in its sole discretion) or, following discussions with the Company, wishes to accept amended terms, the Company and BTIG shall enter into a Terms Agreement setting forth the terms of such Principal Transaction. Neither the Company nor BTIG shall have any obligation to enter into a Principal Transaction. The terms set forth in a Terms Agreement shall not be binding on the Company or BTIG, unless and until the Company and BTIG have each executed such Terms Agreement accepting all of the terms of such Terms Agreement. Any such Terms Agreement shall specify the number or amount of Shares to be sold by the Company to and purchased by BTIG pursuant thereto, the per share purchase price to be paid to the Company for such Shares (specifying and giving effect to all market price discounts applicable to such Principal Transaction), all other compensation and/or other fees or expenses payable by the Company to or for the benefit of BTIG in connection with such Principal Transaction, the Net Proceeds (as defined below) payable to the Company, the time, date and place of delivery of and payment for such Shares (to the extent the settlement terms for sales of such Shares are intended to differ from those set forth in Section 5 hereof), and the other terms upon which such sale is to occur. A Terms Agreement may also specify certain provisions relating to the reoffering of such Shares by BTIG. Each of the Parties acknowledges and agrees that such Principal Transaction shall be based on compensation that is mutually agreeable to both the Company and BTIG. In the event of a conflict between the terms of this Agreement and the terms of a Terms Agreement, the terms of the Terms Agreement will control. The commitment of BTIG to purchase the Shares as principal pursuant to any Terms Agreement shall be deemed to have been made on the basis of the representations, warranties and agreements of the Company contained in this Agreement and shall be subject to the terms and conditions herein set forth. Each of the Parties acknowledges and agrees that, notwithstanding anything to the contrary contained in this Agreement or any Terms Agreement, BTIG may engage in sales and other transactions in respect of a number of shares of Common Stock equal to the number of Shares deliverable to BTIG pursuant to a Terms Agreement, whether or not BTIG has taken possession of such Shares at the time of such sales or other transactions, and nothing contained in this Agreement or any Terms Agreement shall limit or be deemed to limit BTIG's ability to engage in such sales or other transactions.

3. Sale of Shares by BTIG. On the basis of the representations and warranties herein contained and subject to the terms and conditions herein set forth, upon the Company's issuance of a Placement Notice in an Agency Transaction, and unless the sale of the Shares described therein has been declined, suspended or otherwise terminated in accordance with the terms of this Agreement, BTIG, as sales agent for the Company, will use its commercially reasonable efforts, consistent with its normal trading and sales practices and applicable state and federal laws, rules and regulations and the rules of The Nasdaq Capital Market (the "Exchange"), for the period specified in the Placement Notice to sell such Shares up to the amount specified by the Company in, and otherwise in accordance with the terms of, such Placement Notice. If acting as sales agent in an Agency Transaction, BTIG will provide written confirmation to the Company no later than the opening of the Trading Day (as defined below) next following the Trading Day on which it has made sales of Shares hereunder, setting forth the number of Shares sold on such day, the compensation payable by the Company to BTIG with respect to such sales pursuant to Section 2 (it being hereby acknowledged and agreed that such compensation shall not apply when BTIG acts as principal, in which case such compensation, discounts or other fees shall be set forth in the applicable Terms Agreement), and the Net Proceeds (as defined below) payable to the Company, with an itemization of the deductions made by BTIG (as set forth in Section 5(a)) from the gross proceeds for the Shares that it receives from such sales. BTIG may sell Shares, as sales agent in an Agency Transaction, by any method permitted by law deemed to be an "at-the-market" offering as defined in Rule 415 under the Securities Act, including, without limitation, sales made directly on the Exchange, on any other existing trading market for the Common Stock or to or through a market maker or through an electronic communications network. After consultation with the Company and subject to the terms of a Placement Notice, BTIG may also sell Shares, as sales agent in an Agency Transaction, in privately negotiated transactions. During the term of this Agreement and notwithstanding anything to the contrary herein, BTIG agrees that in no event will it or any of its affiliates engage in any market making, bidding, stabilization or other trading activity with regard to the Common Stock if such activity would be prohibited under Regulation M or other anti-manipulation rules under the Exchange Act. The Company acknowledges and agrees that (i) there can be no assurance that BTIG will be successful in selling Shares in any Agency Transaction hereunder, (ii) BTIG will incur no liability or obligation to the Company or any other person or entity if it does not sell Shares in any Agency Transaction for any reason other than a failure by BTIG to use its commercially reasonable efforts consistent with its normal trading and sales practices to sell such Shares as required under this Section 3, and (iii) BTIG shall be under no obligation to purchase Shares on a principal basis pursuant to this Agreement, except as may otherwise be specifically agreed by each of BTIG and the Company pursuant to a Terms Agreement, and then only to the extent permitted by applicable law and the rules and regulations of the Exchange. For the purposes hereof, "Trading Day" means any day on which Common Stock is purchased and sold on the principal market on which the Common Stock is listed or quoted.

4

4. Suspension of Sales

(a) The Company or BTIG may, upon notice to the other party in writing (including by email correspondence to each of the individual representatives of the other party set forth on Schedule 3, if receipt of such correspondence is actually acknowledged by any of the individuals to whom the notice is sent, other than via auto-reply) or by telephone (confirmed immediately by verifiable facsimile transmission or email correspondence to each of the individual representatives of the other party set forth on Schedule 3) (a "Suspension Notice"), suspend this offering and any sale of Shares in an Agency Transaction for a period of time (a "Suspension Period"); *provided, however*, that such suspension shall not affect or impair either party's obligations with respect to any Shares sold hereunder prior to the receipt of such notice. Each of the Parties agrees that no such notice under this Section 4 shall be effective against the other unless it is made to one of the individuals named on Schedule 3 hereto, as such Schedule may be amended from time to time. During a Suspension Period, the Company shall not issue any Placement Notices and BTIG shall not sell any Shares hereunder. The party that issued a Suspension Notice shall notify the other party in writing of the Trading Day on which the Suspension Period shall expire not later than twenty-four (24) hours prior to such Trading Day. For the avoidance of doubt, while a Suspension Notice is in effect, any obligation under Section 7(m) to (o) with respect to the delivery of certificates, opinions, negative assurances or comfort letters to BTIG shall be waived.

(b) Notwithstanding any other provision of this Agreement or any Terms Agreement, the Company shall not offer or sell, or request the offer or sale of, any Shares and, by notice to BTIG given by telephone (confirmed promptly by verifiable facsimile transmission or email), shall cancel any instructions for the offer or sale of any Shares, and BTIG shall not be obligated to offer or sell any Shares, (i) during any period in which the Company is in possession of material non-public information or (ii) except as expressly provided in Section 4(c) below, at any time from and including the date (each, an "Announcement Date") on which the Company shall issue a press release containing, or shall otherwise publicly announce, its earnings, revenues or other results of operations (each, an "Earnings Announcement") through and including the time that is 24 hours after the time that the Company files (a "Filing Time") a quarterly report on Form 10-Q or an annual report on Form 10-K that includes consolidated financial statements as of and for the same period or periods, as the case may be, covered by such Earnings Announcement.

5

(c) If the Company wishes to offer, sell or deliver Shares at any time during the period from and including an Announcement Date through and including the time that is 24 hours after the corresponding Filing Time, the Company shall, as conditions to the giving or continuation of any Placement Notice with respect to an Agency Transaction or the execution by BTIG of any Terms Agreement with respect to a Principal Transaction, (i) prepare and deliver to BTIG (with a copy to counsel to BTIG) a report on Form 8-K which shall include substantially the same financial and related information as was set forth in the relevant Earnings Announcement (other than any earnings or other projections, similar forward-looking data and officers' quotations) (each, an "Earnings 8-K"), in form and substance reasonably satisfactory to BTIG and its counsel, (ii) provide BTIG with the officer's certificate called for by Section 7(m), dated the date of the Placement Notice for such Agency

Transaction or the Settlement Date of such Principal Transaction, as applicable, which certificate shall be deemed to remain in effect during the applicable period unless withdrawn by the Company, and the opinion of Company Counsel (or Reliance Letter, as applicable) and Comfort Letter called for by Sections 7(n) and 7(o), respectively, dated the date of the Placement Notice for such Agency Transaction or the Settlement Date of such Principal Transaction, as applicable, (iii) afford BTIG the opportunity to conduct a due diligence review in accordance with Section 7(k) hereof and (iv) file such Earnings 8-K with the Commission (so that it is deemed “filed” for purposes of Section 18 of the Exchange Act). The provisions of clause (ii) of Section 4(b) shall not be applicable for the period from and after the time at which the conditions set forth in the immediately preceding sentence shall have been satisfied (or, if later, the time that is 24 hours after the time that the relevant Earnings Announcement was first publicly released) through and including the time that is 24 hours after the Filing Time of the relevant Quarterly Report on Form 10-Q or Annual Report on Form 10-K, as the case may be. For purposes of clarity, the Parties agree that (A) the delivery of any officers’ certificate, opinion of Company Counsel (or Reliance Letter, as applicable) and Comfort Letter pursuant to this Section 4(c) shall not relieve the Company from any of its obligations under this Agreement with respect to any quarterly report on Form 10-Q, annual report on Form 10-K, or report on Form 8-K, as the case may be, including, without limitation, the obligation to deliver the officers’ certificate, opinion of Company Counsel (or Reliance Letter, as applicable) and Comfort Letter called for by Sections 7(m), 7(n) and 7(o), respectively, which Sections shall have independent application, and (B) this Section 4(c) shall in no way affect or limit the operation of the provisions of clause (i) of Section 4(b), which shall have independent application.

6

5. Settlement.

(a) Settlement of Placement Shares. Unless otherwise specified in the applicable Placement Notice or Terms Agreement (as applicable), settlement for sales of Placement Shares will occur on the first (1st) Trading Day following the date on which such sales are made (each, a “**Settlement Date**”). The amount of proceeds to be delivered to the Company on a Settlement Date against receipt of the Placement Shares sold (the “**Net Proceeds**”) will be equal to the aggregate sales price received by BTIG for the Placement Shares, after deduction for (i) BTIG’s commission for such sales payable by the Company pursuant to Section 2 hereof in an Agency Transaction, or BTIG’s compensation, discounts or other fees pursuant to the terms of the applicable Terms Agreement in a Principal Transaction, as applicable, (ii) any other amounts due and payable by the Company to BTIG hereunder and under any Terms Agreement, as applicable, pursuant to Section 7(g) (Expenses) hereof and (iii) any transaction fees imposed by any governmental or self-regulatory organization in respect of such sales.

(b) Delivery of Placement Shares. On or before each Settlement Date, the Company will, or will cause its transfer agent to, issue and electronically transfer the Placement Shares being sold by crediting BTIG’s or its designee’s (provided BTIG shall have given the Company written notice of such designee at least one (1) Trading Day prior to the Settlement Date) account at The Depository Trust Company through its Deposit and Withdrawal at Custodian System or by such other means of delivery as may be mutually agreed upon by the Parties, which Placement Shares in all cases shall be freely tradeable, transferable, registered shares in good deliverable form. On each Settlement Date, BTIG will deliver the related Net Proceeds in same day funds to an account designated by the Company prior to the Settlement Date. The Company agrees that if the Company, or its transfer agent, defaults in its obligation to deliver Placement Shares on a Settlement Date pursuant to the terms of any Agency Transaction or Terms Agreement, in addition to and in no way limiting the rights and obligations set forth in Section 10(a) (Indemnification by the Company), the Company will (i) hold BTIG, its directors, officers, members, partners, employees and agents of BTIG and each person, if any, who (A) controls BTIG within the meaning of Section 15 of the Securities Act or Section 20 of the Exchange Act or (B) is controlled by or is under common control with BTIG (other than the Company and its subsidiaries) (a “**BTIG Affiliate**”), harmless against any loss, claim, damage, or expense (including reasonable legal fees and expenses), as incurred, arising out of or in connection with such default by the Company or its transfer agent (if applicable) and (ii) pay to BTIG any commission or other compensation (including the value of any market price discounts in any applicable Principal Transaction) to which it would otherwise have been entitled absent such default.

7

(c) Limitations on Offering Size. Under no circumstances shall the Company cause or request the offer or sale of any Placement Shares pursuant to this Agreement or any Terms Agreement (i) if, after giving effect to the sale of such Placement Shares, the aggregate number of Placement Shares sold pursuant to this Agreement and all Terms Agreements would exceed the lesser of (A) the Maximum Amount and (B) the number or amount authorized from time to time to be issued and sold under this Agreement by the Company’s board of directors, a duly authorized committee thereof or a duly authorized executive committee, and notified to BTIG in writing, or (ii) at a price lower than the minimum price therefor authorized from time to time by the Company’s board of directors, a duly authorized committee thereof or a duly authorized executive committee, and notified to BTIG in writing. Under no circumstances shall the Company cause or request the offer or sale of any Shares in any Agency Transaction pursuant to this Agreement or cause the offer or sale to BTIG of any Shares in any Principal Transaction pursuant to this Agreement and any Terms Agreement, in each case, at a price lower than the minimum price therefor authorized from time to time by the Company’s board of directors, a duly authorized committee thereof or a duly authorized executive committee, and notified to BTIG in writing. Under no circumstances shall the aggregate number of Placement Shares sold pursuant to this Agreement and all Terms Agreements exceed the Maximum Amount. Notwithstanding anything to the contrary contained herein, the Parties acknowledge and agree that compliance with the limitations set forth in this Section 5(c) on the number or amount of Placement Shares that may be issued and sold under this Agreement and any Terms Agreement shall be the sole responsibility of the Company, and that BTIG shall have no obligation in connection with such compliance.

6. Representations and Warranties of the Company. The Company represents and warrants to, and agrees with, BTIG that as of (i) the date of this Agreement, (ii) each Representation Date (as defined in Section 7(m)) on which a certificate is required to be delivered pursuant to Section 7(m), (iii) the date on which any Placement Notice is delivered by the Company hereunder, (iv) the date on which any Terms Agreement is executed by the Company and BTIG and (v) each time of sale of Shares pursuant to this Agreement or any Terms Agreement (each such time of sale, an “**Applicable Time**”), as the case may be:

(a) Registration Statement and Prospectus. All of the conditions to the use of Form S-3 in connection with the offering and sale of the Shares as contemplated hereby have been satisfied. The Registration Statement meets, and the offering and sale of Shares as contemplated hereby comply with, the requirements of Rule 415(a) (1)(x) under the Securities Act. The Registration Statement was declared effective under the Securities Act by the Commission on August 21, 2024, and any post-effective amendment thereto has also been declared effective or became effective upon filing. The Company has not received from the Commission any notice pursuant to Rule 401(g)(1) under the Securities Act objecting to the use of the shelf registration statement form. No stop order of the Commission preventing or suspending the use of the base prospectus, the Prospectus Supplement or the Prospectus, or the effectiveness of the Registration Statement, has been issued, and no proceedings for such purpose have been instituted or are pending or, to the Company’s knowledge, are contemplated by the Commission. At the time of the initial filing of the Registration Statement, the Company paid the required Commission filing fees relating to the Shares in accordance with Rules 456(a) and 457(o) under the Securities Act. Copies of the Registration Statement, the Prospectus, and any such amendments or supplements and all documents incorporated by reference therein that were filed with the Commission on or prior to the date of this Agreement have been delivered, or are available through EDGAR, to BTIG and its counsel.

