

**UNITED STATES
SECURITIES AND EXCHANGE COMMISSION**
Washington, D.C. 20549

**AMENDMENT NO. 3
TO
FORM S-1
REGISTRATION STATEMENT
UNDER
THE SECURITIES ACT OF 1933**

Delcath Systems, Inc.

(Exact name of registrant as specified in its charter)

Delaware
(State or other jurisdiction of
incorporation or organization)

3841
(Primary Standard Industrial
Classification Code Number)

06-1245881
(I.R.S. Employer
Identification No.)

1633 Broadway
Suite 22C
New York, New York 10019
(212) 489-2100

(Address, including zip code, and telephone number, including area code, of registrant's principal executive offices)

Jennifer K. Simpson
President and
Chief Executive Officer
Delcath Systems, Inc.
1633 Broadway
Suite 22C
New York, New York 10019
(212) 489-2100

(Name, address, including zip code, and telephone number, including area code, of agent for service)

Copies of all communications, including communications sent to agent for service, should be sent to:

Jolie Kahn, Esq.
Wexler, Burkhart, Hirschberg & Unger
377 Oak Street
Garden City, NY 11530
(516) 222-2230

Spencer G. Feldman, Esq.
Olshan Frome Wolosky LLP
1325 Avenue of the Americas, 15th Floor
New York, New York 10019
(212) 451-2300

**Approximate date of commencement of proposed sale to the public:
As soon as practicable after this Registration Statement becomes effective.**

If any of the securities being registered on this Form are to be offered on a delayed or continuous basis pursuant to Rule 415 under the Securities Act of 1933, check the following box.

If this Form is filed to register additional securities for an offering pursuant to Rule 462(b) under the Securities Act of 1933, please check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering.

If this Form is a post-effective amendment filed pursuant to Rule 462(c) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering.

If this Form is a post-effective amendment filed pursuant to Rule 462(d) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering.

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company" and "emerging growth company" in Rule 12b-2 of the Exchange Act. (Check One):

Large accelerated filer Accelerated filer
Non-accelerated filer Smaller reporting company
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 7(a)(2)(B) of the Securities Act.

CALCULATION OF REGISTRATION FEE

Title of Each Class of Securities to be Registered ⁽¹⁾	Amount to be Registered	Proposed Maximum Offering Price Per Right	Proposed Maximum Aggregate Offering Price	Amount of Registration Fee
Subscription Rights to purchase Common Stock, \$0.01 par value per share	—	—	—	— ⁽²⁾
Common Stock, \$0.01 par value per share ⁽⁵⁾	—	—	\$50,000,000 ⁽³⁾	\$6,225 ⁽⁴⁾
Total	—	—	\$50,000,000⁽³⁾	\$6,225

- (1) This registration statement relates to (a) non-transferable subscription rights to purchase common stock of the registrant, which subscription rights are to be issued to holders of the registrant's common stock on a pro rata basis without consideration, and (b) the shares of the registrant's common stock issuable upon the exercise of such non-transferable subscription rights.
- (2) The subscription rights are being issued without consideration. Pursuant to Rule 457(g) under the Securities Act of 1933, as amended, no separate registration fee is payable with respect to the subscription rights being offered hereby since the subscription rights are being registered in the same registration statement as the securities to be offered pursuant thereto.
- (3) Estimated solely for the purpose of calculating the registration fee pursuant to Rule 457(c) under the Securities Act. In no event will the aggregate maximum offering price of all securities issued pursuant to this registration statement exceed \$50,000,000.
- (4) The Company paid the fee with the original filing of this S-1 registration statement.
- (5) Represents maximum number of shares issuable upon exercise of subscription rights.

The registrant hereby amends this Registration Statement on such date or dates as may be necessary to delay its effective date until the registrant shall file a further amendment which specifically states that this Registration Statement shall thereafter become effective in accordance with Section 8(a) of the Securities Act of 1933, as amended, or until this Registration Statement shall become effective on such date as the Securities and Exchange Commission, acting pursuant to said Section 8(a), may determine.

EXPLANATORY NOTE

This Amendment No. 3 (the "Amendment") to the Registration Statement on Form S-1 (File No. 333-225567) (the "Form S-1") of Delcath Systems, Inc. is being filed solely for the purpose of refiling Exhibit 5.1 and adding new Exhibits 10.5 and 10.6 to the Form S-1. Accordingly, the Amendment consists solely of the facing page, this explanatory note, Part II of the Form S-1 and the signatures, and is not intended to amend or delete any part of the Form S-1 except as specifically noted herein.

PART II

Item 13. Other expenses of issuance and distribution

The following table sets forth the costs and expenses, other than placement agent fees to be paid by us in connection with the sale of common shares being registered hereby. All amounts are estimates except for the SEC registration fee and the FINRA filing fee.

SEC registration fee	\$ 6,225
FINRA filing fee	8,000
Legal fees and expenses	125,000
Accounting fees and expenses	80,000
Printing and engraving expenses	60,000
Transfer agent and registrar fees and expenses	10,000
Other expenses	20,000
Total	<u>\$ 309,225</u>

Item 14. Indemnification of directors and officers

Section 102(b)(7) of the DGCL allows a corporation to provide in its certificate of incorporation that a director of the corporation will not be personally liable to the corporation or its stockholders for monetary damages for breach of fiduciary duty as a director, except where the director breached the duty of loyalty, failed to act in good faith, engaged in intentional misconduct or knowingly violated a law, authorized the payment of a dividend or approved a stock repurchase in violation of Delaware corporate law or obtained an improper personal benefit. Our amended and restated certificate of incorporation provides for this limitation of liability.

Section 145 of the DGCL, or Section 145, provides that a Delaware corporation may indemnify any person who was, is or is threatened to be made, party to any threatened, pending or completed action, suit or proceeding, whether civil, criminal, administrative or investigative (other than an action by or in the right of such corporation), by reason of the fact that such person is or was an officer, director, employee or agent of such corporation or is or was serving at the request of such corporation as a director, officer, employee or agent of another corporation or enterprise. The indemnity may include expenses (including attorneys' fees), judgments, fines and amounts paid in settlement actually and reasonably incurred by such person in connection with such action, suit or proceeding, provided such person acted in good faith and in a manner he reasonably believed to be in or not opposed to the corporation's best interests and, with respect to any criminal action or proceeding, had no reasonable cause to believe that his or her conduct was illegal. A Delaware corporation may indemnify any persons who are, were or are a party to any threatened, pending or completed action or suit by or in the right of the corporation by reason of the fact that such person is or was a director, officer, employee or agent of another corporation or enterprise. The indemnity may include expenses (including attorneys' fees) actually and reasonably incurred by such person in connection with the defense or settlement of such action or suit, provided such person acted in good faith and in a manner he reasonably believed to be in or not opposed to the corporation's best interests, provided that no indemnification is permitted without judicial approval if the officer, director, employee or agent is adjudged to be liable to the corporation. Where an officer or director is successful on the merits or otherwise in the defense of any action referred to above, the corporation must indemnify him against the expenses which such officer or director has actually and reasonably incurred.

Section 145 further authorizes a corporation to purchase and maintain insurance on behalf of any person who is or was a director, officer, employee or agent of the corporation or is or was serving at the request of the corporation as a director, officer, employee or agent of another corporation or enterprise, against any liability asserted against him and incurred by him in any such capacity, or arising out of his or her status as such, whether or not the corporation would otherwise have the power to indemnify him under Section 145.

Our amended and restated bylaws provides that we must indemnify our directors and officers to the fullest extent permitted by the DGCL and must also pay expenses incurred in defending any such proceeding in advance of its final disposition upon delivery of an undertaking, by or on behalf of an indemnified person, to repay all amounts so advanced if it should be determined ultimately that such person is not entitled to be indemnified.

We have entered into indemnification agreements with certain of our executive officers and directors pursuant to which have agreed to indemnify such persons against all expenses and liabilities incurred or paid by such person in connection with any proceeding arising from the fact that such person is or was an officer or director of our company, and to advance expenses as incurred by or on behalf of such person in connection therewith.

The indemnification rights set forth above shall not be exclusive of any other right which an indemnified person may have or hereafter acquire under any statute, provision of our certificate of incorporation, our bylaws, agreement, vote of stockholders or disinterested directors or otherwise.

We maintain standard policies of insurance that provide coverage (1) to our directors and officers against loss rising from claims made by reason of breach of duty or other wrongful act and (2) to us with respect to indemnification payments that we may make to such directors and officers.

The proposed form of Placement Agency Agreement to be filed as Exhibit 1.1 to this Registration Statement will provide for indemnification of our directors and officers by the placement agent party thereto against certain liabilities. See "Item 17. Undertakings" for a description of the SEC's position regarding such indemnification provisions.

Item 15. Recent sales of unregistered securities

On June 6, 2016, the Company completed a private placement, exempt for registration purposes under Section 4(a)(2) of the Securities Act, of \$35 million aggregate principal amount of senior secured convertible notes (the "Notes") pursuant to a Securities Purchase Agreement dated June 6, 2016 (the "SPA") between the Company and certain institutional investors as set forth in the Schedule of Buyers attached to the SPA, as described in the Company's Form 8-K filed with the Securities and Exchange Commission on June 7, 2016.

The Notes were issued at an 8 percent original issue discount to the principal amount of Notes (a purchase price of \$920 for each \$1,000 principal amount of Notes and related warrants) for aggregate proceeds of \$32.2 million. The Notes do not bear any ordinary interest and provide that the Company will repay the principal amount of the Notes in equal monthly installments beginning seven months after the original date of issuance.

The Company also issued warrants to purchase 6.8 million additional shares of common stock to such institutional investors concurrently with the issuance of the Notes. The Company repurchased all of such warrants for cash, effective as of March 31, 2017.

On June 29, 2017, our Board authorized the establishment of a new series of preferred stock designated as Series A Preferred Stock, \$0.01 par value, the terms of which are set forth in the certificate of designations for such series of Preferred Stock (the "Series A Certificate of Designations") which was filed with the State of Delaware on June 30, 2017 (together with any preferred shares issued in replacement thereof in accordance with the terms thereof, the "Series A Preferred Stock"). On July 2, 2017, we entered into an exchange agreement (the "Exchange") with one of our investors which had purchased certain senior secured convertible notes (the "Notes"), convertible into shares of our common stock pursuant to a certain June 6, 2016 securities purchase agreement, of \$4.2 million aggregate principal amount of such Notes for 4,200 shares of Series A Preferred Stock (the "Series A Preferred Shares"). The Exchange was made in reliance upon the exemption from registration provided by Rule 3(a)(9) of the Securities Act of 1933, as amended. The Series A Preferred Shares were entitled to the whole number of votes equal to \$4.2 million divided by \$1,288.00 (the closing bid price on June 13, 2016, the date of issuance of the Notes as adjusted for the reverse stock split effected in July 2016,) or 3,261 votes. The Series A Preferred Stock had no dividend, liquidation or other preferential rights to our common stock, and each share of Series A Preferred Stock was redeemed for the amount of \$0.01 on August 28, 2017.

On July 11, 2017, we entered into an Amended and Restated Securities Purchase Agreement (the “Amended Purchase Agreement”) with certain institutional investors for the sale by the Company of 2,360 shares of Series B Preferred Stock (the “Series B Preferred Stock”) at a purchase price of \$1,000 per share, in a private placement. The aggregate gross proceeds for the sale of the Series B Preferred Stock is \$2.0 million. The Company intends to use the proceeds from the transaction for general corporate purposes. The restricted shares of Series B Preferred Stock have no registration rights and thus will not be eligible for legend removal for a period of at least six months from the date of closing. This Amended Purchase Agreement amends the July 5, 2017 Securities Purchase Agreement (the “Purchase Agreement”) into which we entered with certain institutional investors (the “Investors”) for the sale by the Company of 2,360 shares of Series B Preferred Stock in a registered direct offering. The Series B Preferred Stock shall be entitled to the whole number of votes equal to \$2.0 million divided by \$65.35 (the closing bid price on July 5, 2017, the date of sale of the Series B Preferred Stock), or 30,607 votes. The Series B Preferred Stock has no liquidation or other rights which are preferential to our common stock. The Series B Preferred Stock was redeemed for \$2,360,000 in August 2017.

On August 28, 2017, the Company entered into a Restructuring Agreement (the “Agreement”) with one of the institutional investors (the “Investor”) who was a party to the SPA. As of the date the Agreement was entered into, the Investor held \$11,444,637 aggregate principal amount of Notes of which there was \$10,092,857 aggregate Restricted Principal, (as defined in the Notes) of Notes (the “Restricted Notes”), secured by such aggregate cash amount held in a collateral account of the Company in the same amount (the “Restricted Cash”) and (y) \$1,351,780 principal of Notes (the “Unrestricted Notes”), (ii) 4,200 shares of Series A Preferred Stock and (iii) 2,006 shares of Series B Convertible Preferred Stock.

Pursuant to the Agreement, (a) on the date thereof the Company and the Investor took the following actions (the “Initial Restructuring”): (i) the Investor released restrictions on \$1,650,000 of Restricted Cash (the “Initial Release”), (ii) the Investor consented to the use of additional Restricted Cash to effect redemptions of the Series A Preferred Shares and the Series B Preferred Shares, (iii) the Investor cancelled \$1,200,000 aggregate principal of the Notes (such portion of the Notes, the “Cancellation Note”), (iv) the Company redeemed all the Series A Preferred Shares outstanding for a cash payment to the Investor of \$4.20 and (v) the Company redeemed the Series B Preferred Shares for a cash payment to the Investor of \$2,006,000 and (b) upon the consummation of a reverse stock split of our Common Stock of at least twenty to one (the “Reverse Stock Split Event”, and such date, the “Reverse Stock Split Date”) by September 15, 2017, the Company and the Investor shall have taken the following actions (the “Additional Restructuring”, and together with the Initial Restructuring, the “Restructuring”): (i) the Investor shall consent to the use of Restricted Cash to effect redemptions of \$4,000,000 aggregate Restricted Principal of the Restricted Notes (such portion of the Restricted Notes, the “Redemption Notes”), (ii) the Company shall redeem the Redemption Notes for a redemption price of \$6,436,852.80 (the “Redemption Price”) and (iii) the Company shall exchange (the “Exchange”), pursuant to Section 4(a)(2) of the Securities Act of 1933, as amended, \$2,436,852.80 aggregate Restricted Principal of the Restricted Notes (such portion of the Restricted Notes, the “Exchange Notes”, and together with the Redemption Notes, the “Restructured Notes”) for new warrants to purchase 114,286 shares of its Common Stock (the “New Warrants”, as exercised, the “New Warrant Shares”). The New Warrants expire on the 42 month anniversary of the date of issuance and bear an exercise price of \$122.50 per share (which shall be adjusted to the new lower purchase price per share if there is a subsequent “down round” financing). The Investor, in lieu of an exercise of the New Warrants pursuant to a cash payment of the aggregate exercise price of the number of New Warrants being exercised, may exercise the New Warrants, in whole or in part, by electing instead to receive upon such exercise two shares and one hundred and twenty-five thousandths of a share of the Company’s Common Stock for each Warrant Share exercised pursuant to this provision. The transactions set forth herein were being made in reliance upon the exemption from registration provided by Rule 4(a)(2) of the Securities Act of 1933, as amended (the “1933 Act”) and Rule 144(d)(3)(ii) of the 1933 Act. As a result of not having effected a reverse stock split by September 15, 2017, the Additional Restructuring did not occur.

Amendment to Restructuring Agreement

As a result of the lack of requisite approval by Delcath stockholders for the Company's proposed reverse stock split, the parties and the two investors in the Notes entered into an amendment to the August restructuring agreement on October 10, 2017 as follows: (i) on the date that the Company effects a reverse split of its common stock, (x) the Company will exchange, pursuant to Section 4(a)(2) of the Securities Act of 1933, as amended, an aggregate principal amount of those notes equal to \$279,015 for new warrants to purchase an aggregate of 127,551 shares of Common Stock, and the Company shall redeem all the Series C Preferred Shares then outstanding for a cash payment of \$590,000 and (ii) upon the initial consummation, on or prior to December 15, 2017, by the Company of the offering contemplated by the registration statement on Form S-1 that was filed with the SEC on October 11, 2017 the following shall occur: (i) pursuant to Section 3(b) of the Restricted Notes, the Company shall be deemed (as adjusted downward by the Black-Scholes value of the warrants being issued in this offering) to have automatically, and irrevocably, adjusted the conversion price of the Notes to 200% of the purchase price of a share of our common stock in the offering contemplated by the registration statement, (ii) the maturity date (as defined in the notes) shall automatically be extended to the earlier to occur of (x) the first anniversary of the date of consummation of the offering contemplated by the registration statement and (y) December 30, 2018, (iii) until the earlier of (x) this maturity date and (y) the 75th calendar day after the date of consummation of the offering contemplated by the registration statement, all installments to be made under the notes shall be deemed automatically deferred with no conversions during that 75 day period, (iv) the Company agreed to redeem any portion of the outstanding notes at any time requested by either investor thereto with \$7.3 million in cash to be reduced by \$0.6 million to redeem the Series C Preferred Stock remaining in the restricted accounts with respect to the 2016 convertible notes and (v) the conversion floor price on the notes is \$0.05 and not subject to adjustments.

On September 21, 2017, we entered into a securities purchase agreement (the "SPA") with two of our investors which had purchased certain senior secured convertible notes (the "Notes"), convertible into shares of our common stock pursuant to a certain June 6, 2016 securities purchase agreement, of \$0.5 million aggregate purchase price for 590 shares of Series C Preferred Stock (the "Series C Preferred Shares"). The purchase of the Series C Preferred Stock is being made in reliance upon the exemption from registration provided by Rule 4(a)(2) of the Securities Act of 1933, as amended. The Series C Preferred Shares shall be entitled to 1,484,061 votes and may only vote on approval of a reverse split of our outstanding common stock. The Series C Preferred Stock has no dividend, liquidation or other preferential rights to our common stock, and each share of Series C Preferred Stock shall be redeemable for the amount of \$1,000.00, payable in cash, per share at our written election, and must be redeemed by us no later than December 21, 2017. The Series C Preferred Stock was redeemed for \$590,000 in November 2017.

On November 15, 2017, Delcath Systems, Inc. (the "Company") entered into exchange agreements ("Exchange Agreements") with each of the two investors from its June 2016 private placement of senior secured convertible notes as contemplated by that certain Securities Purchase Agreement, dated June 6, 2016, by and among the Company and such investors. As of November 15, 2017, those investors held \$11,157,970 aggregate principal amount of investor notes (the "Investor Notes"), including (a) such aggregate principal amount of the Investor Notes as set forth on the signature page of the Investor hereto that does not include Restricted Principal as of the date hereof and all accrued and unpaid interest under the Investor Notes (such portion of the Investor Notes, the "Unrestricted Investor Notes") and such aggregate principal amount of the Investor Notes as set forth on the signature page of the investors hereto that solely consists of Restricted Principal as of the date hereof (such portion of the Investor Notes, the "Restricted Investor Notes").

On November 15, 2017, the Company authorized a new series of senior secured convertible notes of the Company, in the aggregate original principal amount as set forth above (the "Exchange Notes"), which Exchange Notes shall be convertible into shares of Common Stock in accordance with the terms of the Exchange Notes. Subject to the terms and conditions of the Exchange Agreements, the Company and the investors exchanged (the "Exchange") the Unrestricted Investor Notes for (a) \$10,562,425 aggregate principal amount of the Exchange

Notes (the “New Notes”, and the shares of Common Stock issuable pursuant to the terms of the New Notes, including, without limitation, upon conversion or otherwise, collectively, the “New Conversion Shares”) and (b) warrants to purchase an aggregate of 7,000,000 shares of Common Stock (the “New Warrants”, as exercised, the “New Warrant Shares”).

The New Conversion Shares and the New Warrant Shares are collectively referred to herein as the “New Underlying Securities” and, together with the New Notes and the New Warrants, the “New Securities”.

The New Notes, which were satisfied in full on December 28, 2017, bore the following terms:

- The New Notes did not bear interest except upon the occurrence of an event of default upon which the interest rate is 15% per annum.
- The initial conversion price was \$1.50 per share for an optional conversion and at any time, an investor could have instead engaged in an alternate conversion for which the conversion price is 82% (75% if an event of default) of the lowest volume weighted average price for the Company’s common stock on the three trading days prior to and including the date of the conversion. All conversions attributable to the Restricted Notes could have been converted at the lower of the optional conversion price and the alternate conversion price, then in effect.
- The obligation to prepay the Notes was extended to March 31, 2018, except in the case of an event of default or change in control.
- Assuming equity conditions as stated in the New Notes are met, the investors would consent to release cash to the Company from the existing controlled accounts upon conversion of the New Notes.
- The New Notes contained provisions waiving Section 8 of the Restricted Investor Notes, including, without limitation, any requirements for the Company to effect installment conversions or redemptions.
- The New Notes contained customary and usual terms including but not limited to, events of default upon failure to trade on an eligible market, failure to timely deliver shares upon conversion, failure to maintain converted share reserve, for conversions, failure to make payments thereunder when due, failure to remove legends, cross defaults to other indebtedness, bankruptcy and the like, and any material adverse effect in the Company’s financial condition, as well as remedies and negative covenants substantially similar to those in the Investor Notes.

The New Warrants bear the following terms:

- The Warrants will be exercisable for five years from the date of issuance.
- The initial exercise price of the warrants is 115% of the closing bid price of the Company’s common stock as of the trading day ended immediately prior to the time of execution of the Exchange Agreement.
- The Warrants contain full antidilution ratchet protection from lowered price securities issuances subsequent to the date of issuance for six months from the date of issuance and most favored nations protection for a year from the date of issuance.
- The Warrants are exercisable on a cashless basis to the extent at any time commencing on the one year anniversary of the date of issuance the issuance of underlying securities is not covered by an effective registration statement.
- To the extent the investors elect to apply any amounts in their controlled accounts to the balances of the New Notes, the number of shares into which the applicable New Warrant is exercisable shall be reduced by a formula set forth in the New Warrants.

On December 28, 2017, we entered into exchange agreements (collectively, “Exchange Agreements”), each by and between us and an investor from its June 2016 private placement of senior secured convertible notes (as

further exchanged, the “Notes”) originally issued pursuant to that certain Securities Purchase Agreement, dated June 6, 2016, by and among us and such investors. Pursuant to the Exchange Agreements, we (i) extinguished our remaining \$3,027,408 in outstanding obligations under the Notes in full, (ii) obtained a release of restrictions on \$2,046,897.66 in restricted cash held in our control accounts, (iii) issued to the investors shares (the “Shares”) of our common stock (or rights (“Rights”) to receive common stock to the extent such issuance of Shares would otherwise result in the beneficial ownership by any such investor of more than 4.9% or 9.9% of our issued and outstanding stock), as applicable, of an aggregate of 123,708,735 shares of our common stock (in each case, subject to trading restrictions set forth in leak out agreements we separately entered into with each investor (collectively, the “Leak-Out Agreements”)) and (iv) a cash payment to the investors of \$829,830.54 from the restricted cash held in our control accounts. The number of shares of our issued and outstanding common stock immediately following issuance of the initial Shares to the investors is 114,054,852.

The Rights may be exercised in whole or in part by an investor, without payment of additional consideration, at any time an investor would not beneficially own more than 4.9% or 9.9% (as set forth in the applicable Exchange Agreement) of our common stock (along with any shares of our common stock owned by any Attribution Parties) outstanding immediately after giving effect to such exercise. The Shares and Rights were issued in transactions exempt from registration under Section 4(a)(2) of the Securities Act of 1933, as amended, and the Shares and Rights were also issued in compliance with Section 3(a)(9) thereunder such that for Rule 144 purposes the holding period for the Shares and Rights and shares of our common stock underlying the Rights may be tacked onto the holding period of the Notes.

The transactions set forth herein were being made in reliance upon the exemption from registration provided by Rule 4(a)(2) of the Securities Act of 1933, as amended (the “1933 Act”). As of the date of this Prospectus, all of the Rights have been exercised, and neither investor owns more than 4.9% of the issued and outstanding shares of our common stock.

Item 16. Exhibits and Financial Statement Schedules

(a) Exhibits

All schedules have been omitted because the information required to be set forth in the schedules is either not applicable or is shown in the financial statements or notes thereto.

EXHIBIT INDEX

<u>Exhibit</u>	<u>Description</u>
1.1	<u>Form of Dealer-Manager Agreement with Advisory Group Equity Services, Ltd., doing business as RHK Capital*</u>
1.2	<u>Form of Non-Transferable Subscription Rights Certificate*</u>
3.1	<u>Amended and Restated Certificate of Incorporation of the Company, as amended to June 30, 2005 (incorporated by reference to Exhibit 3.1 to Company's Current Report on Form 8-K filed June 5, 2006 (Commission File No. 001-16133))</u>
3.2	<u>Certificate of Amendment to the Amended and Restated Certificate of Incorporation of the Company, effective as of April 8, 2014 (incorporated by reference to Exhibit 3.1 to Company's Current Report on Form 8-K filed April 8, 2014 (Commission File No. 001-16133))</u>
3.3	<u>Certificate of Amendment to the Amended and Restated Certificate of Incorporation of the Company, effective as of July 20, 2016 (incorporated by reference to Exhibit 3.1 to Company's Current Report on Form 8-K filed July 21, 2016 (Commission File No. 001-16133))</u>
3.4	<u>Certificate of Amendment to the Amended and Restated Certificate of Incorporation of the Company, effective as of July 20, 2016 (incorporated by reference to Exhibit 3.2 to Company's Current Report on Form 8-K filed July 21, 2016 (Commission File No. 001-16133))</u>
3.5	<u>Amended and Restated By-Laws of the Company (incorporated by reference to Exhibit 3.2 to Amendment No. 1 to Company's Registration Statement on Form SB-2 (Registration No. 333-39470))</u>
3.6	<u>Certificate of Amendment to the Amended and Restated Certificate of Incorporation of the Company, effective as of June 30, 2017 (incorporated by reference to Exhibit 3.1 to the Company's Current Report on Form 8-K filed July 3, 2017 (Commission File No. 001-16133))</u>
3.7	<u>Certificate of Amendment to the Amended and Restated Certificate of Incorporation of the Company, effective as of July 5, 2017 (incorporated by reference to Exhibit 3.1 to the Company's Current Report on Form 8-K filed July 6, 2017 (Commission File No. 001-16133))</u>
3.8	<u>Certificate of Amendment to the Amended and Restated Certificate of Incorporation of the Company, effective as of September 20, 2017 (incorporated by reference to Exhibit 3.1 of the Company's Current Report on Form 8-K filed September 21, 2017 (Commission File No. 001-16133))</u>
3.9	<u>Certificate of Amendment to the Amended and Restated Certificate of Incorporation of the Company, effective as of May 2, 2018*</u>
5.1	<u>Opinion of Wexler, Burkhart, Hirschberg & Unger LLP</u>
8.1	<u>Opinion of Tax Counsel*</u>
10.1	<u>Form of Securities Purchase Agreement (incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed June 8, 2018 (Commission File No. 001-16133))</u>
10.2	<u>Form of Information Agent Agreement with D.F. King & Co., Inc.*</u>
10.3	<u>Form of First Amendment to Securities Purchase Amendment (incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed July 26, 2018 (Commission file No. 001-16133))</u>
10.4	<u>Form of First Amendment to Warrants to Purchase Common Stock (incorporated by reference to Exhibit 10.2 to the Company's Current Report on Form 8-K filed July 26, 2018 (Commission file No. 001-16133))</u>
10.5	<u>Backstop Commitment Purchase Agreement, dated June 4, 2018, by and between Delcath Systems, Inc. and Discover Growth Fund</u>
10.6	<u>Backstop Commitment Purchase Agreement, dated July 20, 2018, by and between Delcath Systems, Inc. and Discover Growth Fund, LLC</u>
23.1	<u>Consent of Grant Thornton, LLP*</u>
23.2	<u>Consent of Wexler, Burkhardt, Hirschberg & Unger (included as part of Exhibit 5.1)</u>

<u>Exhibit</u>	<u>Description</u>
23.3	Consent of Jolie Kahn, Esq. (included as part of Exhibit 8.1)*
24.1	Powers of Attorney (included on signature page to this Registration Statement)
99.1	Form of Instructions as to Use of Subscription Rights Statements*
99.2	Form of Letter to Stockholders Who Are Record Holders*
99.3	Form of Beneficial Ownership Election Form*
99.4	Form of Letter to Brokers, Dealers, Banks and Other Nominees*
99.5	Form of Broker Letter to Clients Who Are Beneficial Holders*
99.6	Form of Nominee Holder Certification*

* Incorporated by reference from Amendment No. 2 to the Company's Registration Statement on Form S-1, filed with the Commission on July 30, 2018

Item 17. Undertakings

(1) The undersigned registrant hereby undertakes to provide to the placement agent at the closing specified in the Placement Agency Agreement certificates in such denominations and registered in such names as required by the placement agent to permit prompt delivery to each purchaser.

(2) Insofar as indemnification for liabilities arising under the Securities Act may be permitted to directors, officers and controlling persons of the registrant pursuant to the foregoing provisions, or otherwise, the registrant has been advised that in the opinion of the Securities and Exchange Commission such indemnification is against public policy as expressed in the Act and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment by the registrant of expenses incurred or paid by a director, officer or controlling person of the registrant in the successful defense of any action, suit or proceeding) is asserted by such director, officer or controlling person in connection with the securities being registered, the registrant will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question whether such indemnification by it is against public policy as expressed in the Act and will be governed by the final adjudication of such issue.

(3) The undersigned registrant hereby undertakes that:

(a) For purposes of determining any liability under the Securities Act, the information omitted from the form of prospectus filed as part of this registration statement in reliance upon Rule 430A and contained in a form of prospectus filed by the registrant pursuant to Rule 424(b)(1) or (4) or 497(h) under the Securities Act shall be deemed to be part of this registration statement as of the time it was declared effective.

(b) For the purpose of determining any liability under the Securities Act, each post-effective amendment that contains a form of prospectus shall be deemed to be a new registration statement relating to the securities offered therein, and this offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

(4) The undersigned registrant hereby undertakes that:

The undersigned registrant hereby undertakes to supplement the prospectus, after the expiration of the subscription period, to set forth the results of the subscription offer, the transactions by the underwriters during the subscription period, the amount of unsubscribed securities to be purchased by the underwriters, and the terms of any subsequent reoffering thereof. If any public offering by the underwriters is to be made on terms different from those set forth on the cover page of the prospectus, a post-effective amendment will be filed to set forth the terms of such offering.

SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, Delcath Systems, Inc., a Delaware corporation, has duly caused this Registration Statement on Form S-1 to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of New York, State of New York, on August 1, 2018.

DELCATH SYSTEMS, INC.

By: /s/ Jennifer K. Simpson, Ph.D.

Name: Jennifer K. Simpson, Ph.D.

Title: President and Chief Executive Officer

Each person whose signature appears below constitutes and appoints Jennifer K. Simpson and Barbra C. Keck and each of them singly, his or her true and lawful attorneys-in-fact and agents, with full power of substitution and resubstitution, for him or her and in his or her name, place and stead, in any and all capacities, to sign any and all amendments (including post-effective amendments) to this registration statement and any and all additional registration statements pursuant to Rule 462(b) of the Securities Act and to file the same, with all exhibits thereto and all other documents in connection therewith, with the SEC, granting unto each said attorney-in-fact and agents full power and authority to do and perform each and every act in person, hereby ratifying and confirming all that said attorneys-in-fact and agents or either of them or their, his or her substitute or substitutes may lawfully do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Act of 1933, this Registration Statement on Form S-1 has been signed by the following persons in the capacities indicated.

<u>SIGNATURE</u>	<u>TITLE</u>	<u>DATE</u>
<u>/s/ Jennifer K. Simpson, Ph.D.</u> Jennifer K. Simpson, Ph.D.	President and Chief Executive Officer and Director (Principal Executive Officer)	August 1, 2018
<u>/s/ Barbra C. Keck, M.B.A.</u> Barbra C. Keck, M.B.A.	Chief Financial Officer (Principal Financial Officer and Principal Accounting Officer)	August 1, 2018
<u>/s/ Roger G. Stoll, Ph.D.</u> Roger G. Stoll, Ph.D.	Chairman of the Board	August 1, 2018
<u>/s/ William D. Rueckert</u> William D. Rueckert	Director	August 1, 2018
<u>/s/ Marco Taglietti, M.D.</u> Marco Taglietti, M.D.	Director	August 1, 2018
<u>/s/ Simon Pedder</u> Simon Pedder	Director	August 1, 2018



WEXLER BURKHART HIRSCHBERG & UNGER LLP
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ASSOCIATE
MARIO C. LATTUGA

OF COUNSEL
JOLIE G. KAHN
JOEL B. MEIROWITZ

August 1, 2018

Delcath Systems, Inc.
1633 Broadway
New York, NY 10017

Re: Delcath Systems, Inc.

Registration Statement on Form S-1

File No. 333-225567

Ladies and Gentlemen:

We have acted as counsel to Delcath Systems, Inc., a Delaware corporation (the "Registrant"), in connection with the preparation and filing of a Registration Statement on Form S-1 (as amended or supplemented, the "Registration Statement") with the Securities and Exchange Commission, with respect to the registration under the Securities Act of 1933, as amended (the "Act"), of 28,571,429 shares (the "Shares") of common stock, par value \$0.001 per share, of the Registrant (the "Common Stock"), (i) issuable upon exercise of non-transferable subscription rights (the "Rights") to be distributed to holders of record of shares of the Common Stock and warrants to purchase shares of Common Stock as described in the prospectus (the "Prospectus") forming a part of the Registration Statement and (ii) shares placed through use by RHK Capital of its commercially reasonable efforts to place any unsubscribed shares at the subscription price from the offering of the Rights.

We have reviewed copies of (i) the Registration Statement; (ii) the Registrant's By-Laws, as amended; (iii) the Registrant's Certificate of Incorporation, as amended; (iv) the form of stock certificate, which is used by the Registrant for the issuance of shares of its Common Stock; (v) the form of subscription rights certificate, which will be used by the Registrant to evidence the Rights; and (vi) certain resolutions of the Board of Directors of the Registrant authorizing the registration and issuance of the Shares and other related matters.

Delcath Systems, Inc.

August 1, 2018

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We have also reviewed such other documents and made such other investigations as we have deemed appropriate. As to various questions of fact material to this opinion, we have relied upon statements, representations and certificates of officers or representatives of the Registrant, public officials and others. We have not independently verified the facts so relied on.

Based upon the foregoing, and subject to the qualifications, limitations and assumptions set forth herein, we are of the opinion that (i) the Shares will, when issued and sold in the manner described in the Registration Statement, be legally issued, fully paid and non-assessable, and (ii) when any certificates evidencing the Rights have been duly executed, authenticated, issued and delivered in the manner described in the Registration Statement, the Rights will be legally issued and will constitute valid and binding obligations of the Company, enforceable in accordance with the terms of such certificates.

We do not express any opinion with respect to any law other than the Business Corporation Law of the State of Delaware. This opinion is rendered only with respect to the laws and legal interpretations and the facts and circumstances in effect on the date hereof.

We hereby consent to the use of this opinion as an exhibit to the Registration Statement and to the use of our name under the caption "Legal Matters" in the Prospectus included in the Registration Statement. In giving this consent, We do not thereby admit that we are within the category of persons whose consent is required under Section 7 of the Act or the rules and regulations promulgated thereunder.

Very truly yours,

/s/ Jolie Kahn

BACKSTOP COMMITMENT PURCHASE AGREEMENT

BACKSTOP COMMITMENT PURCHASE AGREEMENT (this "Agreement"), dated as of June 4, 2018, by and between **Delcath Systems, Inc.**, a Delaware corporation (the "Company"), and the purchasers identified on the signature pages hereto (each, including its successors and permitted assigns, a "Purchaser," or in the aggregate, the "Purchasers").