8

(b) No Material Misstatement or Omission. At the respective times the Registration Statement and each amendment thereto became effective, at each deemed effective date with respect to BTIG pursuant to Rule 430B(f)(2) under the Securities Act, and at each Settlement Date, as the case may be, the Registration Statement complied, complies and will comply in all material respects with the requirements of the Securities Act (including Rule 415(a)(1)(x) under the Act), and did not and will not contain an untrue statement of a material fact or omit to state a material fact required to be stated therein or necessary to make the statements therein not misleading. The Prospectus, when so filed with the Commission under Rule 424(b) under the Securities Act, complied, complies and will comply in all material respects with the requirements of the Securities Act, and each Prospectus furnished to BTIG for use in connection with the offering of the Shares was identical to the electronically

transmitted copies thereof filed with the Commission pursuant to EDGAR, except to the extent permitted by Regulation S-T. Neither the Prospectus nor any amendments or supplements thereto, at the time the Prospectus or any such amendment or supplement was issued, as of the date hereof, at each Representation Date, and at each Applicable Time, as the case may be, included, includes or will include an untrue statement of a material fact or omitted or will omit to state a material fact necessary in order to make the statements therein, in the light of the circumstances under which they were made, not misleading. The representations and warranties in this subsection shall not apply to statements in or omissions from the Registration Statement, the Prospectus or any amendments or supplements thereto made in reliance upon and in conformity with written information furnished to the Company by BTIG expressly for use therein.

(c) Incorporated Documents. Each Incorporated Document heretofore filed, when it was filed (or, if any amendment with respect to any such document was filed, when such amendment was filed), conformed in all material respects with the requirements of the Exchange Act, and any further Incorporated Documents so filed and incorporated after the date of this Agreement will, when they are filed, conform in all material respects with the requirements of the Exchange Act; no such Incorporated Document when it was filed (or, if an amendment with respect to any such document was filed, when such amendment was filed), contained an untrue statement of a material fact or omitted to state a material fact required to be stated therein or necessary in order to make the statements therein, in the light of the circumstances under which they were made, not misleading; and no such Incorporated Document, when it is filed, will contain an untrue statement of a material fact or will omit to state a material fact required to be stated therein or necessary in order to make the statements therein, in light of the circumstances under which they were made, not misleading.

9

(d) Free Writing Prospectuses. The Company has not distributed and will not distribute any “prospectus” (within the meaning of the Securities Act) or offering material in connection with the offering or sale of the Shares other than the then most recent Prospectus Supplement and any “issuer free writing prospectus” (as defined in Rule 433) reviewed and consented to by BTIG, in each case accompanied by the then most recent base prospectus. Each issuer free writing prospectus (as defined in Rule 433), as of its issue date and as of each Applicable Time, did not, does not and will not include any information that conflicted, conflicts or will conflict with the information contained in the Registration Statement or the Prospectus, including any Incorporated Document deemed to be a part thereof that has not been superseded or modified. The foregoing sentence does not apply to any statements in or omissions from any issuer free writing prospectus made in reliance upon and in conformity with written information furnished to the Company by BTIG expressly for use in such issuer free writing prospectus. The Company is not disqualified, by reason of subsection (f) or (g) of Rule 164 under the Securities Act, from using, in connection with the offer and sale of the Shares, issuer free writing prospectuses pursuant to Rules 164 and 433 under the Securities Act. The Company was not and is not an “ineligible issuer” as defined in Rule 405 under the Securities Act at the times specified in Rules 164 and 433 under the Securities Act in connection with the offering of the Shares. Any issuer free writing prospectus that the Company is required to file pursuant to Rule 433 has been, or will be, timely filed with the Commission in accordance with the requirements of Rule 433. Each issuer free writing prospectus that the Company has filed, or is required to file, pursuant to Rule 433 or that was prepared by or on behalf of or used by the Company complies or will comply in all material respects with the requirements of the Securities Act.

(e) Capitalization. The Company has an authorized and outstanding capitalization as set forth in the Registration Statement and the Prospectus as of the dates referred to therein (subject, in each case, to the issuance of shares of Common Stock under this Agreement or any Terms Agreement, the issuance of shares of Common Stock upon exercise of stock options and warrants disclosed as outstanding in the Registration Statement and the Prospectus and the grant of options under existing stock option plans described in the Registration Statement and the Prospectus and the issuance of shares of Common Stock upon exercise of such options.). All of the issued and outstanding shares of capital stock, including the Common Stock, of the Company have been duly authorized and validly issued and are fully paid and non-assessable, have been issued in compliance, in all material respects, with all federal and state securities laws and were not issued in violation of any preemptive right or similar right. Except as disclosed in the Registration Statement and the Prospectus, there are no outstanding (i) securities or obligations of the Company or any of its Subsidiaries (as defined below) convertible into or exchangeable for any equity interests of the Company or any such Subsidiary, (ii) warrants, rights or options to subscribe for or purchase from the Company or any such Subsidiary any such equity interests or any such convertible or exchangeable securities or obligations or (iii) obligations of the Company or any such Subsidiary to issue any equity interests, any such convertible or exchangeable securities or obligation, or any such warrants, rights or options. The Company’s Common Stock has been registered pursuant to Section 12(b) of the Exchange Act and is authorized for trading on the Exchange, and the Company has taken no action designed to, or likely to have the effect of, terminating the registration of the Common Stock from the Exchange, nor has the Company received any notification that the Commission or the Exchange is contemplating terminating such registration or listing. The Company is in compliance with the currently applicable listing standards of the Exchange. The Company has filed a Notification of Listing of Additional Shares with the Exchange with respect to the Shares.

10

(f) Emerging Growth Company Status. The Company is an “emerging growth company,” as defined in Section 2(a) of the Securities Act (an “**Emerging Growth Company**”).

(g) Organization of the Company. The Company has been duly incorporated and is validly existing as a corporation in good standing under the laws of the State of Nevada, with the corporate power and authority to acquire, own, lease and operate its properties, and to lease the same to others, and to conduct its business as described in the Registration Statement and the Prospectus, to execute and deliver this Agreement and each Terms Agreement and to issue and sell the Shares as contemplated herein and therein; and the Company is in compliance in all respects with the laws, orders, rules, regulations and directives issued or administered by such jurisdictions, except where the failure to be in compliance would not, individually or in the aggregate, have a Material Adverse Effect (as defined below).

(h) Foreign Qualification of the Company. The Company is duly qualified to do business as a foreign corporation and is in good standing in each jurisdiction where the ownership or leasing of its properties or the conduct of its business requires such qualification, except where the failure to be so qualified and in good standing would not, individually or in the aggregate, either (i) have or reasonably be expected to have a material adverse effect on the business, operations, properties, financial condition, results of operations or prospects of the Company and its Subsidiaries, taken as a whole, or (ii) prevent, materially interfere with or materially delay consummation of the transactions contemplated hereby or in any Terms Agreement (the effects described in the foregoing clauses (i) and (ii) being herein referred to as a “**Material Adverse Effect**”).

(i) Subsidiaries. Each subsidiary of the Company (each a “**Subsidiary**” and collectively, the “**Subsidiaries**”) that is a significant subsidiary, as defined in Rule 1-02(w) of Regulation S-X of the Exchange Act (each a “**Significant Subsidiary**” and collectively, the “**Significant Subsidiaries**”), has been duly incorporated or organized and is validly existing as a corporation, limited liability company or limited partnership, as the case may be, in good standing under the laws of the jurisdiction of its incorporation or organization, has corporate power and authority to own, lease and operate its properties and conduct its business as described in the Prospectus and is duly qualified as a foreign corporation, limited liability company or limited partnership, as the case may be, to transact business and is in good standing in each jurisdiction in which such qualification is required, whether by reason of the ownership or leasing of property or the conduct of business, except where the failure to so qualify would not have a Material Adverse Effect. All of the issued and outstanding capital stock of, or other ownership interests in, each such Significant Subsidiary has been duly authorized and validly issued, is fully paid and non-assessable and, except for directors’ qualifying shares, is owned by the Company, directly or through subsidiaries, free and clear of any security interest, mortgage, pledge, lien, encumbrance, claim or equity; and attached hereto as **Schedule 4** is an accurate and complete list of the Significant Subsidiaries. At the date of filing with the Commission, the Company did not have any Significant Subsidiary not listed on Exhibit 21 to the Company’s most recent Annual Report on Form 10-K which was required to be so listed.

11

(j) Validity of Shares. The Shares have been duly and validly authorized and, when issued and delivered against payment therefor as provided herein, will be duly and validly issued, fully paid and non-assessable and free of preemptive rights and similar rights. No further approval or authority of the stockholders or the Board of Directors of the Company are required for the issuance and sale of the Shares.

(k) Description of Shares. The capital stock of the Company, including the Shares, conforms in all material respects to the description thereof contained in or incorporated by reference in the Registration Statement and the Prospectus, and the certificates for the Shares are in due and proper form and the holders of the Shares will not be subject to personal liability solely by reason of being such holders.

(l) Authorization. This Agreement and each Terms Agreement has been, or in the case of each Terms Agreement, will be at the time such Terms Agreement is entered into, duly authorized, executed and delivered by the Company and constitutes a valid and legally binding obligation of the Company, enforceable against the Company in accordance with its terms, except as enforceability may be limited by bankruptcy, insolvency, fraudulent conveyance, reorganization, moratorium and other similar laws relating to or affecting creditors' rights generally and by general principles of equity. This Agreement and each Terms Agreement conforms in all material respects to the descriptions thereof in the Registration Statement and the Prospectus.

(m) Absence of Defaults and Conflicts. Neither the Company nor any Significant Subsidiary is (i) in breach or violation of its certificate or articles of incorporation, charter, bylaws, limited liability company agreement, certificate or agreement of limited or general partnership, memorandum and articles of association, or other similar organizational documents, as the case may be, of such entity, (ii) in breach of or in default (or, with the giving of notice or lapse of time or both, would be in default) ("**Default**") under any indenture, mortgage, loan or credit agreement, deed of trust, note, contract, franchise, lease or other agreement, obligation, condition, covenant or instrument to which the Company or any of its Significant Subsidiaries is a party or by which it or any of them may be bound or to which any of the property or assets of the Company or any of its Significant Subsidiaries is subject (each, an "**Existing Instrument**"), or (iii) in violation of any statute, law, rule, regulation, judgment, order or decree of any court, regulatory body, administrative agency, governmental body, arbitrator or other authority having jurisdiction over the Company or any of its Significant Subsidiaries or any of their properties, as applicable, except, with respect to clauses (ii) and (iii) only, for such breaches, violations or Defaults that would not, individually or in the aggregate, have a Material Adverse Effect. The Company's execution, delivery and performance of this Agreement and each Terms Agreement and consummation of the transactions contemplated hereby or thereby or by the Registration Statement and the Prospectus (including the issuance and sale of the Shares and the use of the proceeds from the sale of the Shares as described in the Prospectus under the caption "Use of Proceeds") (i) have, with respect to this Agreement, been duly authorized by all necessary corporate action, and will not result in any breach or violation of the certificate or articles of incorporation, charter, bylaws, limited liability company agreement, certificate or agreement of limited or general partnership, memorandum and articles of association, or other similar organizational documents, as the case may be, of the Company or any of its Significant Subsidiaries, (ii) will not conflict with or constitute a breach of, or Default or a Debt Repayment Triggering Event (as defined below) under, or result in the creation or imposition of any lien, charge, claim or encumbrance upon any property or assets of the Company or any of its Significant Subsidiaries pursuant to, or require the consent of any other party to, any Existing Instrument, and (iii) will not result in any violation of any statute, law, rule, regulation, judgment, order or decree applicable to the Company or any of its Significant Subsidiaries of any court, regulatory body, administrative agency, governmental body, arbitrator or other authority having jurisdiction over the Company or any of its Significant Subsidiaries or any of its or their properties, as applicable, except, with respect to clauses (ii) and (iii) only, for such conflicts, breaches, Defaults, Debt Repayment Triggering Events or violations that would not, individually or in the aggregate, have a Material Adverse Effect. As used herein, a "**Debt Repayment Triggering Event**" means any event or condition which gives, or with the giving of notice or lapse of time or both would give, the holder of any note, debenture or other evidence of indebtedness (or any person acting on such holder's behalf), issued by the Company, the right to require the repurchase, redemption or repayment of all or a portion of such indebtedness by the Company or any of its Significant Subsidiaries.

12

(n) Absence of Further Requirements. No consent, approval, license, permit, qualification, authorization or other order or decree of, or registration or filing with, any court or other governmental or regulatory authority or agency is required for the Company's execution, delivery and performance of this Agreement and each Terms Agreement or consummation of the transactions contemplated hereby or thereby or by the Registration Statement and the Prospectus (including the issuance and sale of the Shares hereunder or under any Terms Agreement), except such as have been already obtained or made or as may be required under the Securities Act, applicable state securities or Blue Sky laws, the rules of the Exchange, or the rules and regulations of the Financial Industry Regulatory Authority, Inc. ("**FINRA**").

(o) No Preferential Rights; No Commissions. Except as set forth in the Registration Statement and the Prospectus, (i) no person (as such term is defined in Rule 1-02 of Regulation S-X promulgated under the Securities Act) has the right, contractual or otherwise, to cause the Company to issue or sell to such person any Common Stock or shares of any other capital stock or other securities of the Company, (ii) no person (as such term is defined in Rule 1-02 of Regulation S-X promulgated under the Securities Act) has any preemptive rights, resale rights, rights of first refusal, or any other rights (whether pursuant to a "poison pill" provision or otherwise) to purchase any Common Stock or shares of any other capital stock or other securities of the Company, (iii) no person (as such term is defined in Rule 1-02 of Regulation S-X promulgated under the Securities Act) has the right to act as an underwriter or as a financial advisor to the Company in connection with the offer and sale of the Shares hereunder or under any Terms Agreement, whether as a result of the filing or effectiveness of the Registration Statement or the sale of the Shares as contemplated thereby or otherwise, and (iv) no person (as such term is defined in Rule 1-02 of Regulation S-X promulgated under the Securities Act) has the right, contractual or otherwise, to cause the Company to register under the Securities Act any shares of Common Stock or shares of any other capital stock or other securities of the Company, or to include any such shares or other securities in the Registration Statement or the offering contemplated thereby. Neither the Company nor any of its Subsidiaries is a party to any contract, agreement or understanding with any person (other than as contemplated by this Agreement or any Terms Agreement) that would give rise to a valid claim against the Company or any of its Subsidiaries or BTIG for a brokerage commission, finder's fee or like payment in connection with the offering and sale of the Shares by BTIG under this Agreement or any Terms Agreement.

13

(p) Intellectual Property. Except as set forth in the Registration Statement and the Prospectus, the Company or its Significant Subsidiaries own or possess a valid right to use all material patents, trademarks, service marks, trade names, copyrights, patentable inventions, trade secrets, know-how and other intellectual property (collectively, the "**Intellectual Property**") used by the Company or its Significant Subsidiaries in, and material to, the conduct of the Company's or its Significant Subsidiaries' business as now conducted or as proposed in the Registration Statement and the Prospectus to be conducted. Except as set forth in the Registration Statement and the Prospectus, there is no material infringement by third parties of any of the Intellectual Property and there are no legal or governmental actions, suits, proceedings or claims pending or, to the Company's knowledge, threatened, against the Company (i) challenging the Company's rights in or to any Intellectual Property, (ii) challenging the validity or scope of any Intellectual Property owned by the Company, or (iii) alleging that the operation of the Company's business as now conducted infringes or otherwise violates any patent, trademark, copyright, trade secret or other proprietary rights of a third party, where any such action, suit, proceeding or claim would, individually or in the aggregate, have a Material Adverse Effect.

(q) Possession of Licenses and Permits. Each of the Company and its Significant Subsidiaries has all necessary licenses, authorizations, consents and approvals and has made all necessary filings required under any federal, state, local or foreign law, regulation or rule, and has obtained all necessary licenses, certificates, authorizations, orders, permits, consents and approvals from other persons, in order to acquire and own, lease or sublease, lease to others and conduct its respective business as described in the Registration Statement or Prospectus, except where the failure to have or obtain such licenses, permits, authorizations, consents and approvals and to make such filings would not, individually or in the aggregate, have a Material Adverse Effect. All of such license, permit, authorization, consent or approval are valid and in full force and effect, except where the invalidity of such license, permit, authorization, consent or approval to be in full force and effect would not have a Material Adverse Effect. Neither the Company nor any of its Significant Subsidiaries is in violation of, or in default under, or has received notice of any proceedings relating to revocation or modification of, any such license, permit, authorization, consent or approval (or has any reason to believe that any such license, permit, authorization, consent or approval will not be renewed in the ordinary course) or any federal, state, local or foreign law, regulation or rule or any decree, order or

(r) Contracts and Agreements. There are no contracts, agreements, instruments or other documents that are required to be described in the Registration Statement or the Prospectus or any Incorporated Documents or to be filed as exhibits thereto which have not been so described in all material respects and filed as required by Item 601(b) of Regulation S-K under the Securities Act. The copies of all contracts, agreements, instruments and other documents (including governmental licenses, authorizations, permits, consents and approvals and all amendments or waivers relating to any of the foregoing) that have been furnished to BTIG or its counsel are complete and genuine and include all material collateral and supplemental agreements thereto. All contracts and agreements between the Company and third parties expressly referenced in the Registration Statement or the Prospectus are legal, valid and binding obligations of the Company, enforceable against the Company in accordance with their respective terms, except as enforceability may be limited by bankruptcy, insolvency, fraudulent conveyance, reorganization, moratorium and other similar laws relating to or affecting creditors' rights generally and by general principles of equity.

(s) Absence of Proceedings. Except as disclosed in the Registration Statement and Prospectus, there are no actions, suits, claims, investigations or proceedings pending or, to the Company's knowledge, threatened to which the Company or any of the Subsidiaries is or would be a party, or of which any of the respective properties or assets of the Company and the Subsidiaries is or would be subject, at law or in equity, before any court or arbitral body or by or before any federal, state, local or foreign governmental or regulatory commission, board, body, authority or agency, which are required to be disclosed in the Registration Statement or Prospectus, or which would reasonably be expected to result in a judgment, decree or order having, individually or in the aggregate, a Material Adverse Effect, or which is reasonably likely to materially and adversely affect the respective properties or assets of the Company or any of its Subsidiaries. The aggregate of all pending legal or governmental proceedings to which the Company or any Subsidiary is a party or of which any of their respective properties or assets is the subject which are not described in the Registration Statement and Prospectus, including ordinary routine litigation incidental to the business of the Company, would not, individually or in the aggregate, result in a Material Adverse Effect.

(t) Independent Accountants. M&K CPAs, PLLC, whose report on the consolidated financial statements of the Company and the Subsidiaries is incorporated by reference in the Registration Statement and the Prospectus, is an independent registered public accounting firm with respect to the Company as required by the Securities Act, the Exchange Act and the Public Company Accounting Oversight Board (United States) (the "PCAOB"). M&K CPAs, PLLC has not been engaged by the Company to perform any "prohibited activities" (as defined in Section 10A of the Exchange Act).

(u) Financial Statements. The financial statements included or incorporated by reference in the Registration Statement and the Prospectus, together with the related notes and schedules, present fairly the consolidated financial position of the Company and the Subsidiaries as of the dates indicated and the consolidated results of operations and cash flows of the Company and the Subsidiaries for the periods specified and have been prepared in compliance with the requirements of the Securities Act and Exchange Act and in conformity with United States generally accepted accounting principles ("GAAP") applied on a consistent basis during the periods involved. The summary financial information included in the Registration Statement and the Prospectus present fairly the information shown therein and have been compiled on a basis consistent with that of the financial statements included or incorporated by reference in the Registration Statement and the Prospectus, as of and at the dates indicated. Any *pro forma* financial statements or data included or incorporated by reference in the Registration Statement and the Prospectus comply with the requirements of Regulation S-X of the Securities Act, including, without limitation, Article 11 thereof, and the assumptions used in the preparation of such *pro forma* financial statements and data are reasonable, the *pro forma* adjustments used therein are appropriate to give effect to the circumstances referred to therein and the *pro forma* adjustments have been properly applied to the historical amounts in the compilation of those statements and data. The other financial data set forth or incorporated by reference in the Registration Statement and the Prospectus is accurately presented and prepared on a basis consistent with the financial statements and books and records of the Company. The Company and the Subsidiaries do not have any material liabilities or obligations, direct or contingent (including any off-balance sheet obligations or any "variable interest entities" as that term is used in Accounting Standards Codification Paragraph 810-10-25-20), not disclosed in the Registration Statement and the Prospectus. All disclosures contained in the Registration Statement or the Prospectus, including the Incorporated Documents, that contain "non-GAAP financial measures" (as such term is defined by the rules and regulations of the Commission) comply, in all material respects, with Regulation G under the Exchange Act and Item 10 of Regulation S-K under the Securities Act, to the extent applicable.

(v) No Material Adverse Change in Business. Subsequent to the respective dates as of which information is given in the Registration Statement and the Prospectus, there has not been (i) any material adverse change in the business, operations, properties, financial condition, results of operations or prospects of the Company and its Subsidiaries, taken as a whole, (ii) any transaction, other than in the ordinary course, which is material to the Company and the Subsidiaries, taken as a whole, (iii) any obligation, direct or contingent (including any off-balance sheet obligations), incurred by the Company or any Subsidiary, which is material to the Company and the Subsidiaries, taken as a whole, (iv) any change in the authorized capital stock of the Company, or (v) any dividend or distribution of any kind declared, paid or made on the capital stock of the Company.

(w) Investment Company Act. The Company is not, and after receipt of payment for the Shares and the application of the proceeds thereof as contemplated under the caption "Use of Proceeds" in the Registration Statement and the Prospectus will not be, required to be registered as an "investment company" under the Investment Company Act of 1940, as amended, and the rules and regulations promulgated thereunder (collectively, the "Investment Company Act").

(x) Property. Except as set forth in the Registration Statement and the Prospectus, the Company and each of its Significant Subsidiaries have good and marketable title to all of the properties and assets reflected as owned in the financial statements referred to in Section 6(t) above (or elsewhere in the Registration Statement and the Prospectus), in each case free and clear of any security interests, mortgages, liens, encumbrances, equities, claims and other defects, except such as do not materially and adversely affect the value of such property or assets and do not materially interfere with the use made or proposed to be made of such property by the Company or any Significant Subsidiary. The material real property, improvements, equipment and personal property held under lease by the Company or any of its Significant Subsidiaries are held under valid and enforceable leases, with such exceptions as are not material and do not materially interfere with the use made or proposed to be made of such real property, improvements, equipment or personal property by the Company or such Significant Subsidiary. The Company and each of its Subsidiaries have such consents, easements, rights-of-way or licenses from any person ("rights-of-way") as are necessary to enable the Company and each of its Subsidiaries to conduct its business in the manner described in the Registration Statement and the Prospectus, and except for such rights-of-way the lack of which would not have, individually or in the aggregate, a Material Adverse Effect.

(y) Environmental Laws. Except as otherwise disclosed in the Registration Statement and Prospectus, neither the Company nor any of its Subsidiaries has been in material violation of, in connection with the ownership, use, maintenance or operation of its properties and assets, any applicable federal, state, municipal, local or foreign laws, rules, regulations, decisions, orders, policies, permits, licenses, certificates or approvals having force of law, domestic or foreign, relating to environmental, health, or safety matters or hazardous or toxic substances or wastes, pollutants or contaminants (collectively, "Environmental Laws"). Without limiting the generality of the foregoing and except as otherwise described in the Registration Statement and Prospectus: (i) the Company and each of its Subsidiaries has occupied its properties and has received, handled, used, stored, treated, shipped and disposed of all pollutants, contaminants, hazardous or toxic materials, controlled or dangerous substances or wastes in compliance with all applicable Environmental Laws to conduct their respective businesses; (ii) neither the Company nor any of its Subsidiaries is aware of any unlawful spills, releases, discharges or disposal of any pollutants, contaminants, hazardous or toxic materials, controlled or dangerous substances or wastes that have

occurred or are presently occurring on or from its properties as a result of any construction on or operation and use of its properties, (iii) there are no orders, rulings or directives issued against the Company or any of its Subsidiaries, and there are no orders, rulings or directives pending or, to the knowledge of the Company, threatened against the Company or any of its Subsidiaries under or pursuant to any Environmental Laws requiring any work, repairs, construction or capital expenditures with respect to any properties or assets of the Company or any of its Subsidiaries; and (iv) no notice with respect to any of the matters referred to in this Section 6(x), including any alleged violations by the Company or any of the Subsidiaries with respect thereto has been received by the Company or any of its Subsidiaries, and no writ, injunction, order or judgment is outstanding, and no legal proceeding under or pursuant to any Environmental Laws or relating to the ownership, use, maintenance or operation of the properties and assets of the Company or any of its Subsidiaries is in progress, pending or threatened, which could reasonably be expected to have a Material Adverse Effect, and to the knowledge of the Company, there are no grounds or conditions which exist, on or under any property now or previously owned, operated or leased by the Company or any of its Subsidiaries, on which any such legal proceeding might be commenced with any reasonable likelihood of success or with the passage of time, or the giving of notice or both, would give rise thereto.

17

(z) Insurance. The Company and its Subsidiaries carry or are entitled to the benefits of insurance in such amounts and covering such risks as the Company reasonably deems adequate, and all such insurance is in full force and effect. The Company has no reason to believe that it or any Subsidiary will not be able (i) to renew its existing insurance coverage as and when such policies expire or (ii) to obtain comparable coverage from similar institutions as may be necessary or appropriate to conduct its business as now conducted and at a cost that would not result in a Material Adverse Effect. Neither the Company nor any Subsidiary has been denied any material insurance coverage which it has sought or for which it has applied.

(aa) Accounting Controls and Disclosure Controls. The Company and each of its Subsidiaries maintain a system of internal accounting controls sufficient to provide reasonable assurances that (i) transactions are executed in accordance with management's general or specific authorization; (ii) transactions are recorded as necessary to permit preparation of financial statements in conformity with GAAP and to maintain accountability for assets; (iii) receipts and expenditures are being made only in accordance with management's general or specific authorization; (iv) access to assets is permitted only in accordance with management's general or specific authorization; and (v) the recorded accountability for assets is compared with the existing assets at reasonable intervals and appropriate action is taken with respect to any differences. Except as described in the Registration Statement and the Prospectus, since the end of the Company's most recent audited fiscal year, there has been (A) no material weakness in the Company's internal control over financial reporting (whether or not remediated) and (B) no change in the Company's internal control over financial reporting that has materially affected, or is reasonably likely to materially affect, the Company's internal control over financial reporting. Except as described in the Registration Statement and the Prospectus, the Company and its Subsidiaries, considered as one enterprise, have established and currently maintain disclosure controls and procedures that comply with Rule 13a-15 under the Exchange Act, and the Company has determined that such disclosure controls and procedures are effective in compliance with Rule 13a-15 under the Exchange Act.

(bb) Compliance with the Sarbanes-Oxley Act. There is and has been no failure on the part of the Company or any of the Company's directors or officers, in their capacities as such, to comply in all material respects with any applicable provision of the Sarbanes-Oxley Act of 2002 and the rules and regulations promulgated in connection therewith (the "Sarbanes-Oxley Act"), including Section 402 related to loans and Sections 302 and 906 related to certifications.

18

(cc) Payment of Taxes. All tax returns of the Company and its Subsidiaries required by law to be filed have been filed and all taxes shown by such returns or otherwise assessed, which are due and payable, have been paid (except as otherwise would have a Material Adverse Effect), except assessments against which appeals have been or will be promptly taken and as to which adequate reserves have been provided. The charges, accruals and reserves on the books of the Company in respect of any income and corporation tax liability for any years not finally determined are adequate to meet any assessments or re-assessments for additional income tax for any years not finally determined, except to the extent of any inadequacy that would not result in a Material Adverse Effect.

(dd) Stock Transfer Taxes. On each Settlement Date, all stock transfer or other taxes (other than income taxes) which are required to be paid in connection with the sale and transfer of the Shares to be sold hereunder and under any Terms Agreement, as applicable, will be, or will have been, fully paid or provided for by the Company and all laws imposing such taxes will be or will have been fully complied with.

(ee) Statistical and Market-Related Data. The statistical and market-related data included or incorporated by reference in the Registration Statement and the Prospectus are based on or derived from sources that the Company believes to be reliable and accurate, and the Company has obtained the written consent to the use of such data from such sources to the extent required.

(ff) FDA Compliance. The Company and each of its Subsidiaries has all consents, approvals, authorizations, orders, registrations, qualifications, licenses, filings, grants, certificates and permits of, with and from all judicial, regulatory and other legal or governmental agencies, self-regulatory agencies, authorities and bodies and all third parties, foreign and domestic, including, without limitation, the U.S. Food and Drug Administration (the "FDA") or equivalent in non-U.S. jurisdictions (collectively, the "Consents"), to own, lease and operate its properties and conduct its business as it is now being conducted and as disclosed in the Registration Statement and the Prospectus, and each such Consent is valid and in full force and effect, except which (individually or in the aggregate), in each such case, would not reasonably be expected to have a Material Adverse Effect. Neither the Company nor any of its Subsidiaries has received notice of any investigation or proceedings which results in or, if decided adversely to the Company or such Subsidiary, could reasonably be expected to result in, the revocation of, or imposition of a restriction on, any Consent, except such restriction or revocation of such Consent which (individually or in the aggregate) would not reasonably be expected to have a Material Adverse Effect. No Consent contains any material restriction.

(gg) Clinical Studies. The clinical, pre-clinical and other studies and tests conducted by or, to the knowledge of the Company, on behalf of the Company were, and, if still pending, are being, conducted in accordance in all material respects with all statutes, laws, rules and regulations, as applicable (including, without limitation, the FDA's Good Laboratory Practices and Good Clinical Practices as well as all other applicable rules, regulations, or requirements of the FDA or any foreign, federal, state or local governmental or regulatory authority performing functions similar to those performed by the FDA). Except as set forth in the Registration Statement and Prospectus, the Company has not received any written notices or other written correspondence from the FDA or any other foreign, federal, state or local governmental or regulatory authority performing functions similar to those performed by the FDA requiring the Company to terminate or suspend any ongoing clinical or pre-clinical studies or tests. Except as set forth in the Registration Statement and Prospectus, the Company has not received any 483 or other adverse finding from the FDA or any other regulator with respect to any clinical site, clinical trial protocol, or clinical investigator.