WHEREAS:

WHEREAS, pursuant to a rights offering (the "Rights Offering"), the Company proposes to raise up to \$50 million by distributing, at no charge, to holders of the Company's common stock, par value \$0.01 per share (the "Common Stock"), on the record date set by the Board of Directors of the Company (the "Board") on or about July 1, 2018, non-transferable rights (the "Rights") to subscribe for and purchase shares of the Company's Common Stock;

WHEREAS, each Right will entitle the holder to subscribe for and purchase (the "Basic Subscription Right") one share of Common Stock at a price of \$1.75 per share (the "Subscription Price"), and each holder of Rights who exercises in full its Basic Subscription Right will be entitled to subscribe for additional shares of Common Stock, to the extent they are available, at the Subscription Price (the "Over-Subscription Right"), during the subscription period reasonably determined by the Board (the "Subscription Period");

WHEREAS, the Company has the right to extend the duration of the Rights Offering Subscription Period for up to an additional 30 days (the "Rights Offering Extension Period") until an expiration date reasonably determined by the Board;

WHEREAS, the Company is offering to the Purchaser the opportunity to purchase (the "Backstop Offering"), at the Purchase Price (as defined below) and subject to the terms and conditions set forth in this Agreement, shares of Common Stock that are not issued in the Rights Offering pursuant to the stockholders' exercise of their Basic Subscription Rights and Over-Subscription Rights (the "Unsubscribed Shares"); and

WHEREAS, the Purchasers are also parties to that certain Securities Purchase Agreement among the Company and the Purchasers, of even date herewith (the "Securities Purchase Agreement");

NOW, THEREFORE, in consideration of the foregoing and the mutual covenants herein contained and other good and valuable consideration, the Company and the Purchaser agree as follows:

AGREEMENT:

1. CERTAIN DEFINITIONS.

For purposes of this Agreement, the following terms shall have the following meanings:

(a) "Available Amount" means each Purchaser's pro rata amount as identified on the signature pages of this Agreement of initially Thirty Million Dollars (US\$30,000,000) (and up to Fifty Million Dollars (US\$50,000,000) if rights of participation are exercised) in the aggregate, which amount shall be reduced by the gross proceeds raised by the Company in the Rights Offering, and then reduced by the Purchase Amount each time the Purchaser purchases shares of Common Stock pursuant to Section 2 hereof

(b) "Bankruptcy Law" means Title 11, U.S. Code, or any similar federal or state law for the relief of debtors.

(c) "Beneficial Ownership Limitation" shall have the meaning set forth in Section 2(e) hereof.

(d) "Business Day" means any day on which the Principal Market is open for trading including any day on which the Principal Market is open for trading for a period of time less than the customary time.

(e) "Change of Control" means:

(i) any “person” (as such term is used in Sections 13(d) and 14(d) of the Exchange Act (as defined below)), other than a trustee or other fiduciary holding securities of the Company under an employee benefit plan of the Company, becomes the “beneficial owner” (as defined in Rule 13d-3 promulgated under the Exchange Act), directly or indirectly, of securities of the Company representing 50% or more of (A) the outstanding shares of common stock of the Company or (B) the combined voting power of the Company’s then-outstanding securities;

(ii) the Company is party to a merger or consolidation, or series of related transactions, which results in the voting securities of the Company outstanding immediately prior thereto failing to continue to represent (either by remaining outstanding or by being converted into voting securities of the surviving or another entity) at least fifty (50%) percent of the combined voting power of the voting securities of the Company or such surviving or other entity outstanding immediately after such merger or consolidation;

(iii) the sale or disposition of all or substantially all of the Company’s assets (or consummation of any transaction, or series of related transactions, having similar effect);

(iv) the dissolution or liquidation of the Company; or

(v) any transaction or series of related transactions that has the substantial effect of any one or more of the foregoing.

(f) Intentionally Omitted.

(g) “Common Stock Equivalents” means any securities of the Company or the Subsidiaries which would entitle the holder thereof to acquire at any time Common Stock, including, without limitation, any debt, preferred stock, rights, options, warrants or other instrument that is at any time convertible into or exercisable or exchangeable for, or otherwise entitles the holder thereof to receive, Common Stock.

(h) “Confidential Information” means any information disclosed by either party to the other party, either directly or indirectly, in writing, orally or by inspection of tangible objects (including, without limitation, documents, prototypes, samples, plant and equipment), which is designated as “Confidential,” “Proprietary” or some similar designation. Information communicated orally shall be considered Confidential Information if such information is confirmed in writing as being Confidential Information within ten (10) Business Days after the initial disclosure. Confidential Information may also include information disclosed to a disclosing party by third parties. Confidential Information shall not, however, include any information which (i) was publicly known and made generally available in the public domain prior to the time of disclosure by the disclosing party; (ii) becomes publicly known and made generally available after disclosure by the disclosing party to the receiving party through no action or inaction of the receiving party; (iii) is already in the possession of the receiving party at the time of disclosure by the disclosing party as shown by the receiving party’s files and records immediately prior to the time of disclosure; (iv) is obtained by the receiving party from a third party without a breach of such third party’s obligations of confidentiality; (v) is independently developed by the receiving party without use of or reference to the disclosing party’s Confidential Information, as shown by documents and other competent evidence in the receiving party’s possession; or (vi) is required by law to be disclosed by the receiving party, provided that the receiving party gives the disclosing party prompt written notice of such requirement prior to such disclosure and assistance in obtaining an order protecting the information from public disclosure.

(i) “Custodian” means any receiver, trustee, assignee, liquidator or similar official under any Bankruptcy Law.

(j) “Event of Default” shall have the meaning set forth in Section 11 hereof.

(k) “Exchange Act” means the Securities Exchange Act of 1934, as amended.

(l) “Purchaser Termination Event” means one of the following has occurred: (i) an Event of Default, subject to the expiration of any cure period under Section 12 hereof; (ii) a Material Adverse Effect; or (iii) a Change of Control of the Company.

(m) “Material Adverse Effect” means any set of circumstances or events which (i) is or could reasonably be expected to be material and adverse to the business, properties, operations, condition (financial or otherwise) or results of operations of the Company and its subsidiaries, taken as a whole, (ii) has or could reasonably be expected to have a material adverse effect on the Company’s ability to perform its obligations under this Agreement, or (iii) result in the consolidated closing bid price of the Common Stock as reported on the OTCQB (the “Stock Price”) on any day during the term of this Agreement being less than 50% of the Stock Price on the Business Day immediately preceding the execution of this Agreement.

(n) Maturity Date” means the date that is the number of Business Days from the Commencement Date reasonably set by the Board.

(o) Person” means an individual or entity including but not limited to any limited liability company, a partnership, a joint venture, a corporation, a trust, an unincorporated organization and a government or any department or agency thereof.

(p) Principal Market” means the OTCQB; provided, however, that in the event the Company’s Common Stock is ever listed or traded on the Nasdaq Capital Market, the Nasdaq Global Market, the Nasdaq Global Select Market, the New York Stock Exchange, or the OTC Bulletin Board (it being understood that as used herein “OTC Bulletin Board” shall also mean any successor or comparable market quotation system or exchange to the OTC Bulletin Board such as the OTCQB marketplace operated by the OTC Markets Group, Inc.), then the “Principal Market” shall mean such other market or exchange on which the Company’s Common Stock is then listed or traded.

(q) Purchase Amount” means, with respect to any particular purchase made hereunder, the number of Purchase Shares multiplied by the Purchase Price to be purchased by the Purchaser pursuant to Section 2 hereof.

(r) Purchase Date” means with respect to any particular purchase made hereunder, the Business Day on which the Purchaser purchases the Purchase Shares pursuant to Section 2 hereof.

(s) Purchase Price” means the Subscription Price

(t) Purchase Shares” shall have the meaning set forth in Section 2(b) hereof.

(u) Intentionally Omitted.

(v) SEC” means the U.S. Securities and Exchange Commission.

(w) SEC Documents” means all reports, schedules, forms, statements and other documents filed by the Company under the Securities Act and the Exchange Act, including pursuant to Section 13(a) or 15(d) thereof, for the year preceding the date hereof, including the exhibits thereto and documents incorporated by reference therein.

(x) Securities Act” means the Securities Act of 1933, as amended.

(y) Intentionally Omitted.

(z) Transfer Agent” means the transfer agent of the Company as set forth in Section 13(f) hereof or such other entity which is then serving as the transfer agent for the Company in respect of the Common Stock.

2. BACKSTOP PURCHASE COMMITMENT.

Subject to the terms and conditions set forth in this Agreement, each Purchaser severally and not jointly hereby agrees, following the expiration of the Rights Offering Extension Period, to purchase from the Company in the Backstop Offering, all Purchase Shares, at the Purchase Price, up to a maximum purchase equal to the Available Amount as follows:

(a) Determination of Purchase Shares. Following the expiration of the Rights Offering Extension Period, the Company will determine the number of Purchase Shares, if any, and will notify the Purchaser in writing of (i) the number of Unsubscribed Shares, and (ii) the number of shares to be purchased by the Purchaser in the Backstop Offering (the “Purchase Shares”).

(b) Automatic Purchases. Within two (2) Business Days following the satisfaction of the conditions (the “Commencement”) as set forth in Sections 7 and 8 below (the date of satisfaction of such conditions, the “Commencement Date”), and each successive fifteen (15) Business Day period commencing with the Commencement Date during the term of this Agreement, the Purchaser shall purchase from the Company in the Backstop Offering up to the number of Purchase Shares (as defined below) equal to the lesser of (i) One Million Dollars (\$1,000,000) worth of Purchase Shares or (ii) 20% of the dollar trading volume of the Common Stock on the Principal Market on the five (5) Business Days immediately preceding the Purchase Date (each such purchase, a “Purchase” and such shares, “Purchase Shares”) at the Purchase Price on the Purchase Date. The Purchase Amount may be increased on a case-by-case basis as reasonably requested by the Company. With respect to each such Purchase, the Company must deliver the Purchase Shares on the Business Day following the Purchase Date.

(c) Payment for Purchase Shares. The Purchaser shall pay to the Company an amount equal to the Purchase Amount with respect to such Purchase Shares as full payment for such Purchase Shares, at each Purchaser's option, in whole or in part via offset of any then outstanding Notes owed to Purchaser by Company, or by wire transfer of immediately available funds no later than four Business Days after a Purchase. The Company shall cause to be issued to the Purchaser the Purchase Shares in book-entry form delivered electronically via DWAC or DTC Fast system registered in the name of the Purchaser or its nominee. The Company shall not issue any fraction of a share of Common Stock upon any purchase. If the issuance would result in the issuance of a fraction of a share of Common Stock, the Company shall round such fraction of a share of Common Stock up or down to the nearest whole share. All payments made under this Agreement shall be made in lawful money of the United States of America or wire transfer of immediately available funds to such account as the Company may from time to time designate by written notice in accordance with the provisions of this Agreement. Whenever any amount expressed to be due by the terms of this Agreement is due on any day that is not a Business Day, the same shall instead be due on the next succeeding day that is a Business Day.

(d) Compliance with Rules of Principal Market. The Company shall not issue any Purchase Shares pursuant to this Agreement if such issuance would reasonably be expected to result in a breach of the Company's obligations under the rules and regulations of the Principal Market. The provisions of this Section 2(d) shall be implemented in a manner otherwise than in strict conformity with the terms hereof only if necessary to ensure compliance with the rules and regulations of the Principal Market.

(e) Beneficial Ownership Limitation. Notwithstanding anything to the contrary contained in this Agreement, the Company shall not issue or sell, and the Purchaser shall not purchase or acquire, any shares of Common Stock under this Agreement which, when aggregated with all other shares of Common Stock then beneficially owned by the Purchaser and its affiliates (as calculated pursuant to Section 13(d) of the Exchange Act and Rule 13d-3 promulgated thereunder), would result in the beneficial ownership by the Purchaser and its affiliates of more than 4.99% (or, if this limitation is waived by the Purchaser upon no less than 61 days' prior notice to the Company, 9.99%) of the then issued and outstanding shares of Common Stock (the "Beneficial Ownership Limitation"). Upon the written or oral request of the Purchaser, the Company shall confirm orally or in writing to the Purchaser within two (2) Business Days of such request the number of shares of Common Stock then outstanding. The Purchaser and the Company shall each cooperate in good faith in the determinations required hereby and the application hereof.

3. INVESTOR'S REPRESENTATIONS AND WARRANTIES.

The Purchaser represents and warrants to the Company that as of the date hereof and as of the Commencement Date:

(a) Organization and Qualification. The Purchaser has been duly organized and is validly existing as a corporation in good standing under the laws of its jurisdiction of incorporation. The Purchaser is duly qualified to do business as a foreign corporation in good standing in each jurisdiction in which it owns or leases real property or in which the conduct of its business makes such qualification necessary and in which the failure to so qualify would have or is reasonably likely to result in a material adverse effect upon the business, prospects, properties, operations, condition (financial or otherwise) or results of operations of the Purchaser and its subsidiaries, taken as a whole, or in its ability to perform its obligations under this Agreement.

(b) Authorization. The Purchaser has the power and authority to enter into this Agreement. This Agreement has been duly authorized, executed and delivered by the Purchaser, and constitutes a valid, legal and binding obligation of the Purchaser, enforceable against the Purchaser in accordance with its terms, except as rights to indemnity hereunder may be limited by federal or state securities laws and except as such enforceability may be limited by bankruptcy, insolvency, reorganization or similar laws affecting the rights of creditors generally and subject to general principles of equity.

(c) Investment Purpose. The Purchaser is acquiring the Purchase Shares ("Securities") as principal for its own account (this representation and warranty shall not limit the Purchaser's right to sell the Securities at any time pursuant to the registration statement described herein or otherwise in compliance with applicable federal and state securities laws). The Purchaser is acquiring the Securities hereunder in the ordinary course of its business.

(d) Information; Knowledge of Business; Financial Capacity. The Purchaser is familiar with the business in which the Company is engaged. The Purchaser has knowledge and experience in financial and business matters, is familiar with the investments such as the Common Stock, is fully aware of the risks involved in making an investment of this type, and is capable of evaluating the merits and risks of this investment. The Purchaser acknowledges that, before executing this Agreement, it had the opportunity to ask questions of and receive answers or obtain additional information from a representative of the Company concerning the financial and other affairs of the Company. The Purchaser is an “accredited investor” within the meaning of Rule 501(a) of Regulation D promulgated under the Securities Act and has adequate capital and means of providing for current needs to sustain a complete loss of its investment in the Company.

(e) Availability of Funds. The Purchaser has and will have available sufficient funds to purchase the Purchase Shares as and when required hereunder.

(f) No Prior Short Selling. The Purchaser represents and warrants to the Company that at no time prior to the date of this Agreement has any of the Purchaser, its agents, representatives or affiliates engaged in or effected, in any manner whatsoever, directly or indirectly, any (i) “short sale” (as such term is defined in Section 242.200 of Regulation SHO of the Exchange Act) of the Common Stock, (ii) any hedging transaction with respect to the Common Stock, or (iii) any transaction or arrangement which establishes or has the effect of establishing a net short position with respect to the Common Stock.

4. REPRESENTATIONS AND WARRANTIES OF THE COMPANY.

The Company represents and warrants to the Purchaser that except as set forth in the SEC Documents and the Registration Statement (as hereinafter defined), or in the Disclosure Schedules attached to the Securities Purchase Agreement and incorporated herein by reference and made a part hereof, as of the date hereof and as of the Commencement Date:

(a) Subsidiaries. All of the direct and indirect subsidiaries of the Company are set forth in the SEC Documents (each a “Subsidiary” and collectively the “Subsidiaries”). The Company owns, directly or indirectly, all of the capital stock or other equity interests of each Subsidiary free and clear of any Liens, and all the issued and outstanding shares of capital stock of each Subsidiary are validly issued and are fully paid, non-assessable and free of preemptive and similar rights to subscribe for or purchase securities.

(b) Organization and Qualification. Each of the Company and its Significant Subsidiaries (which has the meaning set forth in Rule 1-02 of Regulation S-X) has been duly organized and is validly existing as a corporation in good standing under the laws of its jurisdiction of incorporation. Each of the Company and its Significant Subsidiaries has the corporate power and authority to own its properties and conduct its business as currently being carried on and as described in the SEC Documents, and is duly qualified to do business as a foreign corporation in good standing in each jurisdiction in which it owns or leases real property or in which the conduct of its business makes such qualification necessary and in which the failure to so qualify would have or is reasonably likely to result in a Material Adverse Effect.

(c) Authorization. The Company has the power and authority to enter into this Agreement and to authorize, issue and sell the Securities as contemplated by this Agreement. This Agreement has been duly authorized, executed and delivered by the Company, and constitutes a valid, legal and binding obligation of the Company, enforceable against the Company in accordance with its terms, except as rights to indemnity hereunder may be limited by federal or state securities laws and except as such enforceability may be limited by bankruptcy, insolvency, reorganization or similar laws affecting the rights of creditors generally and subject to general principles of equity.

(d) No Conflict. The execution, delivery and performance of this Agreement and the consummation of the transactions herein contemplated will not (i) result in a breach or violation of any of the terms and provisions of, or constitute a default under, any law, rule or regulation to which the Company or any Significant Subsidiary is subject, or by which any property or asset of the Company or any Significant Subsidiary is bound or affected, (ii) conflict with, result in any violation or breach of, or constitute a default (or an event that with notice or lapse of time or both would become a default) under, or give to others any right of termination, amendment, acceleration or cancellation (with or without notice, lapse of time or both) of, any agreement, lease, credit facility, debt, note, bond, mortgage, indenture or other instrument (the “Contracts”) or obligation or other understanding to which the Company or any Significant Subsidiary is a party of by which any property or asset of the Company or any Significant Subsidiary is

bound or affected, except to the extent that such conflict, default, termination, amendment, acceleration or cancellation right is not reasonably likely to result in a Material Adverse Effect, or (iii) result in a breach or violation of any of the terms and provisions of, or constitute a default under, the Company's charter or by laws.

(e) No Organization Document Violation. Neither the Company nor any of its Significant Subsidiaries is in violation, breach or default under its certificate of incorporation, by-laws or other equivalent organizational or governing documents, except where the violation, breach or default in the case of a Significant Subsidiary of the Company is not reasonably likely to result in a Material Adverse Effect.

(f) Consents. All consents, approvals, orders, authorizations and filings required on the part of the Company and its subsidiaries in connection with the execution, delivery or performance of this Agreement have been obtained or made, other than such consents, approvals, orders and authorizations the failure of which to make or obtain is not reasonably likely to result in a Material Adverse Effect.

(g) No Delisting. The Common Stock is registered pursuant to Section 12(b) of the Exchange Act and is included or approved for inclusion on the Principal Market. There is no action pending by the Company or, to the Company's knowledge, the Principal Market, to delist the Common Stock from the Principal Market, nor has the Company received any notification that the Principal Market is contemplating terminating such listing. When issued, the Securities will be listed on the Principal Market. The Company has not taken, directly or indirectly, any action that is designed to or that has constituted or that would 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 Securities.

(h) Validity of Shares. All of the issued and outstanding shares of capital stock of the Company are duly authorized and validly issued, fully paid and nonassessable, and have been issued in compliance with all applicable securities laws, and conform to the description thereof in the SEC Documents. Except for the issuances of options or restricted stock or restricted stock units in the ordinary course of business, since the respective dates as of which information is provided in the SEC Documents, the Company has not entered into or granted any convertible or exchangeable securities, options, warrants, agreements, contracts or other rights in existence to purchase or acquire from the Company any shares of the capital stock of the Company.