19

(hh) FDA Filings. Except as would not result in a Material Adverse Effect, the Company (including its Subsidiaries) has not failed to file with the applicable regulatory authorities (including the FDA or any foreign, federal, state or local governmental or regulatory authority performing functions similar to those performed by the FDA and having jurisdiction over the Company) any filing, declaration, listing, registration, report or submission that is required to be so filed for the Company's business operation as currently conducted. All such filings were in material compliance with applicable laws when filed and no material deficiencies have been asserted in writing by any applicable regulatory authority (including, without limitation, the FDA or any foreign, federal, state or local governmental or regulatory authority performing functions similar to those performed by the FDA) with respect to any such filings, declarations, listings, registrations, reports or submissions.

(ii) Foreign Corrupt Practices Act. None of the Company, any Subsidiary or, to the knowledge of the Company, any director, officer, agent, employee, affiliate

or other person acting on behalf of the Company or any of its Subsidiaries, is aware of or has taken any action, directly or indirectly, that would result in a violation by such persons of the Foreign Corrupt Practices Act of 1977, as amended, and the rules and regulations thereunder (collectively, the “**FCPA**”), including, without limitation, making use of the mails or any means or instrumentality of interstate commerce corruptly in furtherance of an offer, payment, promise to pay or authorization of the payment of any money, or other property, gift, promise to give, or authorization of the giving of anything of value to any “foreign official” (as such term is defined in the FCPA) or any foreign political party or official thereof or any candidate for foreign political office, in contravention of the FCPA. The Company and the Subsidiaries have conducted their respective businesses in compliance with the FCPA and have instituted and maintain policies and procedures designed to ensure, and which are reasonably expected to continue to ensure, continued compliance therewith. The Company will not directly or indirectly use the proceeds of the offering, or lend, contribute or otherwise make available such proceeds to any subsidiary, joint venture partner or other person or entity, for the purpose of financing the activities of any person in violation of the FCPA.

(jj) **Money Laundering Laws.** The operations of the Company and its Subsidiaries are and have been conducted at all times in compliance with applicable financial recordkeeping and reporting requirements of the Currency and Foreign Transactions Reporting Act of 1970, as amended, the money laundering statutes of all jurisdictions, the rules and regulations thereunder and any related or similar rules, regulations or guidelines, issued, administered or enforced by any governmental agency (collectively, the “**Money Laundering Laws**”) and no action, suit or proceeding by or before any court or governmental agency, authority or body or any arbitrator involving the Company or any of its Subsidiaries with respect to the Money Laundering Laws is pending or, to the knowledge of the Company, threatened.

20

(kk) **OFAC.** None of the Company, any Subsidiary or, to the knowledge of the Company, any director, officer, agent, employee, affiliate or person acting on behalf of the Company or any of its Subsidiaries is currently subject to any U.S. sanctions administered by the Office of Foreign Assets Control of the U.S. Treasury Department (“**OFAC**”); and the Company will not directly or indirectly use the proceeds of the offering, or lend, contribute or otherwise make available such proceeds to any subsidiary, joint venture partner or other person or entity, for the purpose of financing the activities of any person currently subject to any U.S. sanctions administered by OFAC.

(ll) **No Conflicts with Sanction Laws.** Neither the Company nor any of its subsidiaries nor any director, officer of the Company or its subsidiaries, nor, to the knowledge of the Company, any employee, agent or affiliate or other person acting on behalf of the Company or its subsidiaries, in each case acting on behalf of the Company or any of its subsidiaries, is currently the subject or the target of any sanctions administered or enforced by the U.S. Government, (including, without limitation, the Office of Foreign Assets Control of the U.S. Treasury Department or the U.S. Department of State and including, without limitation, the designation as a “specially designated national” or “blocked person”), the United Nations Security Council, the European Union, His Majesty’s Treasury, or other relevant sanctions authority (collectively, “**Sanctions**”), nor is the Company, or any of its subsidiaries located, organized or resident in a country or territory that is the subject or the target of comprehensive Sanctions, including, without limitation, the Crimea, Zaporizhzhia and Kherson Regions of Ukraine, the so-called Donetsk People’s Republic, the so-called Luhansk People’s Republic, Cuba, Iran, North Korea and Syria (each, a “**Sanctioned Country**”); and the Company will not directly or indirectly use any of the proceeds of the offering, or lend, contribute or otherwise make available such proceeds to any subsidiary, joint venture partner or other person or entity (i) to fund or facilitate any activities of or business with any person that, at the time of such funding or facilitation, is the subject or the target of any Sanctions, (ii) to fund or facilitate any activities of or any business in any Sanctioned Country or (iii) in any other manner that will result in a violation by any person (including any person participating in the transaction, whether as underwriter, advisor, investor or otherwise) of any applicable Sanctions. For the past five years, the Company and its subsidiaries have not knowingly engaged in and are not now knowingly engaged in any prohibited dealings or transactions with any person that at the time of the dealing or transaction is or was the subject or the target of any Sanctions or with any Sanctioned Country.

(mm) **Related Party Transactions.** No relationship, direct or indirect, exists between or among the Company or any of its Subsidiaries on the one hand, and the directors, officers, trustees, managers, stockholders, partners, customers or suppliers of the Company or any of the Subsidiaries on the other hand, which would be required by the Securities Act to be disclosed in the Registration Statement and the Prospectus, which is not so disclosed.

21

(nn) **ERISA.** (i) The Company and its Significant Subsidiaries and any “employee benefit plan” (as defined in Section 3(3) of the Employee Retirement Income Security Act of 1974, as amended, and the regulations and published interpretations thereunder (collectively, “**ERISA**”)) established or maintained by the Company, its Significant Subsidiaries or their ERISA Affiliates (as defined below) are in compliance in all material respects with ERISA and the Code; (ii) no “reportable event” (as defined under ERISA), other than an event for which the reporting requirement has been waived under regulations issued by the Pension Benefit Guaranty Corporation, has occurred with respect to any pension plan subject to Title IV of ERISA that is established or maintained by the Company, its Significant Subsidiaries or any of their ERISA Affiliates (“**Pension Plan**”); (iii) no Pension Plan’s benefit liabilities under Section 4001(a)(16) of ERISA exceed the current value of that Pension Plan’s assets, all as determined as of the most recent valuation date for the Pension Plan in accordance with the assumptions used for funding the Pension Plan pursuant to Section 412 of ERISA; (iv) none of the Company, its Significant Subsidiaries or any of their ERISA Affiliates has incurred or reasonably expects to incur any liability under (A) Title IV of ERISA with respect to termination of, or withdrawal from, any “employee benefit plan,” (B) Sections 4971 or 4975 of the Code, (C) Section 412 of the Code as a result of a failure to satisfy the minimum funding standard, or (D) Section 4980B of the Code with respect to the excise tax imposed thereunder; and (v) each “employee benefit plan” established or maintained by the Company, its Significant Subsidiaries or any of their ERISA Affiliates that is intended to be qualified under Section 401(a) of the Code has received a favorable determination letter from the Internal Revenue Service and nothing has occurred, whether by action or failure to act, which is reasonably likely to cause disqualification of any such employee benefit plan under Section 401(a) of the Code, except in the case of each of clauses (i) through (v), which would not have a Material Adverse Effect. “**ERISA Affiliate**” means, with respect to the Company or a Significant Subsidiary, any member of any group of organizations described in Section 414(b), (c), (m) or (o) of the Code, of which the Company or such Significant Subsidiary is a member.

(oo) **Labor Disputes.** No labor disturbance by or dispute with employees of the Company or any of its Subsidiaries exists or, to the knowledge of the Company, is threatened which would reasonably be expected to result in a Material Adverse Effect. None of the employees of the Company or any of its Subsidiaries is represented by a union and, to the knowledge of the Company, no union organizing activities are taking place. Neither the Company nor any of its Subsidiaries has violated any federal, state or local law or foreign law relating to the discrimination in hiring, promotion or pay of employees, nor any applicable wage or hour laws, or the rules and regulations thereunder, or analogous foreign laws and regulations, which might, individually or in the aggregate, result in a Material Adverse Effect.

22

(pp) **Market Capitalization.** As of the close of trading on the Exchange on the Trading Day immediately prior to the date of this Agreement, the aggregate market value of the outstanding voting and non-voting common equity (as defined in Securities Act Rule 405) of the Company held by persons other than affiliates of the Company (within the meaning of Securities Act Rule 144) (the “**Non-Affiliate Shares**”), was approximately \$18.7 million (calculated by multiplying (x) the highest price at which the common equity of the Company was last sold on the Exchange on a Trading Day within 60 days prior to the date of this Agreement times (y) the number of Non-Affiliate Shares). For as long as the Company is subject to General Instruction I.B.6. of Form S-3 during the term of this Agreement, the aggregate market value of all securities sold by or on behalf of the Company pursuant to and in reliance on General Instruction I.B.6. of Form S-3 during the period of 12 calendar months immediately prior to, and including, any offering of Shares pursuant to this Agreement or any Terms Agreement pursuant to and in reliance on General Instruction I.B.6. of Form S-3 shall not be more than one-third of the aggregate market value of the Non-Affiliate Shares, calculated in accordance with Instructions 1 and 2 to General Instruction I.B.6 of Form S-3. The Company is not a shell company (as defined in Rule 405 under the Securities Act) and has not been a shell company for at least 12 calendar months previously and if it has been a shell company at any time previously, has filed current “Form 10 information” (as defined in Instruction 4 to General Instruction I.B.6. of Form S-3) with the Commission at least 12 calendar months previously reflecting its status as an entity that is not a shell company.

(qq) No Material Defaults. Neither the Company nor any of the Subsidiaries has defaulted on any installment on indebtedness for borrowed money or on any rental on one or more long-term leases, which defaults, individually or in the aggregate, could reasonably be expected to have a Material Adverse Effect. The Company has not filed a report pursuant to Section 13(a) or 15(d) of the Exchange Act since the filing of its last Annual Report on Form 10-K, indicating that it (i) has failed to pay any dividend or sinking fund installment on preferred stock or (ii) has defaulted on any installment on indebtedness for borrowed money or on any rental on one or more long-term leases, which defaults, individually or in the aggregate, could reasonably be expected to have a Material Adverse Effect.

(rr) Absence of Manipulation. Neither the Company, nor any of its Subsidiaries, nor any of its or their respective directors, officers or, to the knowledge of the Company, controlling persons has taken, directly or indirectly, any action designed to stabilize or manipulate, or which has constituted or might reasonably be expected to cause or result in, the stabilization or manipulation of, the price of any security of the Company to facilitate the sale or resale of the Shares.

(ss) Director Independence. Each of the independent directors (or independent director nominees, once appointed, if applicable) named in the Registration Statement and Prospectus satisfies the independence standards established by the Exchange and, with respect to members of the Company's audit committee, the enhanced independence standards contained in Rule 10A-3(b)(1) promulgated by the Commission under the Exchange Act.

(tt) Broker-Dealer Status; FINRA Matters. The Company is not required to register as a "broker" or "dealer" in accordance with the provisions of the Exchange Act and does not, directly or indirectly through one or more intermediaries, control or have any other association with (within the meaning of Article I of the By-laws of FINRA) any member firm of FINRA. No relationship, direct or indirect, exists between or among the Company, on the one hand, and the directors, officers or stockholders of the Company, on the other hand, which is required by the rules of FINRA to be described in the Registration Statement and the Prospectus, which is not so described. The offering of the Shares pursuant to this Agreement and each Terms Agreement qualifies for the exemption from the filing requirements of FINRA Rule 5110 afforded by FINRA Rule 5110(h)(1)(C).

23

(uu) Margin Rules. Neither the issuance, sale and delivery of the Shares nor the application of the proceeds thereof by the Company as described in the Registration Statement and the Prospectus will violate Regulation T, U or X of the Board of Governors of the Federal Reserve System or any other regulation of such Board of Governors.

(vv) Cybersecurity. There has been no security breach or incident, unauthorized access or disclosure, or other compromise of or relating to any of the Company's and its subsidiaries' information technology and computer systems, networks, hardware, software, data and databases (including the data and information of their respective customers, employees, suppliers, vendors and any third party data maintained, processed or stored by the Company and its subsidiaries, and any such data processed or stored by third parties on behalf of the Company and its subsidiaries), equipment or technology (collectively, "IT Systems and Data") and the Company and its subsidiaries have not been notified of, and have no knowledge of any such event or condition that would reasonably be expected to result in, any security breach or incident, unauthorized access or disclosure or other compromise to their IT Systems and Data, except in each case, for any breach, incident, access, compromise, event or condition that would not reasonably be expected individually or in the aggregate, to result in a Material Adverse Effect. The Company and its subsidiaries are presently in material compliance with all applicable laws or statutes and all judgments, orders, rules and regulations of any court or arbitrator or governmental or regulatory authority, internal policies and contractual obligations relating to the privacy and security of IT Systems and Data and to the protection of such IT Systems and Data from unauthorized use, access, misappropriation or modification, except for any failure to comply that would not reasonably be expected, individually or in the aggregate, to result in a Material Adverse Effect. The Company and its subsidiaries have implemented appropriate controls, policies, procedures, and technological safeguards designed to maintain and protect the integrity, continuous operation, redundancy and security of their IT Systems and Data reasonably consistent with industry standards and practices, or as required by applicable regulatory standards.

(ww) Waiver. There are no contracts, agreements or understandings between the Company and any person granting such person the right to require the Company to file a registration statement under the Securities Act with respect to any securities of the Company or to require the Company to include such securities with the Placement Shares registered pursuant to the Registration Statement except as have been validly waived or complied with in connection with the issuance and sale of the Placement Shares contemplated hereby.

24

(xx) Underwriter Agreements. The Company is not a party to any agreement with an agent or underwriter for any other "at-the-market" or continuous equity transaction or any "equity line" transaction.

(yy) No Reliance. The Company has not relied upon BTIG or its legal counsel for any legal, tax or accounting advice in connection with the offering and sale of the Shares.

(zz) No Integration. Neither the Company nor, to the Company's knowledge, any of its affiliates (within the meaning of Securities Act Rule 144) has, prior to the date hereof, made any offer or sale of any securities which could be "integrated" (within the meaning of the Securities Act) with the offer and sale of the Shares.

Any certificate signed by an officer of the Company and delivered to BTIG or to counsel for BTIG pursuant to or in connection with this Agreement or any Terms Agreement shall be deemed to be a representation and warranty by the Company to BTIG as to the matters set forth therein as of the date or dates indicated therein.

7. Covenants of the Company. The Company covenants and agrees with BTIG that:

(a) Registration Statement Amendments. After the date of this Agreement and during any period in which a Prospectus relating to any Shares is required to be delivered by BTIG under the Securities Act (without regard to the effects of Rules 153, 172 and 173 under the Securities Act) (the "Prospectus Delivery Period"), (i) the Company will notify BTIG promptly of the time when any subsequent amendment to the Registration Statement, other than the Incorporated Documents, has been filed with the Commission and/or has become effective or any subsequent supplement to the Prospectus has been filed and of any request by the Commission for any amendment or supplement to the Registration Statement or Prospectus or for additional information, (ii) the Company will prepare and file with the Commission, promptly upon BTIG's request, any amendments or supplements to the Registration Statement or Prospectus that, in BTIG's reasonable judgment, may be necessary or advisable in connection with the distribution of the Shares by BTIG (*provided, however*, that the failure of BTIG to make such request shall not relieve the Company of any obligation or liability hereunder and under any Terms Agreement, as applicable, or affect BTIG's right to rely on the representations and warranties made by the Company in this Agreement); (iii) the Company will not file any amendment or supplement to the Registration Statement or Prospectus relating to the Shares (except for the Incorporated Documents) unless a copy thereof has been submitted to BTIG a reasonable period of time before the filing and BTIG has not reasonably objected thereto (*provided, however*, (A) that the failure of BTIG to make such objection shall not relieve the Company of any obligation or liability hereunder and under any Terms Agreement, as applicable, or affect BTIG's right to rely on the representations and warranties made by the Company in this Agreement, (B) that, if BTIG objects thereto, BTIG may cease making sales of Placement Shares pursuant to this Agreement and/or may terminate any Terms Agreement and (C) that the Company has no obligation to provide BTIG any advance copy of such filing or to provide BTIG an opportunity to object to such filing if such filing does not name BTIG or does not relate to the transactions contemplated hereunder or under any Terms Agreement); (iv) the Company will furnish to BTIG at the time of filing thereof a copy of any document that upon filing is deemed to be incorporated by reference into the Registration Statement or Prospectus, except for those documents available via EDGAR; and (v) the Company will cause each amendment or supplement to the Prospectus to be filed with the Commission as required pursuant to the applicable paragraph of Rule 424(b) of the Securities Act (without reliance on Rule 424(b)(8) of the Securities Act) or, in the case of any Incorporated Document, to be filed with the

(b) Notice of Commission Stop Orders. During the Prospectus Delivery Period, the Company will advise BTIG, promptly after it receives notice or obtains knowledge thereof, of the issuance by the Commission of any stop order suspending the effectiveness of the Registration Statement or any notice objecting to, or other order preventing or suspending the use of, the Prospectus, of the suspension of the qualification of the Shares for offering or sale in any jurisdiction, or of the initiation of any proceeding for any such purpose or any examination pursuant to Section 8(e) of the Securities Act, or if the Company becomes the subject of a proceeding under Section 8A of the Securities Act in connection with the offering of the Shares; and it will promptly use its commercially reasonable efforts to prevent the issuance of any stop order or to obtain its withdrawal if such a stop order should be issued. Until such time as any stop order is lifted, BTIG may cease making offers and sales under this Agreement or any Terms Agreement.

(c) Delivery of Prospectus: Subsequent Changes. During the Prospectus Delivery Period, the Company will comply with all requirements imposed upon it by the Securities Act, as from time to time in force, and to file on or before their respective due dates all reports and any definitive proxy or information statements required to be filed by the Company with the Commission pursuant to Sections 13(a), 13(c), 14, 15(d) or any other provision of or under the Exchange Act. If the Company has omitted any information from the Registration Statement pursuant to Rule 430B under the Securities Act, it will use its best efforts to comply with the provisions of and make all requisite filings with the Commission pursuant to said Rule 430B and to notify BTIG promptly of all such filings. If during the Prospectus Delivery Period any event occurs as a result of which the Prospectus as then amended or supplemented would include an untrue statement of a material fact or omit to state a material fact necessary to make the statements therein, in the light of the circumstances then existing, not misleading, or if during such period it is necessary to amend or supplement the Registration Statement or Prospectus to comply with the Securities Act, the Company will promptly notify BTIG to suspend the offering of Placement Shares during such period, and the Company will promptly amend or supplement the Registration Statement or Prospectus (at the expense of the Company) so as to correct such statement or omission or effect such compliance.

(d) Listing of Placement Shares. During the Prospectus Delivery Period, the Company will use its commercially reasonable efforts to cause the Placement Shares to be listed on the Exchange. The Company will timely file with the Exchange all material documents and notices required by the Exchange of companies that have or will issue securities that are traded on the Exchange.

(e) Delivery of Registration Statement and Prospectus. The Company will furnish to BTIG and its counsel (at the expense of the Company) copies of the Registration Statement, the Prospectus (including all Incorporated Documents) and all amendments and supplements to the Registration Statement or Prospectus that are filed with the Commission during the Prospectus Delivery Period, including all documents filed with the Commission during such period that are deemed to be incorporated by reference therein, in each case, as soon as reasonably practicable via e-mail in ".pdf" format to an e-mail account designated by BTIG and, at BTIG's request, will also furnish copies of the Prospectus to each exchange or market on which sales of the Placement Shares may be made; *provided, however*, that the Company shall not be required to furnish any document (other than the Prospectus) to BTIG to the extent such document is available on EDGAR.

(f) Earnings Statement. The Company will make generally available to its security holders as soon as practicable, but in any event not later than 16 months after the effective date of the Registration Statement (as defined in Rule 158(c) under the Securities Act), an earnings statement of the Company and its subsidiaries (which need not be audited) complying with Section 11(a) and Rule 158 of the Securities Act. The terms "earnings statement" and "make generally available to its security holders" shall have the meanings set forth in Rule 158 under the Securities Act.

(g) Expenses. The Company, whether or not the transactions contemplated hereunder or under any Terms Agreement are consummated or this Agreement or any Terms Agreement is terminated in accordance with the provisions of Section 12 hereunder, will pay all expenses incident to the performance of its obligations hereunder and under each Terms Agreement, including, but not limited to, expenses relating to: (i) the preparation, printing, filing and delivery to BTIG of the Registration Statement and each amendment and supplement thereto, of each Prospectus and of each amendment and supplement thereto, and of this Agreement and such other documents as may be required in connection with the offering, purchase, sale, issuance or delivery of the Shares; (ii) the preparation, issuance and delivery of the Placement Shares, including any stock or other transfer taxes and any stamp or other duties payable upon the sale, issuance or delivery of the Shares to BTIG; (iii) the fees and disbursements of the counsel, accountants and other advisors to the Company in connection with the transactions contemplated by this Agreement and any Terms Agreement; (iv) the reimbursement for reasonable and documented out-of-pocket expenses incurred by BTIG, including the reasonable and documented fees and disbursements of counsel to BTIG, in connection with the transactions contemplated by this Agreement, in an amount not to exceed \$50,000, plus an amount not to exceed \$7,500 per calendar quarter thereafter (a "Quarterly Reimbursement") payable in connection with each Representation Date (except that, with respect to any Representation Date under Section 7(m) hereof that is subject to waiver, in connection with the following Representation Date not subject to waiver, the Company shall reimburse BTIG an additional Quarterly Reimbursement (i.e., a total of \$15,000); (v) up to \$25,000 in connection with any expansion, reduction or other change in the number or value of Shares of Common Stock available for issuance and sale to or through BTIG pursuant to this Agreement; (vi) the qualification of the Placement Shares under securities laws in accordance with the provisions of Section 7(x), including filing fees, if any; (vii) the fees and expenses incurred in connection with the listing or qualification of the Placement Shares for trading on the Exchange; (viii) the fees and expenses of the transfer agent or registrar for the Common Stock; and (viii) filing fees and expenses, if any, of the Commission and FINRA.

(h) Use of Proceeds. The Company will use the Net Proceeds as described in the Prospectus in the section entitled "Use of Proceeds."

(i) Other Sales. Without the prior written consent of BTIG, the Company will not, directly or indirectly, offer to sell, sell, contract to sell, grant any option to sell or otherwise dispose of any Common Stock (other than the Shares offered pursuant to this Agreement) or securities convertible into or exchangeable for Common Stock, warrants or any rights to purchase or acquire, Common Stock during the period beginning on the fifth (5th) Trading Day immediately prior to the date on which any Placement Notice is delivered to BTIG hereunder and ending on the fifth (5th) Trading Day immediately following the final Settlement Date with respect to Shares sold pursuant to such Placement Notice (or, if the Placement Notice has been terminated or suspended prior to the sale of all Shares covered by a Placement Notice, the date of such suspension or termination); and will not directly or indirectly in any other "at-the-market" or continuous equity transaction offer to sell, sell, contract to sell, grant any option to sell or otherwise dispose of any Common Stock (other than the Shares offered pursuant to this Agreement) or securities convertible into or exchangeable for Common Stock, warrants or any rights to purchase or acquire, Common Stock prior to the later of the termination of this Agreement and the twentieth (20th) day immediately following the final Settlement Date with respect to Shares sold pursuant to such Placement Notice; *provided, however*, that such restrictions will not be required in connection with the Company's issuance or sale of (i) Common Stock, options to purchase Common Stock, other equity awards to acquire Common Stock, or Common Stock issuable upon the exercise or vesting of options or other equity awards, pursuant to any employee or director equity awards or benefits plan, stock ownership plan or dividend reinvestment plan (but not Common Stock subject to a waiver to exceed plan limits in its dividend reinvestment plan) of the Company whether now in effect or hereafter implemented, (ii) Common Stock issuable upon conversion of securities or the exercise or vesting of warrants, options or other rights in effect or outstanding, and disclosed in filings by the Company available on EDGAR or otherwise in writing to BTIG and (iii) Common Stock or securities convertible into or exchangeable for shares of Common Stock as consideration for mergers, acquisitions, other business combinations or strategic alliances, or offered and sold in a privately negotiated transaction to vendors, customers, lenders, investors, strategic partners or potential strategic partners, occurring after the date of this Agreement

(j) Change of Circumstances. The Company will, at any time during the term of this Agreement, advise BTIG promptly after it shall have received notice or obtained knowledge of any information or fact that would alter or affect in any material respect any opinion, certificate, letter or other document required to be provided to BTIG pursuant to this Agreement.

(k) Due Diligence Cooperation. The Company will cooperate with any reasonable due diligence review conducted by BTIG or its agents in connection with the transactions contemplated hereby or any Terms Agreement, including, without limitation, providing information and making available documents and senior corporate officers, during regular business hours and at the Company's principal offices, as BTIG may reasonably request.

(l) Required Filings Relating to Placement of Placement Shares. The Company agrees that (i) as promptly as practicable after the close of each of the Company's fiscal quarters, or on such other dates as required under the Securities Act or under interpretations by the Commission thereof, the Company shall prepare a prospectus supplement, which will set forth the number of Placement Shares sold to or through BTIG during such quarterly period (or other relevant period), the Net Proceeds to the Company and the compensation paid or payable by the Company to BTIG with respect to such sales of Placement Shares and shall file such prospectus supplement pursuant to Rule 424(b) under the Securities Act (and within the time periods required by Rules 424(b), 430B or 430C under the Securities Act, as applicable) and shall file any issuer free writing prospectus that is required to be filed with the Commission within the applicable time period prescribed for such filing by Rule 433 of the Securities Act or (ii) if such prospectus supplement is not so filed with respect to a particular fiscal quarter, the Company shall disclose the information referred to in clause (i) above in its annual report on Form 10-K or its quarterly report on Form 10-Q, as applicable, in respect of such quarterly period and shall file such report with the Commission within the applicable time period prescribed for such report under the Exchange Act. The Company shall not file any such prospectus supplement or issuer free writing prospectus relating to such sales, and shall not file any report containing disclosure relating to such sales, unless a copy of such prospectus supplement or issuer free writing prospectus or disclosure relating to such sales to be included in a Form 10-K or Form 10-Q (it being acknowledged and agreed that the Company shall not submit any portion of any Form 10-K or Form 10-Q other than the specific disclosure relating to any sales of Placement Shares), as applicable, has been submitted to BTIG a reasonable period of time before the filing and BTIG has not reasonably objected thereto (provided, however, (A) that the failure of BTIG to make such objection shall not relieve the Company of any obligation or liability hereunder and under any Terms Agreement, or affect BTIG's right to rely on the representations and warranties made by the Company in this Agreement, and (B) that, if BTIG objects thereto, BTIG may cease making sales of Placement Shares pursuant to this Agreement or any Terms Agreement). The Company shall provide copies of the Prospectus and such prospectus supplement and any issuer free writing prospectus to BTIG via e-mail in ".pdf" format on such filing date to an e-mail account designated by BTIG and shall also furnish copies of the Prospectus and such prospectus supplement to each exchange or market on which sales of the Placement Shares may be made as may be required by the rules or regulations of such exchange or market.

(m) Representation Dates; Certificate. On or prior to the date the first Placement Notice is given pursuant to this Agreement, each time Shares are delivered to BTIG as principal on a Settlement Date with respect to a Principal Transaction and each time the Company (i) files the Prospectus relating to the Shares or amends or supplements the Registration Statement or the Prospectus relating to the Shares (other than (A) a prospectus supplement filed in accordance with Section 7(l) or (B) a supplement or amendment that relates to an offering of securities other than the Shares) by means of a post-effective amendment, sticker, or supplement, but not by means of incorporation of document(s) by reference in the Registration Statement or the Prospectus relating to the Shares; (ii) files an annual report on Form 10-K under the Exchange Act (including any Form 10-K/A containing amended financial information or a material amendment to the previously filed Form 10-K); (iii) files a quarterly report on Form 10-Q under the Exchange Act; or (iv) files a report on Form 8-K containing amended financial information (other than information "furnished" pursuant to Items 2.02 or 7.01 of Form 8-K or to provide disclosure pursuant to Item 8.01 of Form 8-K relating to the reclassifications of certain properties as discontinued operations in accordance with Statement of Financial Accounting Standards No. 144) under the Exchange Act (each date of filing of one or more of the documents referred to in clauses (i) through (iv) shall be a "Representation Date"); the Company shall furnish BTIG within three (3) Trading Days after each Representation Date (but in the case of clause (iv) above only if BTIG reasonably determines that the information contained in such Form 8-K is material) with a certificate, in the form attached hereto as Exhibit 7(m). The requirement to provide a certificate under this Section 7(m) shall be automatically waived for any Representation Date occurring at a time at which no Placement Notice or Terms Agreement is pending, which waiver shall continue until the earlier to occur of the date the Company delivers a Placement Notice hereunder (which for such calendar quarter shall be considered a Representation Date), Shares are delivered to BTIG as principal on a Settlement Date with respect to a Principal Transaction and the next occurring Representation Date; *provided, however*, that such waiver shall not apply for any Representation Date on which the Company files its annual report on Form 10-K. Notwithstanding the foregoing, if the Company subsequently decides to sell Shares following a Representation Date when the Company relied on such waiver and did not provide BTIG with a certificate under this Section 7(m), then before the Company delivers the Placement Notice or BTIG sells any Shares in an Agency Transaction, or on the applicable Settlement Date with respect to a Principal Transaction, the Company shall provide BTIG with a certificate, in the form attached hereto as Exhibit 7(m), dated the date of the Placement Notice for such Agency Transaction or the Settlement Date of such Principal Transaction, as applicable.

(n) Legal Opinions. On or prior to the earlier of (i) the date the first Placement Notice is given pursuant to this Agreement and (ii) Shares are delivered to BTIG as principal on a Settlement Date with respect to the first Principal Transaction pursuant to the first Terms Agreement and this Agreement, the Company shall cause to be furnished to BTIG the written opinions and negative assurance of Ballard Spahr, as issuer's counsel to the Company, or other counsel reasonably satisfactory to BTIG ("Company Counsel"), in each case substantially in the forms previously agreed between the Parties. Thereafter, each time Shares are delivered to BTIG as principal on a Settlement Date with respect to a Principal Transaction and within three (3) Trading Days after each Representation Date with respect to which the Company is obligated to deliver a certificate in the form attached hereto as Exhibit 7(m) for which no waiver is applicable pursuant to Section 7(m), and not more than once per calendar quarter, the Company shall cause to be furnished to BTIG the written opinions and negative assurance of Company Counsel substantially in the form previously agreed between the Parties, modified, as necessary, to relate to the Registration Statement and the Prospectus as then amended or supplemented; *provided, however*, that if Company Counsel has previously furnished to BTIG such written opinions and negative assurance substantially in the form previously agreed between the Parties, Company Counsel may, in respect of any future Representation Date, furnish BTIG with a letter (a "Reliance Letter") in lieu of such opinions and negative assurance to the effect that BTIG may rely on the prior opinions and negative assurance of Company Counsel delivered pursuant to this Section 7(n) to the same extent as if it were dated the date of such Reliance Letter (except that statements in such prior opinion shall be deemed to relate to the Registration Statement and the Prospectus as amended or supplemented to the date of such Reliance Letter).