(i) Capitalization. As of the date hereof, the capitalization of the Company (excluding the issuance of Purchase Shares hereunder) is as set forth in the Company's Quarterly Report on Form 10-Q for the quarter ended March 31, 2018. The Company has not issued any capital stock since its most recently filed periodic report under the Exchange Act, other than pursuant to the exercise of employee stock options under the Company's stock option plans, and pursuant to the conversion or exercise of Common Stock Equivalents outstanding as of the date of the most recently filed periodic report under the Exchange Act. No Person has any right of first refusal, preemptive right, right of participation, or any similar right to participate in the transactions contemplated by the Transaction Documents. Except as set forth in the SEC Documents, and except as a result of the purchase and sale of the Securities, there are no outstanding options, warrants, script rights to subscribe to, calls or commitments of any character whatsoever relating to, or securities, rights or obligations convertible into or exercisable or exchangeable for, or giving any Person any right to subscribe for or acquire, any shares of Common Stock, or contracts, commitments, understandings or arrangements by which the Company or any Subsidiary is or may become bound to issue additional shares of Common Stock or Common Stock Equivalents. The issuance and sale of the Securities will not obligate the Company to issue shares of Common Stock or other securities to any Person (other than the Purchaser) and will not result in a right of any holder of Company securities to adjust the exercise, conversion, exchange or reset price under any of such securities. All of the outstanding shares of capital stock of the Company are validly issued, fully paid and nonassessable, have been issued in compliance with all federal and state securities laws, and none of such outstanding shares was issued in violation of any preemptive rights or similar rights to subscribe for or purchase securities. No further approval or authorization of any shareholder, the Board of Directors of the Company or others is required for the issuance and sale of the Securities. There are no shareholders agreements, voting agreements or other similar agreements with respect to the Company's capital stock to which the Company is a party or, to the knowledge of the Company, between or among any of the Company's shareholders.

(j) Taxes. Each of the Company and its Significant Subsidiaries has filed all returns (as hereinafter defined) required to be filed with taxing authorities prior to the date hereof or has duly obtained extensions of time for the filing thereof. Each of the Company and its Significant Subsidiaries has paid all taxes (as hereinafter defined) shown as due on such returns that were filed and has paid all taxes imposed on or assessed against the Company or such respective Significant Subsidiary. The provisions for taxes payable, if any, shown on the consolidated financial

statements filed with or as part of the SEC Documents are sufficient for all accrued and unpaid taxes, whether or not disputed, and for all periods to and including the dates of such consolidated financial statements. Except as disclosed in the SEC Documents (i) no issues have been raised (and are currently pending) by any taxing authority in connection with any of the returns or taxes asserted as due from the Company or its Significant Subsidiaries, and (ii) no waivers of statutes of limitation with respect to the returns or collection of taxes have been given by or requested from the Company or its Significant Subsidiaries. The term “taxes” mean all federal, state, local, foreign, and other net income, gross income, gross receipts, sales, use, ad valorem, transfer, franchise, profits, license, lease, service, service use, withholding, payroll, employment, excise, severance, stamp, occupation, premium, property, windfall profits, customs, duties or other taxes, fees, assessments, or charges of any kind whatever, together with any interest and any penalties, additions to tax, or additional amounts with respect thereto. The term “returns” means all returns, declarations, reports, statements, and other documents required to be filed in respect to taxes.

(k) SEC Documents. The SEC Documents represent all reports, schedules, forms, statements and other documents required to be filed by the Company under the Securities Act and the Exchange Act, including pursuant to Section 13(a) or 15(d) thereof, for the one year preceding the date hereof.

(l) No Material Misstatement. At the date hereof and at the Commencement Date, each SEC Document, the Registration Statement and any post-effective amendment thereto complied or will comply in all material respects with the requirements of the Securities Act and the Rules and Regulations and did not and will not contain any 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 Company had a reasonable basis for, and made in good faith, each “forward-looking statement” (within the meaning of Section 27A of the Securities Act or Section 21E of the Exchange Act) contained or incorporated by reference in the SEC Documents. All statistical or market-related data included or incorporated by reference in the SEC Documents are based on or derived from sources that the Company reasonably 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.

(m) Financial Statements. The consolidated financial statements of the Company, together with the related notes, included in the SEC Documents comply in all material respects with the applicable requirements of the Securities Act and the Exchange Act and fairly present the financial condition of the Company as of the dates indicated and the results of operations and changes in cash flows for the periods therein specified in conformity with generally accepted accounting principles consistently applied throughout the periods involved present fairly the information required to be stated therein. No other financial statements, pro forma financial information or schedules are required under the Securities Act to be included in the SEC Documents.

(n) No Material Liabilities. Since the respective dates as of which information is given in the SEC Documents and the Registration Statement, (i) neither the Company nor any of its Significant Subsidiaries has incurred any material liabilities or obligations, direct or contingent, or entered into any material transactions other than in the ordinary course of business, (ii) the Company has not declared or paid any dividends or made any distribution of any kind with respect to its capital stock, (iii) there has not been any change in the capital stock of the Company or any of its Significant Subsidiaries (other than a change in the number of outstanding shares of Common Stock due to the issuance of shares upon the exercise of outstanding convertible notes, options or warrants or the issuance of restricted stock awards or restricted stock units under the Company’s existing stock awards plan, or any new grants thereof in the ordinary course of business), (iv) there has not been any material change in the Company’s long-term or short-term debt, and (v) there has not been the occurrence of any Material Adverse Effect.

(o) Books and Records. The Company makes and keeps accurate books and records and maintains a system of internal accounting controls sufficient to provide reasonable assurance that (a) transactions are executed in accordance with management’s general or specific authorization, (b) transactions are recorded as necessary to permit preparation of financial statements in conformity with generally accepted accounting principles, consistently applied and to maintain accountability for assets, (c) access to assets is permitted only in accordance with management’s general or specific authorization and (d) the recorded accountability for assets is compared with existing assets at reasonable intervals and appropriate action is taken with respect to any differences. Except as disclosed in the SEC Documents, there has not been a material weakness in the Company’s internal control over financial reporting (whether or not remediated) and since January 1, 2018, and there has been 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.

(p) Disclosure Controls and Procedures. The Company has established and maintains disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)), which (i) are designed to ensure that material information relating to the Company, including its consolidated subsidiaries, is made known to the Company's principal executive officer and its principal financial officer by others within those entities, particularly during the periods in which the periodic reports required under the Exchange Act are being prepared and (ii) are effective in all material respects to perform the functions for which they were established. The Company is not aware of any fraud, whether or not material, that involves management or other employees who have a significant role in the Company's internal control over financial reporting with respect to the Company's internal control over financial reporting.

(q) Acknowledgment Regarding Purchaser's Status. The Company acknowledges and agrees that the Purchaser is acting solely in the capacity of arm's length purchaser with respect to this Agreement and the Registration Rights Agreement (as hereinafter defined, together, the "Transaction Documents") and the transactions contemplated hereby and thereby. The Company further acknowledges that the Purchaser is not acting as a financial advisor or fiduciary of the Company (or in any similar capacity) with respect to the Transaction Documents and the transactions contemplated hereby and thereby and any advice given by the Purchaser or any of its representatives or agents in connection with the Transaction Documents and the transactions contemplated hereby and thereby is merely incidental to the Purchaser's purchase of the Securities. The Company further represents to the Purchaser that the Company's decision to enter into the Transaction Documents has been based solely on the independent evaluation by the Company and its representatives and advisors.

(r) Absence of Litigation. There is no pending or, to the knowledge of the Company, any threatened, action, suit or proceeding to which the Company or any of its Significant Subsidiaries is a party or of which any property or assets of the Company or its subsidiaries is the subject of before or by any court or governmental agency, authority or body, or any arbitrator or mediator, which is reasonably likely to result in a Material Adverse Effect.

(s) Permits. The Company and each of its Significant Subsidiaries holds, and is in compliance with, all franchises, grants, authorizations, licenses, permits, easements, consents, certificates and orders ("Permits") of any governmental or self regulatory agency, authority or body required for the conduct of its business, and all such Permits are in full force and effect, in each case except where the failure to hold, or comply with, any of them is not reasonably likely to result in a Material Adverse Effect.

(t) Title. The Company and its Significant Subsidiaries have good and marketable title to all property (whether real or personal) described in the SEC Documents as being owned by them that are material to the business of the Company, in each case free and clear of all liens, claims, security interests, other encumbrances or defects, except those that are not reasonably likely to result in a Material Adverse Effect. The property held under lease by the Company and its Significant Subsidiaries is held by them under valid, subsisting and enforceable leases with only such exceptions with respect to any particular lease as are not material or do not interfere in any material respect with the conduct of the business of the Company and its subsidiaries.

(u) Sarbanes-Oxley Act Compliance. The Company and each of its subsidiaries has complied with, is not in violation of, and has not received any notice of violation relating to any law, rule or regulation relating to the conduct of its business, or the ownership or operation of its property and assets, including, without limitation, the Sarbanes-Oxley Act and the rules and regulations of the Commission thereunder, except where the failure to be in compliance is not reasonably likely to result in a Material Adverse Effect.

(v) Investment Company. The Company is not and, after giving effect to the offering and sale of the Securities and the application of the net proceeds thereof, will not be an "investment company," as such term is defined in the Investment Company Act of 1940, as amended.

(w) Labor Relations. No material labor dispute exists or, to the knowledge of the Company, is imminent with respect to any of the employees of the Company, which could reasonably be expected to result in a Material Adverse Effect. None of the Company's or its Subsidiaries' employees is a member of a union that relates to such employee's relationship with the Company, and neither the Company or any of its Subsidiaries is a party to a collective bargaining agreement, and the Company and its Subsidiaries believe that their relationships with their employees are good. No executive officer, to the knowledge of the Company, is, or is now expected to be, in violation of any material term of any employment contract, confidentiality, disclosure or proprietary information agreement or non-competition agreement, or any other contract or agreement or any restrictive covenant, and the continued employment of each such executive officer does not subject the Company or any of its Subsidiaries to any

liability with respect to any of the foregoing matters. The Company and its Subsidiaries are in compliance with all U.S. federal, state, local and foreign laws and regulations relating to employment and employment practices, terms and conditions of employment and wages and hours, except where the failure to be in compliance could not, individually or in the aggregate, reasonably be expected to have a Material Adverse Effect.

(x) Compliance. Neither the Company nor any Subsidiary (i) is in default under or in violation of (and no event has occurred that has not been waived that, with notice or lapse of time or both, would result in a default by the Company or any Subsidiary under), nor has the Company or any Subsidiary received notice of a claim that it is in default under or that it is in violation of, any indenture, loan or credit agreement or any other agreement or instrument to which it is a party or by which it or any of its properties is bound (whether or not such default or violation has been waived), (ii) is in violation of any order of any court, arbitrator or governmental body, or (iii) is or has been in violation of any statute, rule or regulation of any governmental authority, including without limitation all foreign, federal, state and local laws applicable to its business and all such laws that affect the environment, except in each case as could not have or reasonably be expected to result in a Material Adverse Effect.

(y) Patents and Trademarks. The Company and the Subsidiaries have, or have rights to use, all patents, patent applications, trademarks, trademark applications, service marks, trade names, trade secrets, inventions, copyrights, licenses and other intellectual property rights and similar rights necessary or material for use in connection with their respective businesses as described in the SEC Documents and which the failure to so have could have a Material Adverse Effect (collectively, the "Intellectual Property Rights"). Neither the Company nor any Subsidiary has received a notice (written or otherwise) that the Intellectual Property Rights used by the Company or any Subsidiary violates or infringes upon the rights of any Person. To the knowledge of the Company, all such Intellectual Property Rights are enforceable and there is no existing infringement by another Person of any of the Intellectual Property Rights. The Company and its Subsidiaries have taken reasonable security measures to protect the secrecy, confidentiality and value of all of their intellectual properties, except where failure to do so could not, individually or in the aggregate, reasonably be expected to have a Material Adverse Effect.

(z) Registration Rights. No other Person has any right to cause the Company to effect the registration under the Securities Act of any securities of the Company.

(aa) Foreign Corrupt Practices. Neither the Company, nor to the knowledge of the Company, any agent or other person acting on behalf of the Company, has (i) directly or indirectly, used any funds for unlawful contributions, gifts, entertainment or other unlawful expenses related to foreign or domestic political activity, (ii) made any unlawful payment to foreign or domestic government officials or employees or to any foreign or domestic political parties or campaigns from corporate funds, (iii) failed to disclose fully any contribution made by the Company (or made by any person acting on its behalf of which the Company is aware) which is in violation of law, or (iv) violated in any material respect any provision of the Foreign Corrupt Practices Act of 1977, as amended.

(bb) Transactions With Affiliates. Except as set forth in the SEC Documents, none of the officers or directors of the Company and, to the knowledge of the Company, none of the employees of the Company is presently a party to any transaction with the Company or any Subsidiary (other than for services as employees, officers and directors), including any contract, agreement or other arrangement providing for the furnishing of services to or by, providing for rental of real or personal property to or from, or otherwise requiring payments to or from any officer, director or such employee or, to the knowledge of the Company, any entity in which any officer, director, or any such employee has a substantial interest or is an officer, director, trustee or partner, in each case in excess of \$120,000 other than for (i) payment of salary or consulting fees for services rendered, (ii) reimbursement for expenses incurred on behalf of the Company and (iii) other employee benefits, including stock option agreements under any stock option plan of the Company.

(cc) Disclosure. Except with respect to the material terms and conditions of the transactions contemplated by the Transaction Documents, the Company confirms that neither it nor any other Person acting on its behalf has provided the Purchaser or its agents or counsel with any information that it believes constitutes or might constitute material, non-public information that is not otherwise disclosed in (or incorporated by reference in) the SEC Documents, the Registration Statement or prospectus supplements thereto or otherwise made publicly available. The Company understands and confirms that the Purchaser will rely on the foregoing representation in effecting purchases and sales of securities of the Company. All of the disclosure furnished by or on behalf of the Company to the Purchaser regarding the Company, its business and the transactions contemplated hereby, is true and correct and does not contain any untrue statement of a material fact or omit to state any material fact necessary in order to make

the statements made therein, in light of the circumstances under which they were made, not misleading. The Company acknowledges and agrees that the Purchaser neither makes nor has made any representations or warranties with respect to the transactions contemplated hereby other than those specifically set forth in Section 3 hereof.

5. COVENANTS.

(a) SEC Filings. The Company agrees to advise the Purchaser, as soon as reasonably practicable after the Company is advised or obtains knowledge thereof, with a confirmation in writing, of (i) the time when any amendment or supplement to the Prospectus has been filed, (ii) the issuance by the Commission of any stop order, or of the initiation or threatening of any proceeding suspending the effectiveness of the Registration Statement relating to the Rights Offering (the "Registration Statement") or any amendment thereto or any order preventing or suspending the use of any preliminary prospectus or the Prospectus or any amendment or supplement thereto, (iii) the issuance by any state securities commission of any notice of any proceedings for the suspension of the qualification of the shares of Common Stock for offering or sale in any jurisdiction or of the initiation, or the threatening, of any proceeding for such purpose, (iv) the receipt of any comments from the Commission directed toward the Registration Statement or any document incorporated therein by reference, and (v) any request by the Commission for any amendment to the Registration Statement or any amendment or supplement to the Prospectus or for additional information. The Company shall use its commercially reasonable efforts to prevent the issuance of any such order or the imposition of any such suspension and, if any such order is issued or suspension is imposed, to obtain the withdrawal thereof as promptly as possible.

(b) Information about the Purchaser. The Purchaser agrees to furnish to the Company all information with respect to the Purchaser that may be necessary or appropriate and will ensure that any information furnished to the Company for the Prospectus by the Purchaser does not contain any untrue statement of material fact or omit to state a material fact required to be stated in the Prospectus or necessary in order to make the statements therein, in the light of the circumstances under which they were made, not misleading.

(c) Confidentiality. The Purchaser acknowledges that the information received by it pursuant to this Agreement is confidential and for its use only. The Purchaser will not use such information in violation of applicable law or disclose or disseminate any such information, including any information with respect to this Agreement or the transactions contemplated hereby, without the prior written consent of the Company, which consent shall not be unreasonably withheld or delayed, except if such disclosure is required by applicable law or applicable stock market regulations, in which case the Purchaser shall consult in advance with respect to such disclosure with the Company to the extent reasonably practicable.

(d) Listing. The Company shall promptly secure the listing of all of the Purchase Shares upon each national securities exchange and automated quotation system, if any, upon which shares of Common Stock are then listed (subject to official notice of issuance) and shall maintain, so long as any other shares of Common Stock shall be so listed, such listing of all such securities from time to time issuable under the terms of the Transaction Documents. The Company shall maintain the Common Stock's authorization for quotation on the Principal Market. The Company shall promptly, and in no event later than the following Business Day, provide to the Purchaser copies of any notices it receives from the Principal Market regarding the continued eligibility of the Common Stock for listing on such automated quotation system or securities exchange. The Company shall pay all fees and expenses in connection with satisfying its obligations under this section.

(e) Limitation on Short Sales and Hedging Transactions. The Purchaser agrees that beginning on the date of this Agreement and ending on the date of termination of this Agreement as provided in Section 11, the Purchaser and its agents, representatives and affiliates shall not in any manner whatsoever enter into or effect, directly or indirectly, any (i) "short sale" (as such term is defined in Section 242.200 of Regulation SHO of the Exchange Act) of the Common Stock or (ii) hedging transaction, which establishes a net short position with respect to the Common Stock.

(f) Due Diligence. The Purchaser shall have the right, from time to time as the Purchaser may reasonably deem appropriate, to perform reasonable due diligence on the Company during normal business hours. The Company and its officers and employees shall provide information and reasonably cooperate with the Purchaser in connection with any reasonable request by the Purchaser related to the Purchaser's due diligence of the Company. Each party hereto agrees not to disclose any Confidential Information of the other party to any third party and shall not use the Confidential Information for any purpose other than in connection with, or in furtherance of, the

transactions contemplated hereby. Each party hereto acknowledges that the Confidential Information shall remain the property of the disclosing party and agrees that it shall take all reasonable measures to protect the secrecy of any Confidential Information disclosed by the other party. The Company confirms that neither it nor any other Person acting on its behalf shall provide the Purchaser or its agents or counsel with any information that it believes constitutes or might constitute material, non-public information which is not otherwise disclosed in the Registration Statement or prospectus supplements thereto or otherwise publicly disclosed.

(g) Purchase Records. The Purchaser and the Company shall each maintain records showing the remaining Available Amount at any given time and the dates and Purchase Amounts for each purchase or shall use such other method, reasonably satisfactory to the Purchaser and the Company.