(o) Comfort Letter. On or prior to the date the first Placement Notice is given pursuant to this Agreement, each time Shares are delivered to BTIG as principal on a Settlement Date with respect to a Principal Transaction and within three (3) Trading Days after each Representation Date with respect to which the Company is obligated to deliver a certificate in the form attached hereto as Exhibit 7(m) for which no waiver is applicable pursuant to Section 7(m), the Company shall cause its independent accountants to furnish BTIG a letter, dated as of such date (the "Comfort Letter"), in form and substance satisfactory to BTIG, (i) confirming that they are an independent registered public accounting firm within the meaning of the Securities Act, the Exchange Act and the rules and regulations of the PCAOB and are in compliance with the applicable requirements relating to the qualification of accountants under Rule 2-01 of Regulation S-X of the Commission, (ii) stating, as of such date, the conclusions and findings of such firm with respect to the financial information and other matters ordinarily covered by accountants' "comfort letters" to underwriters in connection with registered public offerings (the first such letter, the "Initial Comfort Letter") and (iii) updating the Initial Comfort Letter with any information that would have been included in the Initial Comfort Letter had it been given on such date and modified as necessary to relate to the Registration Statement

and the Prospectus, as amended and supplemented to the date of such letter.

(p) Market Activities. The Company shall not, and shall cause its Subsidiaries and its and their respective directors, officers and controlling persons not to, directly or indirectly, (i) take any action designed to stabilize or manipulate, or which constitutes or might reasonably be expected to cause or result in, the stabilization or manipulation of, the price of any security of the Company to facilitate the sale or resale of the Shares or (ii) sell, bid for, or purchase the Shares to be issued and sold pursuant to this Agreement, or pay anyone any compensation for soliciting the purchases of the Shares, other than BTIG.

(q) Insurance. The Company and its Subsidiaries shall maintain, or cause to be maintained, insurance in such amounts and covering such risks the Company reasonably deems adequate.

31

(r) Compliance with Laws. The Company and each of its Subsidiaries shall maintain, or cause to be maintained, all material permits, licenses and other authorizations required by federal, state and local law in order to conduct their businesses as described in the Prospectus, and the Company and each of its Subsidiaries shall conduct their businesses, or cause their businesses to be conducted, in substantial compliance with such permits, licenses and authorizations and with applicable laws, except where the failure to maintain or be in compliance with such permits, licenses and authorizations could not reasonably be expected to have a Material Adverse Effect.

(s) Securities Act and Exchange Act. The Company will comply with all requirements imposed upon it by the Securities Act and the Exchange Act as from time to time in force, so far as necessary to permit the continuance of sales of, or dealings in, the Shares as contemplated by the provisions hereof and any Terms Agreement and the Prospectus. Without limiting the generality of the foregoing, during the Prospectus Delivery Period, the Company will file all documents required to be filed with the Commission pursuant to the Exchange Act within the time periods required by the Exchange Act (giving effect to permissible extensions in accordance with Rule 12b-25 under the Exchange Act).

(t) Sarbanes-Oxley Act. The Company, and each of the Significant Subsidiaries, will maintain a system of internal accounting controls sufficient to provide reasonable assurance that (i) transactions are executed in accordance with management's general or specific authorization; (ii) transactions are recorded as necessary to permit preparation of financial statements in conformity with generally accepted accounting principles and to maintain accountability for assets; (iii) access to assets is permitted only in accordance with management's general or specific authorization; and (iv) the recorded book value for assets is compared with the fair market value of such assets (computed in accordance with generally accepted accounting principles) at reasonable intervals and appropriate action is taken with respect to any differences. The Company will comply with all requirements imposed upon it by the Sarbanes-Oxley Act and the rules and regulations of the Commission and the Exchange promulgated thereunder.

(u) No Offer To Sell. Other than a free writing prospectus (as defined in Rule 405 under the Securities Act) approved in advance in writing by the Company and BTIG in its capacity as agent hereunder or as principal hereunder and under any Terms Agreement, neither BTIG nor the Company (including its agents and representatives other than BTIG in its capacity as such) will, directly or indirectly, make, use, prepare, authorize, approve or refer to any free writing prospectus relating to the Shares to be sold by BTIG as agent hereunder or as principal hereunder and under any Terms Agreement.

(v) Investment Company Act. The Company shall conduct its affairs in such a manner so as to reasonably ensure that neither it nor any of its Subsidiaries will be or become, at any time prior to the termination of this Agreement, an "investment company," as such term is defined in the Investment Company Act.

(w) Transfer Agent. The Company shall maintain, at its sole expense, a registrar and transfer agent for the Common Stock.

32

(x) Blue Sky and Other Qualifications. The Company will use its commercially reasonable efforts, in cooperation with BTIG, to qualify the Placement Shares for offering and sale, or to obtain an exemption for the Placement Shares to be offered and sold, under the applicable securities laws of such states and other jurisdictions (domestic or foreign) as BTIG may designate and to maintain such qualifications and exemptions in effect for so long as required for the distribution of the Placement Shares (but in no event for less than one year from the date of this Agreement); *provided, however*, that the Company shall not be obligated to file any general consent to service of process or to qualify as a foreign corporation or as a dealer in securities in any jurisdiction in which it is not so qualified or to subject itself to taxation in respect of doing business in any jurisdiction in which it is not otherwise so subject. In each jurisdiction in which the Placement Shares have been so qualified or exempt, the Company will file such statements and reports as may be required by the laws of such jurisdiction to continue such qualification or exemption, as the case may be, in effect for so long as required for the distribution of the Placement Shares (but in no event for less than one year from the date of this Agreement).

(y) Renewal of Registration Statement. If, immediately prior to the third (3rd) anniversary of the initial effective date of the Registration Statement (the "**Renewal Date**"), any of the Shares remain unsold and this Agreement has not been terminated for any reason, the Company will, prior to the Renewal Date, file a new shelf registration statement or, if applicable, an automatic shelf registration statement relating to the Shares, in a form satisfactory to BTIG and its counsel, and, if such registration statement is not an automatic shelf registration statement, will use its best efforts to cause such registration statement to be declared effective within 180 days after the Renewal Date. The Company will take all other reasonable actions necessary or appropriate to permit the public offer and sale of the Shares to continue as contemplated in the expired registration statement relating to the Shares. From and after the effective date thereof, references herein to the "Registration Statement" shall include such new shelf registration statement or such new automatic shelf registration statement, as the case may be.

(z) Emerging Growth Company Status. The Company will promptly notify the Agent if the Company ceases to be an Emerging Growth Company at any time during the term of this Agreement.

(aa) Consent to BTIG Purchases. The Company acknowledges and agrees that BTIG may, to the extent permitted under the Securities Act and the Exchange Act (including, without limitation, Regulation M promulgated thereunder), purchase and sell shares of Common Stock for its own account and for the account of its clients while this Agreement is in effect, including, without limitation, at the same time any Placement Notice is in effect or any sales of Shares occur pursuant to this Agreement or any Terms Agreement; provided that BTIG acknowledges and agrees that, except pursuant to a Terms Agreement, any such transactions are not being, and shall not be deemed to have been, undertaken at the request or direction of, or for the account of, the Company, and that the Company has and shall have no control over any decision by BTIG and its affiliates to enter into any such transactions.

33

8. Representations and Covenants of BTIG. BTIG represents and warrants that it is duly registered as a broker-dealer under FINRA, the Exchange Act and the applicable statutes and regulations of each state in which the Placement Shares will be offered and sold, except such states in which BTIG is exempt from registration or such registration is not otherwise required. BTIG shall continue, for the term of this Agreement, to be duly registered as a broker-dealer under FINRA, the Exchange Act and the applicable statutes and regulations of each state in which the Placement Shares will be offered and sold, except in such states in which BTIG is exempt from registration or such registration is not otherwise required, during the terms of this Agreement. BTIG will comply with all applicable laws and regulations in connection with the sale of Placement Shares pursuant to this Agreement and any Terms Agreement, including, but not limited to, Regulation M under the Exchange Act.

9. Conditions to BTIG's Obligations. The obligations of BTIG hereunder with respect to a Placement in any Agency Transaction, and the obligations of BTIG with respect to a Principal Transaction pursuant to any Terms Agreement and this Agreement, will in each case be subject to the continuing accuracy and completeness of the representations and warranties made by the Company herein, to the due performance by the Company of its obligations hereunder and under any Terms Agreement, as applicable, to the completion by BTIG of a due diligence review satisfactory to BTIG in its reasonable judgment, and to the continuing satisfaction (or waiver by BTIG in its sole discretion) of the following additional conditions:

(a) Registration Statement Effective. The Registration Statement shall be effective and shall be available for the offer and sale of all Placement Shares that have been issued or are contemplated to be issued pursuant to all Placement Notices that have been delivered to BTIG by the Company and all Terms Agreements that have been executed by the Parties.

(b) Prospectus Supplement. The Company shall have filed with the Commission the Prospectus Supplement pursuant to Rule 424(b) under the Securities Act not later than the Commission's close of business on the second Business Day following the date of this Agreement.

(c) No Material Notices. None of the following events shall have occurred and be continuing: (i) receipt by the Company of any request for additional information from the Commission or any other federal or state governmental authority during the period of effectiveness of the Registration Statement, the response to which would require any post-effective amendments or supplements to the Registration Statement or the Prospectus; (ii) the issuance by the Commission or any other federal or state governmental authority of any stop order suspending the effectiveness of the Registration Statement or other order preventing or suspending the use of the Prospectus or the initiation of any proceedings for that purpose; (iii) receipt by the Company of any notification with respect to the suspension of the qualification or exemption from qualification of any of the Placement Shares for sale in any jurisdiction or the initiation or threatening of any proceeding for such purpose; or (iv) the occurrence of any event that makes any material statement made in the Registration Statement or the Prospectus or any material document incorporated or deemed to be incorporated therein by reference untrue in any material respect or that requires the making of any changes in the Registration Statement, related Prospectus or documents so that, in the case of the Registration Statement, it will not contain any materially untrue statement of a material fact or omit to state any material fact required to be stated therein or necessary to make the statements therein not misleading and, that in the case of the Prospectus, it will not contain any materially untrue statement of a material fact or omit to state any material fact required to be stated therein or necessary to make the statements therein, in the light of the circumstances under which they were made, not misleading.

34

(d) No Misstatement or Material Omission. BTIG shall not have advised the Company that the Registration Statement or Prospectus, or any amendment or supplement thereto, contains an untrue statement of fact that in BTIG's reasonable opinion is material, or omits to state a fact that in BTIG's opinion is material and is required to be stated therein or is necessary to make the statements therein not misleading.

(e) Material Changes. Except as contemplated in the Prospectus, or disclosed in the Company's reports filed with the Commission, there shall not have been any material adverse change, on a consolidated basis, in the authorized capital stock of the Company or any Material Adverse Effect, or any development that could reasonably be expected to cause a Material Adverse Effect, or a downgrading in or withdrawal of the rating assigned to any of the Company's securities by any rating organization or a public announcement by any rating organization that it has under surveillance or review its rating of any of the Company's securities, the effect of which, in the case of any such action by a rating organization described above, in the reasonable judgment of BTIG (without relieving the Company of any obligation or liability it may otherwise have), is so material as to make it impracticable or inadvisable to proceed with the offering of the Shares on the terms and in the manner contemplated by this Agreement or any Terms Agreement, as the case may be, and the Prospectus.

(f) Legal Opinion. BTIG shall have received the opinions and negative assurances required to be delivered pursuant to Section 7(n) on or before the date on which such delivery of such opinions are required pursuant to Section 7(n).

(g) Comfort Letter. BTIG shall have received the Comfort Letter required to be delivered pursuant to Section 7(o) on or before the date on which such delivery of such Comfort Letter is required pursuant to Section 7(o).

(h) Representation Certificate. BTIG shall have received the certificate required to be delivered pursuant to Section 7(m) on or before the date on which delivery of such certificate is required pursuant to Section 7(m).

(i) No Suspension. Trading in the Common Stock shall not have been suspended on the Exchange and the Common Stock shall not have been delisted from the Exchange.

35

(j) Other Materials. On each date on which the Company is required to deliver a certificate pursuant to Section 7(m), the Company shall have furnished to BTIG such appropriate further information, certificates and documents as BTIG may have reasonably requested. All such opinions, certificates, letters and other documents will be in compliance with the provisions hereof. The Company shall have furnished BTIG with such conformed copies of such opinions, certificates, letters and other documents as BTIG shall have reasonably requested.

(k) Securities Act Filings Made. All filings with the Commission required by Rule 424(b) and Rule 433 under the Securities Act to have been filed prior to the issuance of any Placement Notice hereunder or the Settlement Date with respect to any Principal Transaction under any Terms Agreement, as applicable shall have been made within the applicable time period prescribed for such filing by Rule 424(b) (without reliance on Rule 424(b)(8) of the Securities Act) and Rule 433.

(l) Approval for Listing. The Placement Shares shall have been approved for listing on the Exchange, subject only to notice of issuance.

(m) No Termination Event. There shall not have occurred any event that would permit BTIG to terminate this Agreement pursuant to Section 12(a).

10. Indemnification and Contribution.

(a) Indemnification by the Company. The Company agrees to indemnify and hold harmless BTIG, its directors, officers, members, partners, employees and agents and each BTIG Affiliate, if any, as follows:

(i) against any and all loss, liability, claim, damage and expense whatsoever, as reasonably incurred, arising out of any untrue statement or alleged untrue statement of a material fact contained in the Registration Statement (or any amendment thereto), or the omission or alleged omission therefrom of a material fact required to be stated therein or necessary to make the statements therein not misleading, or arising out of any untrue statement or alleged untrue statement of a material fact included in any "issuer free writing prospectus" (as defined in Rule 433 under the Securities Act) or the Prospectus (or any amendment or supplement thereto), or the omission or alleged omission therefrom of a material fact necessary in order to make the statements therein, in the light of the circumstances under which they were made, not misleading;

(ii) against any and all loss, liability, claim, damage and expense whatsoever, as reasonably incurred, to the extent of the aggregate amount paid in settlement of any litigation, or any investigation or proceeding by any governmental agency or body, commenced or threatened, or of any claim whatsoever based upon

any such untrue statement or omission, or any such alleged untrue statement or omission; provided that any such settlement is effected with the written consent of the Company, which consent shall not unreasonably be delayed or withheld; and

(iii) against any and all expense whatsoever, as reasonably incurred (including the reasonable fees and disbursements of counsel chosen by BTIG) in investigating, preparing or defending against any litigation, or any investigation or proceeding by any governmental agency or body, commenced or threatened, or any claim whatsoever based upon any such untrue statement or omission, or any such alleged untrue statement or omission, to the extent that any such expense is not paid under (i) or (ii) above;

36

provided, however, that this indemnity agreement shall not apply to any loss, liability, claim, damage or expense to the extent arising out of any untrue statement or omission, or alleged untrue statement or omission, made in reliance upon and in conformity with information relating to BTIG that has been furnished in writing to the Company by BTIG expressly for inclusion in any document described in clause (i) of this Section 10(a). This indemnity agreement will be in addition to any liability that the Company might otherwise have.