(h) Taxes. The Company shall pay any and all transfer, stamp or similar taxes that may be payable with respect to the issuance and delivery of any shares of Common Stock to the Purchaser made under this Agreement.

(i) No Variable Rate Transactions and Right of Participation. From the date hereof until the Maturity Date, the Company shall be prohibited from effecting or entering into an agreement to effect any issuance by the Company or any of its Subsidiaries of Common Stock or Common Stock Equivalents for cash consideration (or a combination of units thereof) involving a Variable Rate Transaction other than in connection with an Exempt Issuance. "Variable Rate Transaction" means a transaction in which the Company (i) issues or sells any debt or equity securities that are convertible into, exchangeable or exercisable for, or include the right to receive additional shares of Common Stock either (A) at a conversion price, exercise price or exchange rate or other price that is based upon and/or varies with the trading prices of or quotations for the shares of Common Stock at any time after the initial issuance of such debt or equity securities, or (B) with a conversion, exercise or exchange price that is subject to being reset at some future date after the initial issuance of such debt or equity security or upon the occurrence of specified or contingent events directly or indirectly related to the business of the Company or the market for the Common Stock (including, without limitation any "full ratchet" or "weighted average" anti-dilution provisions) or (ii) enters into any agreement, including, but not limited to, an equity line of credit or at-the-market offering, during the period commencing on the date of this Agreement and ending on the first anniversary thereof, whereby the Company may sell securities at a future determined price. "Exempt Issuance" means the issuance of (a) shares of Common Stock, restricted stock units or options to employees, officers, directors or vendors of the Company pursuant to any stock or option plan duly adopted for such purpose, by the Board of Directors or a majority of the members of a committee of directors established for such purpose, (b) securities upon the exercise or exchange of or conversion of any Securities issued hereunder and/or other securities exercisable or exchangeable for or convertible into shares of Common Stock issued and outstanding on the date of this Agreement, provided that such securities have not been amended since the date of this Agreement to increase the number of such securities or to decrease the exercise price, exchange price or conversion price of such securities, and (c) securities issued pursuant to acquisitions or strategic transactions approved by the Board of Directors or a majority of the members of a committee of directors established for such purpose, which acquisitions or strategic transactions can have a Variable Rate Transaction component, provided that any such issuance shall only be to a Person (or to the equity holders of a Person) which is, itself or through its subsidiaries, an operating company or an asset in a business synergistic with the business of the Company and shall provide to the Company additional benefits in addition to the investment of funds, but shall not include a transaction in which the Company is issuing securities primarily for the purpose of raising capital or to an entity whose primary business is investing in securities. For six (6) Monthly Periods beginning from the date hereof other than the rights offering contemplated hereby, the Company agrees that, prior to entering into each and any definitive agreement for the sale directly or indirectly of any debt, Common Stock or Common Stock Equivalents primarily for the purpose of raising capital or to an entity whose primary business is investing in securities, to which definitive agreement, or series of related definitive agreements taken together, there are two (2) or more counterparties (not including the Company) (a "Subsequent Transaction"), the Company shall provide reasonable, good faith notice to the Purchaser ("Offering Notice") consistent with the notice given to all other potential investors in such Subsequent Transaction, including the relevant terms and conditions of such Subsequent Transaction as are delivered to all other potential investors, and the Purchaser shall have the right to participate on equivalent terms and conditions in up to 10% of such Subsequent Transaction by delivering notice to the Company by such deadline (the "Participation Deadline") as shall be determined by the underwriter or the investment banker involved in the transaction, or in the absence of either an underwriter or an investment banker, the Company, and applicable to all potential investors in such Subsequent Transaction, which notice from Purchaser shall indicate Purchaser's intention to participate in the Subsequent Transaction and the amount of its participation. In the event that the Purchaser does not provide notice prior to the Participation Deadline and the Company does not enter into such Subsequent

Transaction within five (5) Business Days from the Offering Notice, the Company shall again be required to provide an Offering Notice as set forth herein. The Company shall deliver an Offering Notice for each and any Subsequent Transaction and agrees that it shall not execute any definitive documentation for any Subsequent Transaction whatsoever, unless it has first complied with this Section 5(j). Notwithstanding anything to the contrary in this Section 5(i) and unless otherwise agreed to by Purchaser, the Company shall either confirm in writing to Purchaser that the transaction with respect to the Subsequent Transaction has been abandoned or shall publicly disclose its intention to enter into the Subsequent Transaction, in either case in such a manner such that Purchaser will not be in possession of any material, non-public information, by the fifth (5th) Business Day following delivery of the Offering Notice. If by such fifth (5th) Business Day, no public disclosure regarding a transaction with respect to the Subsequent Transaction has been made, and no notice regarding the abandonment of such transaction has been received by Purchaser, such transaction shall be deemed to have been abandoned and Purchaser shall no longer be in possession of any material, non-public information with respect to the Company or any of its Subsidiaries. If the Purchaser is in possession of any information that is reasonably deemed to be material, non-public information concerning the Company or any of its Subsidiaries during such five (5) Business Day period, the Purchaser agrees to keep such information confidential and shall not engage in transactions with respect to the Company's securities, and the Company agrees not to deliver any Purchase Notice to the Purchaser, in each case during such five (5) Business Day (or shorter) period that the Purchaser may be reasonably deemed to be in possession of material, non-public information concerning the Company or any of its Subsidiaries. Should the Company decide to pursue such transaction with respect to the Subsequent Transaction, the Company shall provide Purchaser with another Offering Notice in accordance with, and subject to, the terms of this Section 5(j) and Purchaser will again have the right of participation set forth in this Section 5(j).

6. TRANSFER AGENT INSTRUCTIONS.

The Company shall cause all of the Purchase Shares and shares of Common Stock underlying any warrants issued hereunder upon exercise (the "Warrant Shares"), to be issued under this Agreement to be issued without any restrictive legend unless the Purchaser expressly consents otherwise. The Company shall issue irrevocable instructions to the Transfer Agent, and any subsequent transfer agent, to issue Purchase Shares and Warrant Shares in the name of the Purchaser in the form agreed to by the parties prior to the Commencement Date (the "Irrevocable Transfer Agent Instructions"). The Company warrants to the Purchaser that no instruction other than the Irrevocable Transfer Agent Instructions referred to in this Section 6, will be given by the Company to the Transfer Agent with respect to the Purchase Shares and the Warrant Shares, and that the Purchase Shares and the Warrant Shares shall otherwise be freely transferable on the books and records of the Company as and to the extent provided in this Agreement.

7. CONDITIONS TO THE PARTIES' OBLIGATIONS.

(a) The obligations of the Company and the Purchaser to consummate the transactions contemplated hereunder in connection with the Backstop Offering are subject to the fulfillment or waiver, on or before the Commencement Date, of the following conditions:

(i) the Rights Offering shall have been consummated in accordance with the terms and conditions described in the Prospectus;

(ii) no judgment, injunction, decree, regulatory proceeding or other legal restraint shall prohibit, or have the effect of rendering unachievable, the consummation of the Backstop Offering or the transactions contemplated by this Agreement; and

(iii) Purchaser shall have executed the Securities Purchase Agreement and the Closing shall have occurred thereunder.

8. CONDITIONS TO THE COMPANY'S RIGHT TO COMMENCE SALES OF SHARES OF COMMON STOCK.

The right of the Company hereunder to commence sales of the Purchase Shares is subject to the satisfaction of each of the following conditions:

(a) The Purchaser shall have executed each of the Transaction Documents and delivered the same to the Company and Purchaser shall have purchased Notes pursuant to the Securities Purchase Agreement);

(b) A registration statement covering the sale of all of the Purchase Shares and Warrant Shares shall have been declared effective under the Securities Act by the SEC and no stop order with respect to the registration statement shall be pending or threatened by the SEC; and

(c) The representations and warranties of the Purchaser shall be true and correct in all material respects (except to the extent that any of such representations and warranties is already qualified as to materiality in Section 3 above, in which case, such representations and warranties shall be true and correct without further qualification) as of the date when made and as of the Commencement Date as though made at that time (except for representations and warranties that speak as of a specific date) and the Purchaser shall have performed, satisfied and complied with the covenants, agreements and conditions required by the Transaction Documents to be performed, satisfied or complied with by the Purchaser at or prior to the Commencement Date.

9. CONDITIONS TO THE INVESTOR'S OBLIGATION TO PURCHASE SHARES OF COMMON STOCK.

The obligation of the Purchaser to purchase Purchase Shares under this Agreement is subject to the satisfaction of each of the following conditions and once such conditions have been initially satisfied, there shall not be any ongoing obligation to satisfy such conditions after the Commencement has occurred:

(a) The Company shall have executed each of the Transaction Documents and delivered the same to the Purchaser;

(b) The Common Stock shall be authorized for quotation on the Principal Market, trading in the Common Stock shall not have been within the last 365 days suspended by the SEC or the Principal Market and the Purchase Shares and the Warrant Shares shall be approved for listing upon the Principal Market;

(c) The representations and warranties of the Company shall be true and correct in all material respects (except to the extent that any of such representations and warranties is already qualified as to materiality in Section 4 above, in which case, such representations and warranties shall be true and correct without further qualification) as of the date when made and as of the Commencement Date as though made at that time (except for representations and warranties that speak as of a specific date) and the Company shall have performed, satisfied and complied with the covenants, agreements and conditions required by the Transaction Documents to be performed, satisfied or complied with by the Company at or prior to the Commencement Date. The Purchaser shall have received a certificate, executed by the CEO, President or CFO of the Company, dated as of the Commencement Date, to the foregoing effect in the form agreed;

(d) The closing sales price per share of the Common Stock, as reported by the OTCQB or higher market, for each of the five (5) business days immediately preceding a Purchase shall be greater than the Subscription Price;

(e) To the extent the Rights Offering was not fully subscribed by July __, 2018, the Company shall have exercised its right to extend the duration of the Rights Offering for the additional 30-day extension period to August __, 2018, as described in the Prospectus, with the Closing of the Backstop Offering for the Unsubscribed Shares to occur at the end of such Rights Offering Extension Period;

(f) All of the officers and directors of the Company shall have executed and delivered a Lock-Up Agreement restricting the sale or other disposition of their shares of Common Stock for six months following the end of the Rights Offering Extension Period;

(g) As of the Commencement Date, the Company shall have reserved out of its authorized and unissued Common Stock, (i) solely for the purpose of effecting purchases of Purchase Shares hereunder, the necessary number of shares of Common Stock and (ii) as Warrant Shares in accordance with Section 5(e) hereof, the necessary number of shares of Common Stock;

(h) The Irrevocable Transfer Agent Instructions, in form acceptable to the parties shall have been delivered to and acknowledged in writing by the Company and the Company's Transfer Agent;

(i) The Company shall have delivered to the Purchaser a certificate evidencing the incorporation and good standing of the Company in the State of Delaware issued by the Secretary of State of the State of Delaware as of a date within ten (10) Business Days of the Commencement Date;

(j) The Company shall have delivered to the Purchaser a secretary's certificate executed by the Secretary of the Company, dated as of the Commencement Date, in the form agreed;

(k) A legal opinion of counsel to the Company, in the form of Exhibit A attached hereto, shall have been delivered to Purchaser.

(l) A registration statement covering the sale of all of the Purchase Shares and the Warrant Shares shall have been declared effective under the Securities Act by the SEC and no stop order with respect to the registration statement shall be pending or threatened by the SEC. The Company shall have prepared and delivered to the Purchaser a final and complete form of prospectus, dated and current as of the Commencement Date, to be used by the Purchaser in connection with any sales of the Purchase Shares and any Warrant Shares, and to be filed by the Company one (1) Business Day after the Commencement Date. The Company shall have made all filings under all applicable federal and state securities laws necessary to consummate the issuance of the Purchase Shares and Warrant Shares pursuant to this Agreement in compliance with such laws;

(m) No Event of Default has occurred, or any event which, after notice and/or lapse of time, would become an Event of Default has occurred; and

(n) The Company shall have provided the Purchaser with the information requested by the Purchaser in connection with its due diligence requests made prior to, or in connection with, the Commencement, in accordance with the terms of Section 5(f) hereof.

10. INDEMNIFICATION.

In consideration of the Purchaser's execution and delivery of the Transaction Documents and acquiring the Securities hereunder and in addition to all of the Company's other obligations under the Transaction Documents, the Company shall defend, protect, indemnify and hold harmless the Purchaser and all of its affiliates, shareholders, officers, directors, employees and direct or indirect investors and any of the foregoing person's agents or other representatives (including, without limitation, those retained in connection with the transactions contemplated by this Agreement) (collectively, the "Indemnitees") from and against any and all actions, causes of action, suits, claims, losses, costs, penalties, fees, liabilities and damages, and expenses in connection therewith (irrespective of whether any such Indemnitee is a party to the action for which indemnification hereunder is sought), and including reasonable attorneys' fees and disbursements (the "Indemnified Liabilities"), incurred by any Indemnitee as a result of, or arising out of, or relating to (a) any misrepresentation or breach of any representation or warranty made by the Company in the Transaction Documents or any other certificate, instrument or document contemplated hereby or thereby, (b) any breach of any covenant, agreement or obligation of the Company contained in the Transaction Documents or any other certificate, instrument or document contemplated hereby or thereby, (c) any cause of action, suit or claim brought or made against such Indemnitee and arising out of or resulting from the execution, delivery, performance or enforcement of the Transaction Documents or any other certificate, instrument or document contemplated hereby or thereby, or (d) any untrue statement or alleged untrue statement of a material fact contained in the Registration Statement or the Prospectus or in any amendment or supplement thereto, or arising out of or based upon any omission or alleged omission to state therein a material fact required to be stated therein or necessary to make the statements therein not misleading, other than with respect to Indemnified Liabilities which directly and primarily result from the gross negligence or willful misconduct of the Indemnitee. To the extent that the foregoing undertaking by the Company may be unenforceable for any reason, the Company shall make the maximum contribution to the payment and satisfaction of each of the Indemnified Liabilities which is permissible under applicable law. Payment under this indemnification shall be made within thirty (30) days from the date Purchaser makes written request for it. A certificate containing reasonable detail as to the amount of such indemnification submitted to the Company by Purchaser shall be conclusive evidence, absent manifest error, of the amount due from the Company to Purchaser.

11. EVENTS OF DEFAULT.

An "Event of Default" shall be deemed to have occurred at any time as any of the following events occurs:

(a) while any registration statement is required to be maintained effective pursuant to the terms hereof, the effectiveness of a registration statement registering the Purchase Shares or Warrant Shares lapses for any reason (including, without limitation, the issuance of a stop order) or is unavailable to the Purchaser for the resale of any or all of the Purchase Shares or Warrant Shares;

(b) the delisting of the Company's Common Stock from the Principal Market; provided, however, that the Common Stock is not immediately thereafter trading on the New York Stock Exchange, the Nasdaq Capital Market, the Nasdaq Global Market, the Nasdaq Global Select Market, or the OTC Bulletin Board (or nationally recognized successor thereto);

(c) the failure for any reason by the Transfer Agent to issue Purchase Shares or Warrant Shares to the Purchaser within five (5) Business Days after the applicable Purchase Date which the Purchaser is entitled to receive;

(d) the Company breaches any representation, warranty, covenant or other term or condition under any Transaction Document if such breach could have a Material Adverse Effect and except, in the case of a breach of a covenant which is reasonably curable, only if such breach continues for a period of at least five (5) Business Days;

(e) if the Company pursuant to or within the meaning of any Bankruptcy Law; (A) commences a voluntary case, (B) consents to the entry of an order for relief against it in an involuntary case, (C) consents to the appointment of a Custodian of it or for all or substantially all of its property, (D) makes a general assignment for the benefit of its creditors or is generally unable to pay its debts as the same become due;

(f) a court of competent jurisdiction enters an order or decree under any Bankruptcy Law that (A) is for relief against the Company in an involuntary case, (B) appoints a Custodian of the Company or for all or substantially all of its property, or (C) orders the liquidation of the Company or any Subsidiary; or

(g) if at any time after the Commencement Date, the Exchange Cap is reached (to the extent such Exchange Cap is applicable pursuant to Section 2(c) hereof).

In addition to any other rights and remedies under applicable law and this Agreement, including the Purchaser termination rights under Section 12 hereof, so long as an Event of Default has occurred and is continuing, or if any event which, after notice and/or lapse of time, would become an Event of Default, has occurred and is continuing, the Purchaser shall not be permitted or obligated to purchase any shares of Common Stock under this Agreement.

12. TERMINATION

This Agreement may be terminated only as follows:

(a) If pursuant to or within the meaning of any Bankruptcy Law, the Company commences a voluntary case or any Person commences a proceeding against the Company, a Custodian is appointed for the Company or for all or substantially all of its property, or the Company makes a general assignment for the benefit of its creditors, this Agreement shall automatically terminate without any liability or payment to the Company without further action or notice by any Person. No such termination of this Agreement under this Section 11(a) shall affect the Company's or the Purchaser's obligations under this Agreement with respect to pending purchases and the Company and the Purchaser shall complete their respective obligations with respect to any pending purchases under this Agreement.

(b) In the event that the Commencement shall not have occurred, the Company shall have the option to terminate this Agreement for any reason or for no reason without any liability whatsoever of any party to any other party under this Agreement.

(c) In the event that the Commencement shall not have occurred on or before December 31, 2018, due to the failure to satisfy the conditions set forth in Sections 6, 7 and 8 above with respect to the Commencement, the non-breaching party shall have the option to terminate this Agreement at the close of business on such date or thereafter without liability of any party to any other party.

(d) The Purchaser may terminate this Agreement, (i) if consummation of the Rights Offering and/or the Backstop Offering is prohibited by applicable law, rules or regulations, or (ii) if the Company materially breaches its obligations under this Agreement and such breach is not cured within ten (10) business days following written notice thereof to the Company.

(e) The Company may terminate this Agreement (i) in the event the Company, in its reasonable judgment, determines that it is not in the best interests of the Company and its stockholders to proceed with the Rights Offering and/or the Backstop Offering, (ii) if consummation of the Rights Offering and/or the Backstop Offering is prohibited by applicable law, rules or regulations, or (iii) if the Purchaser breaches its obligations under this Agreement and

such breach is not cured within ten (10) business days following written notice thereof to the Purchaser. No such termination of this Agreement under this Section 12(e) shall affect the Company's or the Purchaser's obligations under this Agreement with respect to pending purchases and the Company and the Purchaser shall complete their respective obligations with respect to any pending purchases under this Agreement.

(f) This Agreement shall automatically terminate on the date that the Company sells and the Purchaser purchases the full Available Amount as provided herein, without any action or notice on the part of any party and without any liability whatsoever of any party to any other party under this Agreement.