(b) Indemnification by BTIG. BTIG agrees to indemnify and hold harmless the Company and its directors and each officer of the Company who signed the Registration Statement, and each person, if any, who (i) controls the Company within the meaning of Section 15 of the Securities Act or Section 20 of the Exchange Act or (ii) is controlled by or is under common control with the Company against any and all losses, liabilities, claims, damages and expenses described in the indemnity contained in Section 10(a), as and when incurred, but only with respect to untrue statements or omissions, or alleged untrue statements or omissions, made in the Registration Statement (or any amendment thereto), any “issuer free writing prospectus” (as defined in Rule 433 under the Securities Act) or the Prospectus (or any amendment or supplement thereto) in reliance upon and in conformity with written information relating to BTIG that has been furnished to the Company by BTIG expressly for inclusion in any document as described in clause (i) of Section 10(a).

(c) Procedure. Any indemnified party that proposes to assert the right to be indemnified under this Section 10 will, promptly after receipt of notice of commencement of any action against such party in respect of which a claim is to be made against an indemnifying party or parties under this Section 10, notify each such indemnifying party of the commencement of such action, enclosing a copy of all papers served, but the omission so to notify such indemnifying party will not relieve the indemnifying party from (i) any liability that it might have to any indemnified party otherwise than under this Section 10 and (ii) any liability that it may have to any indemnified party under the foregoing provision of this Section 10 unless, and only to the extent that, such omission results in the forfeiture of substantive rights or defenses by the indemnifying party. If any such action is brought against any indemnified party and it notifies the indemnifying party of its commencement, the indemnifying party will be entitled to participate in and, to the extent that it elects by delivering written notice to the indemnified party promptly after receiving notice of the commencement of the action from the indemnified party, jointly with any other indemnifying party similarly notified, to assume the defense of the action, with counsel reasonably satisfactory to the indemnified party, and after notice from the indemnifying party to the indemnified party of its election to assume the defense, the indemnifying party will not be liable to the indemnified party for any legal or other expenses except as provided below and except for the reasonable costs of investigation subsequently incurred by the indemnified party in connection with the defense. The indemnified party will have the right to employ its own counsel in any such action, but the fees, expenses and other charges of such counsel will be at the expense of such indemnified party unless (1) the employment of counsel by the indemnified party has been authorized in writing by the indemnifying party, (2) the indemnified party has reasonably concluded (based on advice of counsel to the indemnified party) that there may be legal defenses available to it or other indemnified parties that are different from or in addition to those available to the indemnifying party, (3) a conflict or potential conflict exists (based on advice of counsel to the indemnified party) between the indemnified party and the indemnifying party (in which case the indemnifying party will not have the right to direct the defense of such action on behalf of the indemnified party) or (4) the indemnifying party has not in fact employed counsel to assume the defense of such action within a reasonable time after receiving notice of the commencement of the action, in each of which cases the reasonable fees, disbursements and other charges of counsel will be at the expense of the indemnifying party or parties. It is understood that the indemnifying party or parties shall not, in connection with any proceeding or related proceedings in the same jurisdiction, be liable for the reasonable fees, disbursements and other charges of more than one separate firm admitted to practice in such jurisdiction at any one time for all such indemnified party or parties. All such fees, disbursements and other charges will be reimbursed by the indemnifying party promptly as they are incurred. An indemnifying party will not, in any event, be liable for any settlement of any action or claim effected without its written consent. No indemnifying party shall, without the prior written consent of each indemnified party, settle or compromise or consent to the entry of any judgment in any pending or threatened claim, action or proceeding relating to the matters contemplated by this Section 10 (whether or not any indemnified party is a party thereto), unless such settlement, compromise or consent (1) includes an unconditional release of each indemnified party from all liability arising or that may arise out of such claim, action or proceeding and (2) does not include a statement as to or an admission of fault, culpability or a failure to act by or on behalf of any indemnified party.

37

(d) Contribution. In order to provide for just and equitable contribution in circumstances in which the indemnification provided for in the foregoing paragraphs of this Section 10 is applicable in accordance with its terms but for any reason is held to be unavailable from the Company or BTIG, the Company and BTIG will contribute to the total losses, claims, liabilities, expenses and damages (including any investigative, legal and other expenses reasonably incurred in connection with, and any amount paid in settlement of, any action, suit or proceeding or any claim asserted) to which the Company and BTIG may be subject in such proportion as shall be appropriate to reflect the relative benefits received by the Company on the one hand and BTIG on the other. The relative benefits received by the Company on the one hand and BTIG on the other hand shall be deemed to be in the same proportion as the total net proceeds from the sale of the Shares (net of commissions to BTIG but before deducting expenses) received by the Company bear to the total compensation received by BTIG from the sale of Shares on behalf of the Company. If, but only if, the allocation provided by the foregoing sentence is not permitted by applicable law, the allocation of contribution shall be made in such proportion as is appropriate to reflect not only the relative benefits referred to in the foregoing sentence but also the relative fault of the Company, on the one hand, and BTIG, on the other, with respect to the statements or omission that resulted in such loss, claim, liability, expense or damage, or action in respect thereof, as well as any other relevant equitable considerations with respect to such offering. Such relative fault shall be determined by reference to, among other things, whether the untrue or alleged untrue statement of a material fact or omission or alleged omission to state a material fact relates to information supplied by the Company or BTIG, the intent of the parties and their relative knowledge, access to information and opportunity to correct or prevent such statement or omission. The Company and BTIG agree that it would not be just and equitable if contributions pursuant to this Section 10(d) were to be determined by pro rata allocation or by any other method of allocation that does not take into account the equitable considerations referred to herein. The amount paid or payable by an indemnified party as a result of the loss, claim, liability, expense, or damage, or action in respect thereof, referred to above in this Section 10(d) shall be deemed to include, for the purpose of this Section 10(d), any legal or other expenses reasonably incurred by such indemnified party in connection with investigating or defending any such action or claim to the extent consistent with Section 10(c) hereof. Notwithstanding the foregoing provisions of this Section 10(d), BTIG shall not be required to contribute any amount in excess of the commissions received by it under this Agreement and no person found guilty of fraudulent misrepresentation (within the meaning of Section 11(f) of the Securities Act) will be entitled to contribution from any person who was not guilty of such fraudulent misrepresentation. For purposes of this Section 10(d), any person who controls a party to this Agreement within the meaning of the Securities Act, and any officers, directors, members, partners, employees or agents of BTIG, will have the same rights to contribution as that party, and each officer of the Company who signed the Registration Statement will have the same rights to contribution as the Company, subject in each case to the provisions hereof. Any party entitled to contribution, promptly after receipt of notice of commencement of any action against such party in respect of which a claim for contribution may be made under this Section 10(d), will notify any such party or parties from whom contribution may be sought, but the omission to so notify will not relieve that party or parties from whom contribution may be sought from any other obligation it or they may have under this Section 10(d) except to the extent that the failure to so notify such other party materially prejudiced the substantive rights or defenses of the party from whom contribution is sought. Except for a settlement entered into pursuant to the last sentence of Section 10(c) hereof, no party will be liable for contribution with respect to any action or claim settled without its written consent if such consent is required pursuant to Section 10(c) hereof.

11. Representations and Agreements to Survive Delivery. The indemnity and contribution agreements contained in Section 10 of this Agreement and all representations and warranties of the Company herein or in certificates delivered pursuant hereto shall survive, as of their respective dates, regardless of (i) any investigation made by or on behalf of BTIG, any controlling persons, or the Company (or any of their respective officers, directors or controlling persons), (ii) delivery and acceptance of the Placement Shares and payment therefor or (iii) any termination of this Agreement.

38

12. Termination.

(a) BTIG shall have the right, by giving notice as hereinafter specified in Section 13, at any time to terminate this Agreement and/or any Terms Agreement (including at any time at or prior to the Settlement Date with respect to the Shares to be sold under such Terms Agreement) if: (i) any Material Adverse Effect, or any development that has actually occurred and that would reasonably be expected to result in a Material Adverse Effect, has occurred that, in the reasonable judgment of BTIG, may materially impair the ability of BTIG to sell the Shares hereunder or as contemplated in any Terms Agreement or the Prospectus; (ii) there has occurred any (A) material adverse change in the financial markets in the United States or the international financial markets, (B) outbreak of hostilities or escalation thereof or other calamity or crisis or (C) change or development involving a prospective change in national or international political, financial or economic conditions, in each case the effect of which, in the reasonable judgment of BTIG, may materially impair the ability of BTIG to sell the Shares hereunder or as contemplated in any Terms Agreement or the Prospectus; (iii) trading in the Common Stock has been suspended or limited by the Commission or the Exchange, or if trading generally on the Exchange has been suspended or limited (including automatic halt in trading pursuant to market-decline triggers other than those in which solely program trading is temporarily halted), or minimum prices for trading have been fixed on the Exchange; (iv) any suspension of trading of any securities of the Company on any exchange or in the over-the-counter market shall have occurred and be continuing; (v) a major disruption of securities settlements or clearance services in the United States shall have occurred and be continuing; or (vi) a banking moratorium has been declared by either U.S. Federal or New York authorities. The Company may not terminate any Terms Agreement without the prior written consent of BTIG. Any such termination pursuant to this Section 12(a) shall be without liability of any party to any other party, except that the provisions of Section 7(g) (Expenses), Section 10 (Indemnification), Section 11 (Survival of Representations), Section 12(f), Section 17 (Applicable Law; Consent to Jurisdiction) and Section 18 (Waiver of Jury Trial) hereof shall remain in full force and effect notwithstanding such termination.

(b) The Company shall have the right, by giving three (3) days notice as hereinafter specified in Section 13, to terminate this Agreement in its sole discretion at any time after the date of this Agreement. Any such termination shall be without liability of any party to any other party, except that the provisions of Section 7(g), Section 10, Section 11, Section 12(f), Section 17 and Section 18 hereof shall remain in full force and effect notwithstanding such termination.

(c) BTIG shall have the right, by giving three (3) days notice as hereinafter specified in Section 13, to terminate this Agreement in its sole discretion at any time after the date of this Agreement. Any such termination shall be without liability of any party to any other party except that the provisions of Section 7(g), Section 10, Section 11, Section 12(f), Section 17 and Section 18 hereof shall remain in full force and effect notwithstanding such termination.

39

(d) Unless earlier terminated pursuant to this Section 12, this Agreement shall automatically terminate upon the issuance and sale of all of the Shares to or through BTIG on the terms and subject to the conditions set forth herein and any Terms Agreement; *provided* that the provisions of Section 7(g), Section 10, Section 11, Section 12(f), Section 17 and Section 18 hereof shall remain in full force and effect notwithstanding such termination.

(e) This Agreement shall remain in full force and effect unless terminated pursuant to Sections 12(a), (b), (c), or (d) above or otherwise by mutual agreement of the Parties; *provided, however*, that any such termination by mutual agreement shall in all cases be deemed to provide that Section 7(g), Section 10, Section 11, Section 12(f), Section 17 and Section 18 shall remain in full force and effect.

(f) Any termination of this Agreement or any Terms Agreement shall be effective on the date specified in such notice of termination; *provided, however*, that such termination shall not be effective until the close of business on the date of receipt of such notice by BTIG or the Company, as the case may be. If such termination, other than a termination of any Terms Agreement pursuant to Section 12(a) above, shall occur prior to the Settlement Date for any sale of Shares, such termination shall not become effective until the close of business on such Settlement Date and such Shares shall settle in accordance with the provisions of this Agreement (it being hereby acknowledged and agreed that a termination of any Terms Agreement pursuant to Section 12(a) above shall become effective in accordance with the first sentence of this Section 12(f) and shall relieve the Parties of their respective obligations under such Terms Agreement, including, without limitation, with respect to the settlement of the Shares subject to such Terms Agreement).

13. Notices.

Except as otherwise provided in this Agreement, all notices and other communications hereunder shall be in writing and shall be deemed to have been duly given if mailed or transmitted by any standard form of telecommunication. Notices to the Agent shall be directed to (a) BTIG, LLC, 65 East 55th Street, New York, New York, 10022, Attention: Equity Capital Markets (email: BTIGUSATMTrading@btig.com), and with a copy (which shall not constitute notice) to: Attention: General Counsel and Chief Compliance Officer (emails: BTIGCompliance@btig.com, IBLegal@btig.com), and (c) and a copy for information purposes to Cozen O'Connor, 33 South 6th Street, Suite 3800, Minneapolis, Minnesota 55402, Attention: Christopher J. Bellini, Esq. Notices to the Company shall be directed to the offices of the Company at Bullfrog AI Holdings, Inc, 325 Ellington Blvd., Unit 317 Gaithersburg, MD 20878, and copies for information purposes to Ballard Spahr LLP, 1735 Market Street, 51st Floor, Philadelphia, PA 19103-7599 Attention: Peter Jaslow.

Each party may change such address for notices by sending to the other party to this Agreement written notice of a new address for such purpose. Each such notice or other communication shall be deemed given (i) when delivered personally or by verifiable facsimile transmission (with an original to follow) on or before 4:30 p.m., New York City time, on a Business Day or, if such day is not a Business Day, on the next succeeding Business Day, (ii) on the next Business Day after timely delivery to a nationally-recognized overnight courier and (iii) on the Business Day actually received if deposited in the U.S. mail (certified or registered mail, return receipt requested, postage prepaid). For purposes of this Agreement, "**Business Day**" shall mean any day on which the Exchange and commercial banks in the City of New York are open for business.

40

An electronic communication ("**Electronic Notice**") shall be deemed written notice for purposes of this Section 13 if sent to the electronic mail address specified by the receiving party under separate cover. Electronic Notice shall be deemed received at the time the party sending Electronic Notice receives confirmation of receipt by the receiving party (other than pursuant to auto-reply). Any party receiving Electronic Notice may request and shall be entitled to receive the notice on paper, in a nonelectronic form ("**Nonelectronic Notice**") which shall be sent to the requesting party within ten (10) days of receipt of the written request for Nonelectronic Notice.

14. Successors and Assigns. This Agreement and any Terms Agreement shall inure to the benefit of and be binding upon the Company and BTIG and their respective successors and permitted assigns and, as to Sections 5(b) and 10, the other indemnified parties specified therein. References to any of the Parties contained in this Agreement shall be deemed to include the successors and permitted assigns of such party. Nothing in this Agreement or any Terms Agreement, express or implied, is intended to confer upon any other person any rights, remedies, obligations or liabilities under or by reason of this Agreement or any Terms Agreement, except as expressly provided in this Agreement or any Terms Agreement. Neither party may assign its rights or obligations under this Agreement or any Terms Agreement without the prior written consent of the other party; *provided, however*, that BTIG may assign its rights and obligations hereunder or under any Terms Agreement to an affiliate of BTIG without obtaining the

15. Adjustments for Stock Splits. The Parties acknowledge and agree that all share-related numbers contained in this Agreement and any Terms Agreement shall be adjusted to take into account any stock split, stock dividend or similar event effected with respect to the Common Stock.