(g) If by the Maturity Date for any reason or for no reason the full Available Amount under this Agreement has not been purchased as provided for in Section 2 of this Agreement, this Agreement shall automatically terminate on the Maturity Date, without any action or notice on the part of any party and without any liability whatsoever of any party to any other party under this Agreement.

(h) At the option of the Purchaser, at any time after the occurrence of an Purchaser Termination Event.

Except as set forth in Sections 12(a), 12(e) and 12(f), any termination of this Agreement pursuant to this Section 12 shall be effected by written notice from the Company to the Purchaser, or the Purchaser to the Company, as the case may be, setting forth the basis for the termination hereof. The representations and warranties and covenants of the Company and the Purchaser contained in Sections 3, 4, 5 and 6 hereof, the indemnification provisions set forth in Section 10 hereof and the agreements and covenants set forth in Sections 11, 12 and 13 shall survive the Commencement and any termination of this Agreement. No termination of this Agreement shall affect the Company's or the Purchaser's rights or obligations under this Agreement with respect to pending purchases and the Company and the Purchaser shall complete their respective obligations with respect to any pending purchases under this Agreement.

13. MISCELLANEOUS.

(a) Governing Law; Jurisdiction; Jury Trial. The corporate laws of the State of Delaware shall govern all issues concerning the relative rights of the Company and its shareholders. All other questions concerning the construction, validity, enforcement and interpretation of this Agreement and the other Transaction Documents shall be governed by the internal laws of the State of New York, without giving effect to any choice of law or conflict of law provision or rule (whether of the State of New York or any other jurisdictions) that would cause the application of the laws of any jurisdictions other than the State of New York. Each party hereby irrevocably submits to the 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 under the other Transaction Documents or in connection herewith or therewith, or with any transaction contemplated hereby or discussed herein, 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 to such party at the address for such notices to it under this 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. EACH PARTY HEREBY IRREVOCABLY WAIVES ANY RIGHT IT MAY HAVE, AND AGREES NOT TO REQUEST, A JURY TRIAL FOR THE ADJUDICATION OF ANY DISPUTE HEREUNDER OR IN CONNECTION HEREWITH OR ARISING OUT OF THIS AGREEMENT OR ANY TRANSACTION CONTEMPLATED HEREBY.

(b) Counterparts. This Agreement may be executed in two or more identical counterparts, all of which shall be considered one and the same agreement and shall become effective when counterparts have been signed by each party and delivered to the other party; provided that a facsimile signature or signature delivered by e-mail in a ".pdf" format data file shall be considered due execution and shall be binding upon the signatory thereto with the same force and effect as if the signature were an original, not a facsimile signature or a signature in a ".pdf" format data file.

(c) Headings. The headings of this Agreement are for convenience of reference and shall not form part of, or affect the interpretation of, this Agreement.

(d) Severability. If any provision of this Agreement shall be invalid or unenforceable in any jurisdiction, such invalidity or unenforceability shall not affect the validity or enforceability of the remainder of this Agreement in that jurisdiction or the validity or enforceability of any provision of this Agreement in any other jurisdiction.

(e) Entire Agreement. This Agreement supersedes all other prior oral or written agreements between the Purchaser, the Company, their affiliates and persons acting on their behalf with respect to the matters discussed herein, and this Agreement, the other Transaction Documents and the instruments referenced herein contain the entire understanding of the parties with respect to the matters covered herein and therein and, except as specifically set forth herein or therein, neither the Company nor the Purchaser makes any representation, warranty, covenant or undertaking with respect to such matters. The Company acknowledges and agrees that it has not relied on, in any manner whatsoever, any representations or statements, written or oral, other than as expressly set forth in this Agreement.

(f) Notices. Any notices, consents or other communications required or permitted to be given under the terms of this Agreement must be in writing and will be deemed to have been delivered: (i) upon receipt when delivered personally; (ii) upon receipt when sent by facsimile or email (provided confirmation of transmission is mechanically or electronically generated and kept on file by the sending party); or (iii) one Business Day after deposit with a nationally recognized overnight delivery service, in each case properly addressed to the party to receive the same. The addresses and facsimile numbers and email addresses for such communications shall be at such address and/or facsimile number and/or to the attention of such other person as the recipient party has specified by written notice given to each other party three (3) Business Days prior to the effectiveness of such change. Written confirmation of receipt (A) given by the recipient of such notice, consent or other communication, (B) mechanically or electronically generated by the sender's facsimile machine containing the time, date, and recipient facsimile number or (C) provided by a nationally recognized overnight delivery service, shall be rebuttable evidence of personal service, receipt by facsimile or receipt from a nationally recognized overnight delivery service in accordance with clause (i), (ii) or (iii) above, respectively.

(g) Successors and Assigns. This Agreement shall be binding upon and inure to the benefit of the parties and their respective successors and assigns. The Company shall not assign this Agreement or any rights or obligations hereunder without the prior written consent of the Purchaser, including by merger or consolidation. The Purchaser may not assign its rights or obligations under this Agreement.

(h) No Third Party Beneficiaries. This Agreement is intended for the benefit of the parties hereto and their respective permitted successors and assigns, and is not for the benefit of, nor may any provision hereof be enforced by, any other person.

(i) Publicity. The Purchaser shall have the right to approve before issuance any press release, SEC filing or any other public disclosure made by or on behalf of the Company whatsoever with respect to, in any manner, the Purchaser, its purchases hereunder or any aspect of this Agreement or the transactions contemplated hereby; provided, however, that the Company shall be entitled, without the prior approval of the Purchaser, to make any press release or other public disclosure (including any filings with the SEC) with respect to such transactions as is required by applicable law and regulations so long as the Company and its counsel consult with the Purchaser in connection with any such press release or other public disclosure prior to its release. The Purchaser must be provided with a copy thereof at least one Business Day prior to any release or use by the Company thereof.

(j) Further Assurances. Each party shall do and perform, or cause to be done and performed, all such further acts and things, and shall execute and deliver all such other agreements, certificates, instruments and documents, as the other party may reasonably request in order to carry out the intent and accomplish the purposes of this Agreement and the consummation of the transactions contemplated hereby.

(k) Brokers and Financial Intermediaries. The Company represents and warrants to the Purchaser that it has not engaged any financial advisor, placement agent, broker or finder in connection with the transactions contemplated hereby, other than Source Capital Group, Inc., the dealer-manager for the Rights Offering, which will receive a dealer-manager fee of 8% of the gross proceeds raised by the Company in the Rights Offering and the Backstop Offering. The Purchaser represents and warrants to the Company that it has not engaged any financial advisor, placement agent, broker or finder in connection with the transactions contemplated hereby. Each party shall be responsible for the payment of any fees or commissions, if any, of any financial advisor, placement agent, broker or finder engaged by it relating to or arising out of the transactions contemplated hereby.

(l) No Strict Construction. The language used in this Agreement will be deemed to be the language chosen by the parties to express their mutual intent, and no rules of strict construction will be applied against any party.

(m) Remedies, Other Obligations, Breaches and Injunctive Relief. The remedies provided in this Agreement shall be cumulative and in addition to all other remedies available to a party under this Agreement, at law or in equity (including a decree of specific performance and/or other injunctive relief), no remedy of a party contained herein shall be deemed a waiver of compliance with the provisions giving rise to such remedy and nothing herein shall limit such party's right to pursue actual damages for any failure by the other party to comply with the terms of this Agreement. Each party acknowledges that a breach by it of its obligations hereunder will cause irreparable harm to the other party and that the remedy at law for any such breach may be inadequate. Each party therefore agrees that, in the event of any such breach or threatened breach, the other party shall be entitled, in addition to all other available remedies, to an injunction restraining any breach, without the necessity of showing economic loss and without any bond or other security being required.

(n) Amendment and Waiver. Provisions of this Agreement may be amended and the observance thereof may be waived (either generally or in a particular instance and either retroactively or prospectively), only with the written consent of the Company and the Purchaser.

(o) Failure or Indulgence Not Waiver. No failure or delay in the exercise of any power, right or privilege hereunder shall operate as a waiver thereof, nor shall any single or partial exercise of any such power, right or privilege preclude other or further exercise thereof or of any other right, power or privilege.

[Remainder of Page Left Intentionally Blank]

IN WITNESS WHEREOF, the Purchaser and the Company have caused this Backstop Commitment Purchase Agreement to be duly executed as of the date first written above.

DELCATH SYSTEMS, INC.

By: /s/ Jennifer K. Simpson
Name: Jennifer K. Simpson
Title: President and Chief Executive Officer
With a copy to (which shall not constitute notice):

Wexler Burkhart Hirschberg & Unger, LLP

Address for Notice:

1633 Broadway
Suite 22C
New York, New York 10019
Attention: Barbra Keck
E-Mail: bkeck@delcath.com

377 Oak Street
Concourse Level
Garden City, NY 11530
Attention: Jolie Kahn
e-mail: jkahn@WBHULAW.COM

[REMAINDER OF PAGE INTENTIONALLY LEFT BLANK

SIGNATURE PAGE FOR PURCHASER FOLLOWS]

IN WITNESS WHEREOF, the undersigned have caused this Backstop Commitment Purchase Agreement to be duly executed by their respective authorized signatories as of the date first indicated above.

Name of Purchaser:

Discover Growth Fund

Signature of Authorized Signatory of Purchaser:

/s/ David Sims

Name of Authorized Signatory:

David Sims

Title of Authorized Signatory:

Director

Email Address of Authorized Signatory:

dsims@sentinelmngt.com

Address for Notice to Purchaser:

103 South Church Street, 4th Floor

Grand Cayman KY1-1002

Cayman Islands

Available Amount:

\$50,000,000.00

EIN Number (if applicable):

BACKSTOP COMMITMENT PURCHASE AGREEMENT

BACKSTOP COMMITMENT PURCHASE AGREEMENT (this "Agreement"), dated as of July 20, 2018, by and between **Delcath Systems, Inc.**, a Delaware corporation (the "Company"), and the purchasers identified on the signature pages hereto (each, including its successors and permitted assigns, a "Purchaser," or in the aggregate, the "Purchasers").

WHEREAS:

WHEREAS, pursuant to a rights offering (the "Rights Offering"), the Company proposes to raise up to \$50 million by distributing, at no charge, to holders of the Company's common stock, par value \$0.01 per share (the "Common Stock"), on the record date set by the Board of Directors of the Company (the "Board") on or about July 1, 2018, non-transferable rights (the "Rights") to subscribe for and purchase shares of the Company's Common Stock;

WHEREAS, each Right will entitle the holder to subscribe for and purchase (the "Basic Subscription Right") one share of Common Stock at a price of \$1.75 per share (the "Subscription Price"), and each holder of Rights who exercises in full its Basic Subscription Right will be entitled to subscribe for additional shares of Common Stock, to the extent they are available, at the Subscription Price (the "Over-Subscription Right"), during the subscription period reasonably determined by the Board (the "Subscription Period");

WHEREAS, the Company has the right to extend the duration of the Rights Offering Subscription Period for up to an additional 30 days (the "Rights Offering Extension Period") until an expiration date reasonably determined by the Board;

WHEREAS, the Company is offering to the Purchaser the opportunity to purchase (the "Backstop Offering"), at the Purchase Price (as defined below) and subject to the terms and conditions set forth in this Agreement, shares of Common Stock that are not issued in the Rights Offering pursuant to the stockholders' exercise of their Basic Subscription Rights and Over-Subscription Rights (the "Unsubscribed Shares"); and

WHEREAS, the Purchasers are also parties to that certain Securities Purchase Agreement among the Company and the Purchasers, of even date herewith (the "Securities Purchase Agreement");

NOW, THEREFORE, in consideration of the foregoing and the mutual covenants herein contained and other good and valuable consideration, the Company and the Purchaser agree as follows:

AGREEMENT:**1. CERTAIN DEFINITIONS.**

For purposes of this Agreement, the following terms shall have the following meanings:

(a) “Available Amount” means each Purchaser’s pro rata amount as identified on the signature pages of this Agreement of initially Thirty Million Dollars (US\$30,000,000) (and up to Fifty Million Dollars (US\$50,000,000) if rights of participation are exercised) in the aggregate, which amount shall be reduced by the gross proceeds raised by the Company in the Rights Offering, and then reduced by the Purchase Amount each time the Purchaser purchases shares of Common Stock pursuant to Section 2 hereof.

(b) “Bankruptcy Law” means Title 11, U.S. Code, or any similar federal or state law for the relief of debtors.

(c) “Beneficial Ownership Limitation” shall have the meaning set forth in Section 2(e) hereof.

(d) “Business Day” means any day on which the Principal Market is open for trading including any day on which the Principal Market is open for trading for a period of time less than the customary time.

(e) “Change of Control” means:

(i) any “person” (as such term is used in Sections 13(d) and 14(d) of the Exchange Act (as defined below)), other than a trustee or other fiduciary holding securities of the Company under an employee benefit plan of the Company, becomes the “beneficial owner” (as defined in Rule 13d-3 promulgated under the Exchange Act), directly or indirectly, of securities of the Company representing 50% or more of (A) the outstanding shares of common stock of the Company or (B) the combined voting power of the Company’s then-outstanding securities;

(ii) the Company is party to a merger or consolidation, or series of related transactions, which results in the voting securities of the Company outstanding immediately prior thereto failing to continue to represent (either by remaining outstanding or by being converted into voting securities of the surviving or another entity) at least fifty (50%) percent of the combined voting power of the voting securities of the Company or such surviving or other entity outstanding immediately after such merger or consolidation;

(iii) the sale or disposition of all or substantially all of the Company’s assets (or consummation of any transaction, or series of related transactions, having similar effect);

(iv) the dissolution or liquidation of the Company; or

(v) any transaction or series of related transactions that has the substantial effect of any one or more of the foregoing.

(f) Intentionally Omitted.

(g) “Common Stock Equivalents” means any securities of the Company or the Subsidiaries which would entitle the holder thereof to acquire at any time Common Stock, including, without limitation, any debt, preferred stock, rights, options, warrants or other instrument that is at any time convertible into or exercisable or exchangeable for, or otherwise entitles the holder thereof to receive, Common Stock.

(h) "Confidential Information" means any information disclosed by either party to the other party, either directly or indirectly, in writing, orally or by inspection of tangible objects (including, without limitation, documents, prototypes, samples, plant and equipment), which is designated as "Confidential," "Proprietary" or some similar designation. Information communicated orally shall be considered Confidential Information if such information is confirmed in writing as being Confidential Information within ten (10) Business Days after the initial disclosure. Confidential Information may also include information disclosed to a disclosing party by third parties. Confidential Information shall not, however, include any information which (i) was publicly known and made generally available in the public domain prior to the time of disclosure by the disclosing party; (ii) becomes publicly known and made generally available after disclosure by the disclosing party to the receiving party through no action or inaction of the receiving party; (iii) is already in the possession of the receiving party at the time of disclosure by the disclosing party as shown by the receiving party's files and records immediately prior to the time of disclosure; (iv) is obtained by the receiving party from a third party without a breach of such third party's obligations of confidentiality; (v) is independently developed by the receiving party without use of or reference to the disclosing party's Confidential Information, as shown by documents and other competent evidence in the receiving party's possession; or (vi) is required by law to be disclosed by the receiving party, provided that the receiving party gives the disclosing party prompt written notice of such requirement prior to such disclosure and assistance in obtaining an order protecting the information from public disclosure.

(i) "Custodian" means any receiver, trustee, assignee, liquidator or similar official under any Bankruptcy Law.

(j) "Event of Default" shall have the meaning set forth in Section 11 hereof.

(k) "Exchange Act" means the Securities Exchange Act of 1934, as amended.

(l) "Purchaser Termination Event" means one of the following has occurred: (i) an Event of Default, subject to the expiration of any cure period under Section 12 hereof; (ii) a Material Adverse Effect; or (iii) a Change of Control of the Company.

(m) "Material Adverse Effect" means any set of circumstances or events which (i) is or could reasonably be expected to be material and adverse to the business, properties, operations, condition (financial or otherwise) or results of operations of the Company and its subsidiaries, taken as a whole, (ii) has or could reasonably be expected to have a material adverse effect on the Company's ability to perform its obligations under this Agreement, or (iii) result in the consolidated closing bid price of the Common Stock as reported on the OTCQB (the "Stock Price") on any day during the term of this Agreement being less than 50% of the Stock Price on the Business Day immediately preceding the execution of this Agreement.

(n) "Maturity Date" means the date that is the number of Business Days from the Commencement Date reasonably set by the Board.

(o) "Person" means an individual or entity including but not limited to any limited liability company, a partnership, a joint venture, a corporation, a trust, an unincorporated organization and a government or any department or agency thereof.

(p) "Principal Market" means the OTCQB; provided, however, that in the event the Company's Common Stock is ever listed or traded on the Nasdaq Capital Market, the Nasdaq Global Market, the Nasdaq Global Select Market, the New York Stock Exchange, or the OTC Bulletin Board (it being understood that as used herein "OTC Bulletin Board" shall also mean any successor or comparable market quotation system or exchange to the OTC Bulletin Board such as the OTCQB marketplace operated by the OTC Markets Group, Inc.), then the "Principal Market" shall mean such other market or exchange on which the Company's Common Stock is then listed or traded.

(q) "Purchase Amount" means, with respect to any particular purchase made hereunder, the number of Purchase Shares multiplied by the Purchase Price to be purchased by the Purchaser pursuant to Section 2 hereof.

(r) "Purchase Date" means with respect to any particular purchase made hereunder, the Business Day on which the Purchaser purchases the Purchase Shares pursuant to Section 2 hereof.

(s) "Purchase Price" means the Subscription Price

(t) "Purchase Shares" shall have the meaning set forth in Section 2(b) hereof.

(u) Intentionally Omitted.

(v) "SEC" means the U.S. Securities and Exchange Commission.

(w) "SEC Documents" means all reports, schedules, forms, statements and other documents filed by the Company under the Securities Act and the Exchange Act, including pursuant to Section 13(a) or 15(d) thereof, for the year preceding the date hereof, including the exhibits thereto and documents incorporated by reference therein.

(x) "Securities Act" means the Securities Act of 1933, as amended.

(y) Intentionally Omitted.

(z) "Transfer Agent" means the transfer agent of the Company as set forth in Section 13(f) hereof or such other entity which is then serving as the transfer agent for the Company in respect of the Common Stock.

2. BACKSTOP PURCHASE COMMITMENT.

Subject to the terms and conditions set forth in this Agreement, each Purchaser severally and not jointly hereby agrees, following the expiration of the Rights Offering Extension Period, to purchase from the Company in the Backstop Offering, all Purchase Shares, at the Purchase Price, up to a maximum purchase equal to the Available Amount as follows:

(a) Determination of Purchase Shares. Following the expiration of the Rights Offering Extension Period, the Company will determine the number of Purchase Shares, if any, and will notify the Purchaser in writing of (i) the number of Unsubscribed Shares, and (ii) the number of shares to be purchased by the Purchaser in the Backstop Offering (the "Purchase Shares").

(b) Automatic Purchases. Within two (2) Business Days following the satisfaction of the conditions (the "Commencement") as set forth in Sections 7 and 8 below (the date of satisfaction of such conditions, the "Commencement Date"), and each successive fifteen (15) Business Day period commencing with the Commencement Date during the term of this Agreement, the Purchaser shall purchase from the Company in the Backstop Offering up to the number of Purchase Shares (as defined below) equal to the lesser of (i) One Million Dollars (\$1,000,000) worth of Purchase Shares or (ii) 20% of the dollar trading volume of the Common Stock on the Principal Market on the five (5) Business Days immediately preceding the Purchase Date (each such purchase, a "Purchase" and such shares, "Purchase Shares") at the Purchase Price on the Purchase Date. The Purchase Amount may be increased on a case-by-case basis as reasonably requested by the Company. With respect to each such Purchase, the Company must deliver the Purchase Shares on the Business Day following the Purchase Date.

(c) Payment for Purchase Shares. The Purchaser shall pay to the Company an amount equal to the Purchase Amount with respect to such Purchase Shares as full payment for such Purchase Shares, at each Purchaser's option, in whole or in part via offset of any then outstanding Notes owed to Purchaser by Company, or by wire transfer of immediately available funds no later than four Business Days after a Purchase. The Company shall cause to be issued to the Purchaser the Purchase Shares in book-entry form delivered electronically via DWAC or DTC Fast system registered in the name of the Purchaser or its nominee. The Company shall not issue any fraction of a share of Common Stock upon any purchase. If the issuance would result in the issuance of a fraction of a share of Common Stock, the Company shall round such fraction of a share of Common Stock up or down to the nearest whole share. All payments made under this Agreement shall be made in lawful money of the United States of America or wire transfer of immediately available funds to such account as the Company may from time to time designate by written notice in accordance with the provisions of this Agreement. Whenever any amount expressed to be due by the terms of this Agreement is due on any day that is not a Business Day, the same shall instead be due on the next succeeding day that is a Business Day.

(d) Compliance with Rules of Principal Market. The Company shall not issue any Purchase Shares pursuant to this Agreement if such issuance would reasonably be expected to result in a breach of the Company's obligations under the rules and regulations of the Principal Market. The provisions of this Section 2(d) shall be implemented in a manner otherwise than in strict conformity with the terms hereof only if necessary to ensure compliance with the rules and regulations of the Principal Market.

(e) Beneficial Ownership Limitation. Notwithstanding anything to the contrary contained in this Agreement, the Company shall not issue or sell, and the Purchaser shall not purchase or acquire, any shares of Common Stock under this Agreement which, when aggregated with all other shares of Common Stock then beneficially owned by the Purchaser and its affiliates (as calculated pursuant to Section 13(d) of the Exchange Act and Rule 13d-3

promulgated thereunder), would result in the beneficial ownership by the Purchaser and its affiliates of more than 4.99% (or, if this limitation is waived by the Purchaser upon no less than 61 days' prior notice to the Company, 9.99%) of the then issued and outstanding shares of Common Stock (the "Beneficial Ownership Limitation"). Upon the written or oral request of the Purchaser, the Company shall confirm orally or in writing to the Purchaser within two (2) Business Days of such request the number of shares of Common Stock then outstanding. The Purchaser and the Company shall each cooperate in good faith in the determinations required hereby and the application hereof.

3. INVESTOR'S REPRESENTATIONS AND WARRANTIES.

The Purchaser represents and warrants to the Company that as of the date hereof and as of the Commencement Date:

(a) Organization and Qualification. The Purchaser has been duly organized and is validly existing as a corporation in good standing under the laws of its jurisdiction of incorporation. The Purchaser is duly qualified to do business as a foreign corporation in good standing in each jurisdiction in which it owns or leases real property or in which the conduct of its business makes such qualification necessary and in which the failure to so qualify would have or is reasonably likely to result in a material adverse effect upon the business, prospects, properties, operations, condition (financial or otherwise) or results of operations of the Purchaser and its subsidiaries, taken as a whole, or in its ability to perform its obligations under this Agreement.

(b) Authorization. The Purchaser has the power and authority to enter into this Agreement. This Agreement has been duly authorized, executed and delivered by the Purchaser, and constitutes a valid, legal and binding obligation of the Purchaser, enforceable against the Purchaser in accordance with its terms, except as rights to indemnity hereunder may be limited by federal or state securities laws and except as such enforceability may be limited by bankruptcy, insolvency, reorganization or similar laws affecting the rights of creditors generally and subject to general principles of equity.

(c) Investment Purpose. The Purchaser is acquiring the Purchase Shares ("Securities") as principal for its own account (this representation and warranty shall not limit the Purchaser's right to sell the Securities at any time pursuant to the registration statement described herein or otherwise in compliance with applicable federal and state securities laws). The Purchaser is acquiring the Securities hereunder in the ordinary course of its business.

(d) Information; Knowledge of Business; Financial Capacity. The Purchaser is familiar with the business in which the Company is engaged. The Purchaser has knowledge and experience in financial and business matters, is familiar with the investments such as the Common Stock, is fully aware of the risks involved in making an investment of this type, and is capable of evaluating the merits and risks of this investment. The Purchaser acknowledges that, before executing this Agreement, it had the opportunity to ask questions of and receive answers or obtain additional information from a representative of the Company concerning the financial and other affairs of the Company. The Purchaser is an "accredited investor" within the meaning of Rule 501(a) of Regulation D promulgated under the Securities Act and has adequate capital and means of providing for current needs to sustain a complete loss of its investment in the Company.

(e) Availability of Funds. The Purchaser has and will have available sufficient funds to purchase the Purchase Shares as and when required hereunder.

(f) No Prior Short Selling. The Purchaser represents and warrants to the Company that at no time prior to the date of this Agreement has any of the Purchaser, its agents, representatives or affiliates engaged in or effected, in any manner whatsoever, directly or indirectly, any (i) “short sale” (as such term is defined in Section 242.200 of Regulation SHO of the Exchange Act) of the Common Stock, (ii) any hedging transaction with respect to the Common Stock, or (iii) any transaction or arrangement which establishes or has the effect of establishing a net short position with respect to the Common Stock.

4. REPRESENTATIONS AND WARRANTIES OF THE COMPANY.

The Company represents and warrants to the Purchaser that except as set forth in the SEC Documents and the Registration Statement (as hereinafter defined), or in the Disclosure Schedules attached to the Securities Purchase Agreement and incorporated herein by reference and made a part hereof, as of the date hereof and as of the Commencement Date:

(a) Subsidiaries. All of the direct and indirect subsidiaries of the Company are set forth in the SEC Documents (each a “Subsidiary” and collectively the “Subsidiaries”). The Company owns, directly or indirectly, all of the capital stock or other equity interests of each Subsidiary free and clear of any Liens, and all the issued and outstanding shares of capital stock of each Subsidiary are validly issued and are fully paid, non-assessable and free of preemptive and similar rights to subscribe for or purchase securities.

(b) Organization and Qualification. Each of the Company and its Significant Subsidiaries (which has the meaning set forth in Rule 1-02 of Regulation S-X) has been duly organized and is validly existing as a corporation in good standing under the laws of its jurisdiction of incorporation. Each of the Company and its Significant Subsidiaries has the corporate power and authority to own its properties and conduct its business as currently being carried on and as described in the SEC Documents, and is duly qualified to do business as a foreign corporation in good standing in each jurisdiction in which it owns or leases real property or in which the conduct of its business makes such qualification necessary and in which the failure to so qualify would have or is reasonably likely to result in a Material Adverse Effect.

(c) Authorization. The Company has the power and authority to enter into this Agreement and to authorize, issue and sell the Securities as contemplated by this Agreement. This Agreement has been duly authorized, executed and delivered by the Company, and constitutes a valid, legal and binding obligation of the Company, enforceable against the Company in accordance with its terms, except as rights to indemnity hereunder may be limited by federal or state securities laws and except as such enforceability may be limited by bankruptcy, insolvency, reorganization or similar laws affecting the rights of creditors generally and subject to general principles of equity.

(d) **No Conflict.** The execution, delivery and performance of this Agreement and the consummation of the transactions herein contemplated will not (i) result in a breach or violation of any of the terms and provisions of, or constitute a default under, any law, rule or regulation to which the Company or any Significant Subsidiary is subject, or by which any property or asset of the Company or any Significant Subsidiary is bound or affected, (ii) conflict with, result in any violation or breach of, or constitute a default (or an event that with notice or lapse of time or both would become a default) under, or give to others any right of termination, amendment, acceleration or cancellation (with or without notice, lapse of time or both) of, any agreement, lease, credit facility, debt, note, bond, mortgage, indenture or other instrument (the “Contracts”) or obligation or other understanding to which the Company or any Significant Subsidiary is a party of by which any property or asset of the Company or any Significant Subsidiary is bound or affected, except to the extent that such conflict, default, termination, amendment, acceleration or cancellation right is not reasonably likely to result in a Material Adverse Effect, or (iii) result in a breach or violation of any of the terms and provisions of, or constitute a default under, the Company’s charter or by laws.

(e) **No Organization Document Violation.** Neither the Company nor any of its Significant Subsidiaries is in violation, breach or default under its certificate of incorporation, by-laws or other equivalent organizational or governing documents, except where the violation, breach or default in the case of a Significant Subsidiary of the Company is not reasonably likely to result in a Material Adverse Effect.

(f) **Consents.** All consents, approvals, orders, authorizations and filings required on the part of the Company and its subsidiaries in connection with the execution, delivery or performance of this Agreement have been obtained or made, other than such consents, approvals, orders and authorizations the failure of which to make or obtain is not reasonably likely to result in a Material Adverse Effect.

(g) **No Delisting.** The Common Stock is registered pursuant to Section 12(b) of the Exchange Act and is included or approved for inclusion on the Principal Market. There is no action pending by the Company or, to the Company’s knowledge, the Principal Market, to delist the Common Stock from the Principal Market, nor has the Company received any notification that the Principal Market is contemplating terminating such listing. When issued, the Securities will be listed on the Principal Market. The Company has not taken, directly or indirectly, any action that is designed to or that has constituted or that would 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 Securities.

(h) **Validity of Shares.** All of the issued and outstanding shares of capital stock of the Company are duly authorized and validly issued, fully paid and nonassessable, and have been issued in compliance with all applicable securities laws, and conform to the description thereof in the SEC Documents. Except for the issuances of options or restricted stock or restricted stock units in the ordinary course of business, since the respective dates as of which information is provided in the SEC Documents, the Company has not entered into or granted any convertible or exchangeable securities, options, warrants, agreements, contracts or other rights in existence to purchase or acquire from the Company any shares of the capital stock of the Company.

(i) Capitalization. As of the date hereof, the capitalization of the Company (excluding the issuance of Purchase Shares hereunder) is as set forth in the Company's Quarterly Report on Form 10-Q for the quarter ended March 31, 2018. The Company has not issued any capital stock since its most recently filed periodic report under the Exchange Act, other than pursuant to the exercise of employee stock options under the Company's stock option plans, and pursuant to the conversion or exercise of Common Stock Equivalents outstanding as of the date of the most recently filed periodic report under the Exchange Act. No Person has any right of first refusal, preemptive right, right of participation, or any similar right to participate in the transactions contemplated by the Transaction Documents. Except as set forth in the SEC Documents, and except as a result of the purchase and sale of the Securities, there are no outstanding options, warrants, script rights to subscribe to, calls or commitments of any character whatsoever relating to, or securities, rights or obligations convertible into or exercisable or exchangeable for, or giving any Person any right to subscribe for or acquire, any shares of Common Stock, or contracts, commitments, understandings or arrangements by which the Company or any Subsidiary is or may become bound to issue additional shares of Common Stock or Common Stock Equivalents. The issuance and sale of the Securities will not obligate the Company to issue shares of Common Stock or other securities to any Person (other than the Purchaser) and will not result in a right of any holder of Company securities to adjust the exercise, conversion, exchange or reset price under any of such securities. All of the outstanding shares of capital stock of the Company are validly issued, fully paid and nonassessable, have been issued in compliance with all federal and state securities laws, and none of such outstanding shares was issued in violation of any preemptive rights or similar rights to subscribe for or purchase securities. No further approval or authorization of any shareholder, the Board of Directors of the Company or others is required for the issuance and sale of the Securities. There are no shareholders agreements, voting agreements or other similar agreements with respect to the Company's capital stock to which the Company is a party or, to the knowledge of the Company, between or among any of the Company's shareholders.

(j) Taxes. Each of the Company and its Significant Subsidiaries has filed all returns (as hereinafter defined) required to be filed with taxing authorities prior to the date hereof or has duly obtained extensions of time for the filing thereof. Each of the Company and its Significant Subsidiaries has paid all taxes (as hereinafter defined) shown as due on such returns that were filed and has paid all taxes imposed on or assessed against the Company or such respective Significant Subsidiary. The provisions for taxes payable, if any, shown on the consolidated financial statements filed with or as part of the SEC Documents are sufficient for all accrued and unpaid taxes, whether or not disputed, and for all periods to and including the dates of such consolidated financial statements. Except as disclosed in the SEC Documents (i) no issues have been raised (and are currently pending) by any taxing authority in connection with any of the returns or taxes asserted as due from the Company or its Significant Subsidiaries, and (ii) no waivers of statutes of limitation with respect to the returns or collection of taxes have been given by or requested from the Company or its Significant Subsidiaries. The term "taxes" mean all federal, state, local, foreign, and other net income, gross income, gross receipts, sales, use, ad valorem, transfer, franchise, profits, license, lease, service, service use, withholding, payroll, employment, excise, severance, stamp, occupation, premium, property, windfall profits, customs, duties or other taxes, fees, assessments, or charges of any kind whatever, together with any interest and any penalties, additions to tax, or additional amounts with respect thereto. The term "returns" means all returns, declarations, reports, statements, and other documents required to be filed in respect to taxes.

(k) SEC Documents. The SEC Documents represent all reports, schedules, forms, statements and other documents required to be filed by the Company under the Securities Act and the Exchange Act, including pursuant to Section 13(a) or 15(d) thereof, for the one year preceding the date hereof.

(l) No Material Misstatement. At the date hereof and at the Commencement Date, each SEC Document, the Registration Statement and any post-effective amendment thereto complied or will comply in all material respects with the requirements of the Securities Act and the Rules and Regulations and did not and will not contain any 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 Company had a reasonable basis for, and made in good faith, each “forward-looking statement” (within the meaning of Section 27A of the Securities Act or Section 21E of the Exchange Act) contained or incorporated by reference in the SEC Documents. All statistical or market-related data included or incorporated by reference in the SEC Documents are based on or derived from sources that the Company reasonably 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.

(m) Financial Statements. The consolidated financial statements of the Company, together with the related notes, included in the SEC Documents comply in all material respects with the applicable requirements of the Securities Act and the Exchange Act and fairly present the financial condition of the Company as of the dates indicated and the results of operations and changes in cash flows for the periods therein specified in conformity with generally accepted accounting principles consistently applied throughout the periods involved present fairly the information required to be stated therein. No other financial statements, pro forma financial information or schedules are required under the Securities Act to be included in the SEC Documents.

(n) No Material Liabilities. Since the respective dates as of which information is given in the SEC Documents and the Registration Statement, (i) neither the Company nor any of its Significant Subsidiaries has incurred any material liabilities or obligations, direct or contingent, or entered into any material transactions other than in the ordinary course of business, (ii) the Company has not declared or paid any dividends or made any distribution of any kind with respect to its capital stock, (iii) there has not been any change in the capital stock of the Company or any of its Significant Subsidiaries (other than a change in the number of outstanding shares of Common Stock due to the issuance of shares upon the exercise of outstanding convertible notes, options or warrants or the issuance of restricted stock awards or restricted stock units under the Company’s existing stock awards plan, or any new grants thereof in the ordinary course of business), (iv) there has not been any material change in the Company’s long-term or short-term debt, and (v) there has not been the occurrence of any Material Adverse Effect.

(o) Books and Records. The Company makes and keeps accurate books and records and maintains a system of internal accounting controls sufficient to provide reasonable assurance

that (a) transactions are executed in accordance with management's general or specific authorization, (b) transactions are recorded as necessary to permit preparation of financial statements in conformity with generally accepted accounting principles, consistently applied and to maintain accountability for assets, (c) access to assets is permitted only in accordance with management's general or specific authorization and (d) the recorded accountability for assets is compared with existing assets at reasonable intervals and appropriate action is taken with respect to any differences. Except as disclosed in the SEC Documents, there has not been a material weakness in the Company's internal control over financial reporting (whether or not remediated) and since January 1, 2018, and there has been 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.

(p) Disclosure Controls and Procedures. The Company has established and maintains disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)), which (i) are designed to ensure that material information relating to the Company, including its consolidated subsidiaries, is made known to the Company's principal executive officer and its principal financial officer by others within those entities, particularly during the periods in which the periodic reports required under the Exchange Act are being prepared and (ii) are effective in all material respects to perform the functions for which they were established. The Company is not aware of any fraud, whether or not material, that involves management or other employees who have a significant role in the Company's internal control over financial reporting with respect to the Company's internal control over financial reporting.

(q) Acknowledgment Regarding Purchaser's Status. The Company acknowledges and agrees that the Purchaser is acting solely in the capacity of arm's length purchaser with respect to this Agreement and the Registration Rights Agreement (as hereinafter defined, together, the "Transaction Documents") and the transactions contemplated hereby and thereby. The Company further acknowledges that the Purchaser is not acting as a financial advisor or fiduciary of the Company (or in any similar capacity) with respect to the Transaction Documents and the transactions contemplated hereby and thereby and any advice given by the Purchaser or any of its representatives or agents in connection with the Transaction Documents and the transactions contemplated hereby and thereby is merely incidental to the Purchaser's purchase of the Securities. The Company further represents to the Purchaser that the Company's decision to enter into the Transaction Documents has been based solely on the independent evaluation by the Company and its representatives and advisors.

(r) Absence of Litigation. There is no pending or, to the knowledge of the Company, any threatened, action, suit or proceeding to which the Company or any of its Significant Subsidiaries is a party or of which any property or assets of the Company or its subsidiaries is the subject of before or by any court or governmental agency, authority or body, or any arbitrator or mediator, which is reasonably likely to result in a Material Adverse Effect.