16. Entire Agreement; Amendment; Severability. This Agreement (including all schedules and exhibits attached hereto and Placement Notices and Terms Agreements issued pursuant hereto) constitutes the entire agreement and supersedes all other prior and contemporaneous agreements and undertakings, both written and oral, among the Parties with regard to the subject matter hereof. Neither this Agreement nor any term hereof or any Terms Agreement may be amended except pursuant to a written instrument executed by the Company and BTIG. In the event that any one or more of the terms or provisions contained herein, or the application thereof in any circumstance, is held invalid, illegal or unenforceable as written by a court of competent jurisdiction, then such provision shall be given full force and effect to the fullest possible extent that it is valid, legal and enforceable, and the remainder of the terms and provisions herein shall be construed as if such invalid, illegal or unenforceable term or provision was not contained herein, but only to the extent that giving effect to such term or provision and the remainder of the terms and provisions hereof shall be in accordance with the intent of the Parties as reflected in this Agreement.

41

17. GOVERNING LAW AND TIME; WAIVER OF JURY TRIAL. THIS AGREEMENT AND ANY TERMS AGREEMENT SHALL BE GOVERNED BY AND CONSTRUED IN ACCORDANCE WITH THE LAWS OF THE STATE OF NEW YORK WITHOUT REGARD TO THE PRINCIPLES OF CONFLICTS OF LAWS. SPECIFIED TIMES OF DAY REFER TO NEW YORK CITY TIME. THE COMPANY AND BTIG EACH HEREBY IRREVOCABLY WAIVES, TO THE FULLEST EXTENT PERMITTED BY APPLICABLE LAW, ANY AND ALL RIGHT TO TRIAL BY JURY IN ANY LEGAL PROCEEDING ARISING OUT OF OR RELATING TO THIS AGREEMENT OR ANY TERMS AGREEMENT OR THE TRANSACTIONS CONTEMPLATED HEREBY OR THEREBY.

18. CONSENT TO JURISDICTION. EACH PARTY HEREBY IRREVOCABLY SUBMITS TO THE NON-EXCLUSIVE JURISDICTION OF THE STATE AND FEDERAL COURTS SITTING IN THE CITY OF NEW YORK, BOROUGH OF MANHATTAN, FOR THE ADJUDICATION OF ANY DISPUTE HEREUNDER OR ANY TERMS AGREEMENT OR IN CONNECTION WITH ANY TRANSACTION CONTEMPLATED HEREBY OR THEREBY, AND HEREBY IRREVOCABLY WAIVES, AND AGREES NOT TO ASSERT IN ANY SUIT, ACTION OR PROCEEDING, ANY CLAIM THAT IT IS NOT PERSONALLY SUBJECT TO THE JURISDICTION OF ANY SUCH COURT, THAT SUCH SUIT, ACTION OR PROCEEDING IS BROUGHT IN AN INCONVENIENT FORUM OR THAT THE VENUE OF SUCH SUIT, ACTION OR PROCEEDING IS IMPROPER. EACH PARTY HEREBY IRREVOCABLY WAIVES PERSONAL SERVICE OF PROCESS AND CONSENTS TO PROCESS BEING SERVED IN ANY SUCH SUIT, ACTION OR PROCEEDING BY MAILING A COPY THEREOF (CERTIFIED OR REGISTERED MAIL, RETURN RECEIPT REQUESTED) TO SUCH PARTY AT THE ADDRESS IN EFFECT FOR NOTICES TO IT UNDER THIS AGREEMENT AND ANY TERMS AGREEMENT AND AGREES THAT SUCH SERVICE SHALL CONSTITUTE GOOD AND SUFFICIENT SERVICE OF PROCESS AND NOTICE THEREOF. NOTHING CONTAINED HEREIN SHALL BE DEEMED TO LIMIT IN ANY WAY ANY RIGHT TO SERVE PROCESS IN ANY MANNER PERMITTED BY LAW.

19. Absence of Fiduciary Relationship. The Company acknowledges and agrees that:

(a) BTIG is acting solely as agent in connection with the sale of the Shares in an Agency Transaction contemplated by this Agreement and the process leading to such transactions, and no fiduciary or advisory relationship between the Company or any of its respective affiliates, stockholders (or other equity holders), creditors or employees or any other party, on the one hand, and BTIG, on the other hand, has been or will be created in respect of any of the transactions contemplated by this Agreement or any Terms Agreement, irrespective of whether BTIG has advised or is advising the Company on other matters, and BTIG has no obligation to the Company with respect to the transactions contemplated by this Agreement or any Terms Agreement, except the obligations expressly set forth in this Agreement and any Terms Agreement;

42

(b) the Company is capable of evaluating and understanding, and understands and accepts, the terms, risks and conditions of the transactions contemplated by this Agreement;

(c) BTIG has not provided any legal, accounting, regulatory or tax advice with respect to the transactions contemplated by this Agreement or any Terms Agreement, and the Company has consulted its own legal, accounting, regulatory and tax advisors to the extent it has deemed appropriate;

(d) the Company is aware that BTIG and its affiliates are engaged in a broad range of transactions which may involve interests that differ from those of the Company, and BTIG has no obligation to disclose such interests and transactions to the Company by virtue of any fiduciary, advisory or agency relationship or otherwise; and

(e) the Company waives, to the fullest extent permitted by law, any claims it may have against BTIG for breach of fiduciary duty or alleged breach of fiduciary duty and agrees that BTIG shall have no liability (whether direct or indirect, in contract, tort or otherwise) to the Company in respect of such a fiduciary duty claim or to any person asserting a fiduciary duty claim on behalf of or in right of the Company, including stockholders, partners, employees or creditors of the Company.

20. Effect of Headings; Knowledge of the Company. The section and Exhibit headings herein are for convenience only and shall not affect the construction hereof. All references in this Agreement and any Terms Agreement to the "knowledge of the Company" or the "Company's knowledge" or similar qualifiers shall mean the actual knowledge of the directors and officers of the Company, after due inquiry.

21. Counterparts. This Agreement and any Terms Agreement may be executed in two or more counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument. Delivery of an executed Agreement or Terms Agreement by one party to the other may be made by facsimile or electronic transmission.

[Signature Page Follows]

43

If the foregoing correctly sets forth the understanding between the Company and BTIG, please so indicate in the space provided below for that purpose, whereupon this letter shall constitute a binding agreement between the Company and BTIG.

Very truly yours,

BULLFROG AI HOLDINGS, INC.

By: /s/ Vininder Singh

Name: Vininder Singh

Title: Chief Executive Officer

[Signature Page to ATM Sales Agreement]

ACCEPTED as of the date first-above written:

BTIG, LLC

By: /s/ Mike Passaro

Name: Mike Passaro

Title: Managing Director

[Signature Page to ATM Sales Agreement]

SCHEDULE 1

FORM OF PLACEMENT NOTICE

From: []
Cc: []
To: []
Subject: Placement Notice

Gentlemen:

Pursuant to the terms and subject to the conditions contained in the Sales Agreement between Bullfrog AI Holdings, Inc. (the “**Company**”) and BTIG, LLC (“**BTIG**”), dated April 25, 2025 (the “**Agreement**”), I hereby request on behalf of the Company that BTIG sell up to [] shares [\$] worth of shares of the Company’s Common Stock, par value \$0.00001 per share, subject to the Maximum Amount (the “**Shares**”), at market prices not lower than \$ [] per share, during the time period beginning [month, day, time] and ending [month, day, time].

[The Company may include such other sales parameters as it deems appropriate, subject to the terms and conditions of the Agreement.]

Terms used herein and not defined herein have the meanings ascribed to them in the Agreement.

SCHEDULE 1

SCHEDULE 2

COMPENSATION

BTIG shall be paid compensation equal to three percent (3%) of the gross proceeds from the sales of Shares pursuant to the terms of this Agreement.

SCHEDULE 2

SCHEDULE 3

BTIG, LLC*

BTIGUSATMTrading@btig.com
BTIGcompliance@btig.com
IBLegal@btig.com
btigcorporateservices@btig.com
Carrie Taylor (ctaylor@btig.com)
Allen Reed (areed@btig.com)
Kathleen Carney (kcarney@btig.com)
Nerissa Wilson (nwilson@btig.com)
Jairo McCoy (jmccoy@btig.com)
Joe Jacques (jjacques@btig.com)
John Tufts (jtufts@btig.com)

* BTIG, LLC shall be entitled in its sole discretion to revise, amend and supplement this list of persons from time to time.

BULLFROG AI HOLDINGS, INC.**

Vininder Singh (vin.singh@bullfrogai.com)
Josh Blacher (josh.blacher@bullfrogai.com)
David Caplon (david.caplon@bullfrogai.com)

** Bullfrog AI Holdings, Inc. shall be entitled in its sole discretion to revise, amend and supplement this list of persons from time to time.

SCHEDULE 3

SCHEDULE 4

SIGNIFICANT SUBSIDIARIES

Name of Subsidiary

Jurisdiction of Incorporation or Organization

Bullfrog AI, Inc
Bullfrog Management, LLC

Delaware
Maryland

SCHEDULE 4

Exhibit 7(m)

OFFICER'S CERTIFICATE

*The undersigned, the duly qualified and appointed _____ of Bullfrog AI Holdings, Inc., a Nevada corporation (the "**Company**"), does hereby certify in such capacity and on behalf of the Company, pursuant to Section 7(m) of the Sales Agreement, dated April 25, 2025 (the "**Sales Agreement**"), between the Company and BTIG, that:*

- (i) the representations and warranties of the Company in Section 6 of the Sales Agreement (A) to the extent such representations and warranties are subject to qualifications and exceptions contained therein relating to materiality or Material Adverse Effect, such representations and warranties are true and correct on and as of the date hereof, except for those representations and warranties that speak solely as of a specific date and which were true and correct as of such date, with the same force and effect as if expressly made on and as of the date hereof, and (B) to the extent such representations and warranties are not subject to any qualifications or exceptions, such representations and warranties are true and correct in all material respects as of the date hereof as if made on and as of the date hereof, except for those representations and warranties that speak solely as of a specific date and which were true and correct as of such date, with the same force and effect as if expressly made on and as of the date hereof;
- (ii) the Company has complied with all agreements and satisfied all conditions on its part to be performed or satisfied pursuant to the Sales Agreement at or prior to the date hereof;
- (iii) as of the date hereof, (i) the Registration Statement does not contain any untrue statement of a material fact or omit to state a material fact required to be stated therein or necessary in order to make the statements therein not misleading, (ii) the Prospectus does not contain any untrue statement of a material fact or omit to state a material fact required to be stated therein or necessary in order to make the statements therein, in light of the circumstances under which they were made, not misleading and (iii) no event has occurred as a result of which it is necessary to amend or supplement the Registration Statement or the Prospectus in order to make the statements therein not untrue or misleading for clauses (i) and (ii) above, respectively, to be true and correct;
- (iv) there has been no material adverse change since the date as of which information is given in the Prospectus, as amended or supplemented;
- (v) the Company does not possess any material non-public information; and
- (vi) the aggregate offering price of the Shares that may be issued and sold pursuant to the Sales Agreement and the maximum number or amount of Shares that may be sold pursuant to the Sales Agreement have been duly authorized by the Company's board of directors or a duly authorized committee thereof.

Terms used herein and not defined herein have the meanings ascribed to them in the Sales Agreement.

By: _____

Name: _____

Title: _____

Date: _____

Ballard Spahr LLP

1735 Market Street, 51st Floor
Philadelphia, PA 19103-7599
TEL 215.665.8500
FAX 215.864.8999
www.ballardspahr.com

April 25, 2025

Bullfrog AI Holdings, Inc.
325 Ellington Blvd
Unit 317
Gaithersburg, MD 20878

RE: Bullfrog AI Holdings, Inc. Offering

Ladies and Gentlemen:

We have acted as counsel to Bullfrog AI Holdings, Inc., a Nevada corporation (the “Company”), and are rendering this opinion in connection with the At-The-Market Sales Agreement, dated April 25, 2025 (the “Agreement”), by and between the Company and BTIG, LLC (“BTIG”). The Agreement provides for the sale by the Company, from time to time, through BTIG as agent, of shares of the Company’s common stock, par value \$0.00001 per share (the “Common Stock”), having an aggregate gross sales price to the public of up to \$20,000,000 (the “Shares”).

We have examined the following documents: (i) the Registration Statement on Form S-3 (File No. 333-281341), filed with the Securities and Exchange Commission (the “Commission”) pursuant to the Securities Act of 1933, as amended (the “Act”), on August 7, 2024, as amended on August 15, 2024, and declared effective by the Commission on August 21, 2024, relating to the Shares (as amended, the “Registration Statement”); (ii) the prospectus dated August 21, 2024, and all documents incorporated by reference therein (the “Base Prospectus”); (iii) the prospectus supplemented to the Base Prospectus, in the form in which it was filed with the Commission on April 25, 2025, and all documents incorporated by reference therein (the “Prospectus Supplement” and, together with the Base Prospectus, the “Prospectus”); (iv) the form of Agreement; (v) certain resolutions of the Board of Directors of the Company; (vi) the Amended and Restated Articles of Incorporation of the Company, filed with the Nevada Secretary of State on February 18, 2020 (the “Certificate”); (vii) the Bylaws of the Company, dated April 16, 2020 (the “Bylaws”); (viii) such other corporate records, agreements, documents and instruments; and (ix) such certificates or comparable documents of public officials and other sources, believed by us to be reliable, and of officers and representatives of the Company, and have made such inquiries of such officers and representatives, as we have deemed relevant and necessary as a basis for the opinions hereinafter set forth.

Bullfrog AI Holdings, Inc.
April 25, 2025
Page 2

We have reviewed such documents and made such examination of law as we have deemed appropriate to give the opinion set forth below. In such examination, we have assumed the genuineness of all signatures, the legal capacity of all natural persons, the authenticity of all documents submitted to us as originals, the conformity to original documents of all documents submitted to us as certified, conformed or photostatic copies and the authenticity of the originals of such latter documents. We have relied, without independent verification, on certificates of public officials and, as to matters of fact material to the opinion set forth below, on certificates of officers of the Company.

Based on the foregoing and subject to the limitations, qualifications and assumptions set forth herein, we are of the opinion that the Shares have been duly authorized for issuance and, when delivered and paid for in accordance with the terms of the Agreement, will be validly issued, fully paid and non-assessable shares of Common Stock.

We express no opinion as to the laws of any jurisdiction other than the federal laws of the United States of America and the laws of the State of Nevada. Our opinion is limited to the matters stated herein and no opinion is implied or may be inferred beyond the matters expressly stated. Our opinion is based on these laws as in effect on the date hereof, and we disclaim any obligation to advise you of facts, circumstances, events or developments which hereafter may be brought to our attention and which may alter, affect or modify the opinion expressed herein.

We hereby consent to the inclusion of this opinion as Exhibit 5.1 to this Current Report on Form 8-K (and its incorporation by reference in the Registration Statement) and to the use of our firm’s name under the caption “Legal Matters” in the Prospectus Supplement. In giving our consent, we do not admit that we are in the category of persons whose consent is required under Section 7 of the Securities Act or the rules and regulations thereunder.

Sincerely yours,

/s/ Ballard Spahr LLP