(s) Permits. The Company and each of its Significant Subsidiaries holds, and is in compliance with, all franchises, grants, authorizations, licenses, permits, easements, consents, certificates and orders ("Permits") of any governmental or self regulatory agency, authority or body required for the conduct of its business, and all such Permits are in full force and effect, in each case except where the failure to hold, or comply with, any of them is not reasonably likely to result in a Material Adverse Effect.

(t) Title. The Company and its Significant Subsidiaries have good and marketable title to all property (whether real or personal) described in the SEC Documents as being owned by them that are material to the business of the Company, in each case free and clear of all liens, claims, security interests, other encumbrances or defects, except those that are not reasonably likely to result in a Material Adverse Effect. The property held under lease by the Company and its Significant Subsidiaries is held by them under valid, subsisting and enforceable leases with only such exceptions with respect to any particular lease as are not material or do not interfere in any material respect with the conduct of the business of the Company and its subsidiaries.

(u) Sarbanes-Oxley Act Compliance. The Company and each of its subsidiaries has complied with, is not in violation of, and has not received any notice of violation relating to any law, rule or regulation relating to the conduct of its business, or the ownership or operation of its property and assets, including, without limitation, the Sarbanes-Oxley Act and the rules and regulations of the Commission thereunder, except where the failure to be in compliance is not reasonably likely to result in a Material Adverse Effect.

(v) Investment Company. The Company is not and, after giving effect to the offering and sale of the Securities and the application of the net proceeds thereof, will not be an “investment company,” as such term is defined in the Investment Company Act of 1940, as amended.

(w) Labor Relations. No material labor dispute exists or, to the knowledge of the Company, is imminent with respect to any of the employees of the Company, which could reasonably be expected to result in a Material Adverse Effect. None of the Company’s or its Subsidiaries’ employees is a member of a union that relates to such employee’s relationship with the Company, and neither the Company or any of its Subsidiaries is a party to a collective bargaining agreement, and the Company and its Subsidiaries believe that their relationships with their employees are good. No executive officer, to the knowledge of the Company, is, or is now expected to be, in violation of any material term of any employment contract, confidentiality, disclosure or proprietary information agreement or non-competition agreement, or any other contract or agreement or any restrictive covenant, and the continued employment of each such executive officer does not subject the Company or any of its Subsidiaries to any liability with respect to any of the foregoing matters. The Company and its Subsidiaries are in compliance with all U.S. federal, state, local and foreign laws and regulations relating to employment and employment practices, terms and conditions of employment and wages and hours, except where the failure to be in compliance could not, individually or in the aggregate, reasonably be expected to have a Material Adverse Effect.

(x) Compliance. Neither the Company nor any Subsidiary (i) is in default under or in violation of (and no event has occurred that has not been waived that, with notice or lapse of time or both, would result in a default by the Company or any Subsidiary under), nor has the Company or any Subsidiary received notice of a claim that it is in default under or that it is in violation of, any indenture, loan or credit agreement or any other agreement or instrument to which it is a party or by which it or any of its properties is bound (whether or not such default or

violation has been waived), (ii) is in violation of any order of any court, arbitrator or governmental body, or (iii) is or has been in violation of any statute, rule or regulation of any governmental authority, including without limitation all foreign, federal, state and local laws applicable to its business and all such laws that affect the environment, except in each case as could not have or reasonably be expected to result in a Material Adverse Effect.

(y) Patents and Trademarks. The Company and the Subsidiaries have, or have rights to use, all patents, patent applications, trademarks, trademark applications, service marks, trade names, trade secrets, inventions, copyrights, licenses and other intellectual property rights and similar rights necessary or material for use in connection with their respective businesses as described in the SEC Documents and which the failure to so have could have a Material Adverse Effect (collectively, the "Intellectual Property Rights"). Neither the Company nor any Subsidiary has received a notice (written or otherwise) that the Intellectual Property Rights used by the Company or any Subsidiary violates or infringes upon the rights of any Person. To the knowledge of the Company, all such Intellectual Property Rights are enforceable and there is no existing infringement by another Person of any of the Intellectual Property Rights. The Company and its Subsidiaries have taken reasonable security measures to protect the secrecy, confidentiality and value of all of their intellectual properties, except where failure to do so could not, individually or in the aggregate, reasonably be expected to have a Material Adverse Effect.

(z) Registration Rights. No other Person has any right to cause the Company to effect the registration under the Securities Act of any securities of the Company.

(aa) Foreign Corrupt Practices. Neither the Company, nor to the knowledge of the Company, any agent or other person acting on behalf of the Company, has (i) directly or indirectly, used any funds for unlawful contributions, gifts, entertainment or other unlawful expenses related to foreign or domestic political activity, (ii) made any unlawful payment to foreign or domestic government officials or employees or to any foreign or domestic political parties or campaigns from corporate funds, (iii) failed to disclose fully any contribution made by the Company (or made by any person acting on its behalf of which the Company is aware) which is in violation of law, or (iv) violated in any material respect any provision of the Foreign Corrupt Practices Act of 1977, as amended.

(bb) Transactions With Affiliates. Except as set forth in the SEC Documents, none of the officers or directors of the Company and, to the knowledge of the Company, none of the employees of the Company is presently a party to any transaction with the Company or any Subsidiary (other than for services as employees, officers and directors), including any contract, agreement or other arrangement providing for the furnishing of services to or by, providing for rental of real or personal property to or from, or otherwise requiring payments to or from any officer, director or such employee or, to the knowledge of the Company, any entity in which any officer, director, or any such employee has a substantial interest or is an officer, director, trustee or partner, in each case in excess of \$120,000 other than for (i) payment of salary or consulting fees for services rendered, (ii) reimbursement for expenses incurred on behalf of the Company and (iii) other employee benefits, including stock option agreements under any stock option plan of the Company.

(cc) Disclosure. Except with respect to the material terms and conditions of the transactions contemplated by the Transaction Documents, the Company confirms that neither it nor any other Person acting on its behalf has provided the Purchaser or its agents or counsel with any information that it believes constitutes or might constitute material, non-public information that is not otherwise disclosed in (or incorporated by reference in) the SEC Documents, the Registration Statement or prospectus supplements thereto or otherwise made publicly available. The Company understands and confirms that the Purchaser will rely on the foregoing representation in effecting purchases and sales of securities of the Company. All of the disclosure furnished by or on behalf of the Company to the Purchaser regarding the Company, its business and the transactions contemplated hereby, is true and correct and does not contain any untrue statement of a material fact or omit to state any material fact necessary in order to make the statements made therein, in light of the circumstances under which they were made, not misleading. The Company acknowledges and agrees that the Purchaser neither makes nor has made any representations or warranties with respect to the transactions contemplated hereby other than those specifically set forth in Section 3 hereof.

5. COVENANTS.

(a) SEC Filings. The Company agrees to advise the Purchaser, as soon as reasonably practicable after the Company is advised or obtains knowledge thereof, with a confirmation in writing, of (i) the time when any amendment or supplement to the Prospectus has been filed, (ii) the issuance by the Commission of any stop order, or of the initiation or threatening of any proceeding suspending the effectiveness of the Registration Statement relating to the Rights Offering (the "Registration Statement") or any amendment thereto or any order preventing or suspending the use of any preliminary prospectus or the Prospectus or any amendment or supplement thereto, (iii) the issuance by any state securities commission of any notice of any proceedings for the suspension of the qualification of the shares of Common Stock for offering or sale in any jurisdiction or of the initiation, or the threatening, of any proceeding for such purpose, (iv) the receipt of any comments from the Commission directed toward the Registration Statement or any document incorporated therein by reference, and (v) any request by the Commission for any amendment to the Registration Statement or any amendment or supplement to the Prospectus or for additional information. The Company shall use its commercially reasonable efforts to prevent the issuance of any such order or the imposition of any such suspension and, if any such order is issued or suspension is imposed, to obtain the withdrawal thereof as promptly as possible.

(b) Information about the Purchaser. The Purchaser agrees to furnish to the Company all information with respect to the Purchaser that may be necessary or appropriate and will ensure that any information furnished to the Company for the Prospectus by the Purchaser does not contain any untrue statement of material fact or omit to state a material fact required to be stated in the Prospectus or necessary in order to make the statements therein, in the light of the circumstances under which they were made, not misleading.

(c) Confidentiality. The Purchaser acknowledges that the information received by it pursuant to this Agreement is confidential and for its use only. The Purchaser will not use such information in violation of applicable law or disclose or disseminate any such information, including any information with respect to this Agreement or the transactions contemplated

hereby, without the prior written consent of the Company, which consent shall not be unreasonably withheld or delayed, except if such disclosure is required by applicable law or applicable stock market regulations, in which case the Purchaser shall consult in advance with respect to such disclosure with the Company to the extent reasonably practicable.

(d) Listing. The Company shall promptly secure the listing of all of the Purchase Shares upon each national securities exchange and automated quotation system, if any, upon which shares of Common Stock are then listed (subject to official notice of issuance) and shall maintain, so long as any other shares of Common Stock shall be so listed, such listing of all such securities from time to time issuable under the terms of the Transaction Documents. The Company shall maintain the Common Stock's authorization for quotation on the Principal Market. The Company shall promptly, and in no event later than the following Business Day, provide to the Purchaser copies of any notices it receives from the Principal Market regarding the continued eligibility of the Common Stock for listing on such automated quotation system or securities exchange. The Company shall pay all fees and expenses in connection with satisfying its obligations under this section.

(e) Limitation on Short Sales and Hedging Transactions. The Purchaser agrees that beginning on the date of this Agreement and ending on the date of termination of this Agreement as provided in Section 11, the Purchaser and its agents, representatives and affiliates shall not in any manner whatsoever enter into or effect, directly or indirectly, any (i) "short sale" (as such term is defined in Section 242.200 of Regulation SHO of the Exchange Act) of the Common Stock or (ii) hedging transaction, which establishes a net short position with respect to the Common Stock.

(f) Due Diligence. The Purchaser shall have the right, from time to time as the Purchaser may reasonably deem appropriate, to perform reasonable due diligence on the Company during normal business hours. The Company and its officers and employees shall provide information and reasonably cooperate with the Purchaser in connection with any reasonable request by the Purchaser related to the Purchaser's due diligence of the Company. Each party hereto agrees not to disclose any Confidential Information of the other party to any third party and shall not use the Confidential Information for any purpose other than in connection with, or in furtherance of, the transactions contemplated hereby. Each party hereto acknowledges that the Confidential Information shall remain the property of the disclosing party and agrees that it shall take all reasonable measures to protect the secrecy of any Confidential Information disclosed by the other party. The Company confirms that neither it nor any other Person acting on its behalf shall provide the Purchaser or its agents or counsel with any information that it believes constitutes or might constitute material, non-public information which is not otherwise disclosed in the Registration Statement or prospectus supplements thereto or otherwise publicly disclosed.

(g) Purchase Records. The Purchaser and the Company shall each maintain records showing the remaining Available Amount at any given time and the dates and Purchase Amounts for each purchase or shall use such other method, reasonably satisfactory to the Purchaser and the Company.

(h) Taxes. The Company shall pay any and all transfer, stamp or similar taxes that may be payable with respect to the issuance and delivery of any shares of Common Stock to the Purchaser made under this Agreement.

(i) No Variable Rate Transactions and Right of Participation. From the date hereof until the Maturity Date, the Company shall be prohibited from effecting or entering into an agreement to effect any issuance by the Company or any of its Subsidiaries of Common Stock or Common Stock Equivalents for cash consideration (or a combination of units thereof) involving a Variable Rate Transaction other than in connection with an Exempt Issuance. “Variable Rate Transaction” means a transaction in which the Company (i) issues or sells any debt or equity securities that are convertible into, exchangeable or exercisable for, or include the right to receive additional shares of Common Stock either (A) at a conversion price, exercise price or exchange rate or other price that is based upon and/or varies with the trading prices of or quotations for the shares of Common Stock at any time after the initial issuance of such debt or equity securities, or (B) with a conversion, exercise or exchange price that is subject to being reset at some future date after the initial issuance of such debt or equity security or upon the occurrence of specified or contingent events directly or indirectly related to the business of the Company or the market for the Common Stock (including, without limitation any “full ratchet” or “weighted average” anti-dilution provisions) or (ii) enters into any agreement, including, but not limited to, an equity line of credit or at-the-market offering, during the period commencing on the date of this Agreement and ending on the first anniversary thereof, whereby the Company may sell securities at a future determined price. “Exempt Issuance” means the issuance of (a) shares of Common Stock, restricted stock units or options to employees, officers, directors or vendors of the Company pursuant to any stock or option plan duly adopted for such purpose, by the Board of Directors or a majority of the members of a committee of directors established for such purpose, (b) securities upon the exercise or exchange of or conversion of any Securities issued hereunder and/or other securities exercisable or exchangeable for or convertible into shares of Common Stock issued and outstanding on the date of this Agreement, provided that such securities have not been amended since the date of this Agreement to increase the number of such securities or to decrease the exercise price, exchange price or conversion price of such securities, and (c) securities issued pursuant to acquisitions or strategic transactions approved by the Board of Directors or a majority of the members of a committee of directors established for such purpose, which acquisitions or strategic transactions can have a Variable Rate Transaction component, provided that any such issuance shall only be to a Person (or to the equity holders of a Person) which is, itself or through its subsidiaries, an operating company or an asset in a business synergistic with the business of the Company and shall provide to the Company additional benefits in addition to the investment of funds, but shall not include a transaction in which the Company is issuing securities primarily for the purpose of raising capital or to an entity whose primary business is investing in securities. For six (6) Monthly Periods beginning from the date hereof other than the rights offering contemplated hereby, the Company agrees that, prior to entering into each and any definitive agreement for the sale directly or indirectly of any debt, Common Stock or Common Stock Equivalents primarily for the purpose of raising capital or to an entity whose primary business is investing in securities, to which definitive agreement, or series of related definitive agreements taken together, there are two (2) or more counterparties (not including the Company) (a “Subsequent Transaction”), the Company shall provide reasonable, good faith notice to the Purchaser (“Offering Notice”) consistent with the notice given to all other potential investors in such Subsequent Transaction, including the

relevant terms and conditions of such Subsequent Transaction as are delivered to all other potential investors, and the Purchaser shall have the right to participate on equivalent terms and conditions in up to 10% of such Subsequent Transaction by delivering notice to the Company by such deadline (the "Participation Deadline") as shall be determined by the underwriter or the investment banker involved in the transaction, or in the absence of either an underwriter or an investment banker, the Company, and applicable to all potential investors in such Subsequent Transaction, which notice from Purchaser shall indicate Purchaser's intention to participate in the Subsequent Transaction and the amount of its participation. In the event that the Purchaser does not provide notice prior to the Participation Deadline and the Company does not enter into such Subsequent Transaction within five (5) Business Days from the Offering Notice, the Company shall again be required to provide an Offering Notice as set forth herein. The Company shall deliver an Offering Notice for each and any Subsequent Transaction and agrees that it shall not execute any definitive documentation for any Subsequent Transaction whatsoever, unless it has first complied with this Section 5(j). Notwithstanding anything to the contrary in this Section 5(i) and unless otherwise agreed to by Purchaser, the Company shall either confirm in writing to Purchaser that the transaction with respect to the Subsequent Transaction has been abandoned or shall publicly disclose its intention to enter into the Subsequent Transaction, in either case in such a manner such that Purchaser will not be in possession of any material, non-public information, by the fifth (5th) Business Day following delivery of the Offering Notice. If by such fifth (5th) Business Day, no public disclosure regarding a transaction with respect to the Subsequent Transaction has been made, and no notice regarding the abandonment of such transaction has been received by Purchaser, such transaction shall be deemed to have been abandoned and Purchaser shall no longer be in possession of any material, non-public information with respect to the Company or any of its Subsidiaries. If the Purchaser is in possession of any information that is reasonably deemed to be material, non-public information concerning the Company or any of its Subsidiaries during such five (5) Business Day period, the Purchaser agrees to keep such information confidential and shall not engage in transactions with respect to the Company's securities, and the Company agrees not to deliver any Purchase Notice to the Purchaser, in each case during such five (5) Business Day (or shorter) period that the Purchaser may be reasonably deemed to be in possession of material, non-public information concerning the Company or any of its Subsidiaries. Should the Company decide to pursue such transaction with respect to the Subsequent Transaction, the Company shall provide Purchaser with another Offering Notice in accordance with, and subject to, the terms of this Section 5(j) and Purchaser will again have the right of participation set forth in this Section 5(j).

6. TRANSFER AGENT INSTRUCTIONS.

The Company shall cause all of the Purchase Shares and shares of Common Stock underlying any warrants issued hereunder upon exercise (the "Warrant Shares"), to be issued under this Agreement to be issued without any restrictive legend unless the Purchaser expressly consents otherwise. The Company shall issue irrevocable instructions to the Transfer Agent, and any subsequent transfer agent, to issue Purchase Shares and Warrant Shares in the name of the Purchaser in the form agreed to by the parties prior to the Commencement Date (the "Irrevocable Transfer Agent Instructions"). The Company warrants to the Purchaser that no instruction other than the Irrevocable Transfer Agent Instructions referred to in this Section 6, will be given by the Company to the Transfer Agent with respect to the Purchase Shares and the Warrant Shares, and that the Purchase Shares and the Warrant Shares shall otherwise be freely transferable on the books and records of the Company as and to the extent provided in this Agreement.

7. CONDITIONS TO THE PARTIES' OBLIGATIONS.

(a) The obligations of the Company and the Purchaser to consummate the transactions contemplated hereunder in connection with the Backstop Offering are subject to the fulfillment or waiver, on or before the Commencement Date, of the following conditions:

(i) the Rights Offering shall have been consummated in accordance with the terms and conditions described in the Prospectus;

(ii) no judgment, injunction, decree, regulatory proceeding or other legal restraint shall prohibit, or have the effect of rendering unachievable, the consummation of the Backstop Offering or the transactions contemplated by this Agreement; and

(iii) Purchaser shall have executed the Securities Purchase Agreement and the Closing shall have occurred thereunder.

8. CONDITIONS TO THE COMPANY'S RIGHT TO COMMENCE SALES OF SHARES OF COMMON STOCK.

The right of the Company hereunder to commence sales of the Purchase Shares is subject to the satisfaction of each of the following conditions:

(a) The Purchaser shall have executed each of the Transaction Documents and delivered the same to the Company and Purchaser shall have purchased Notes pursuant to the Securities Purchase Agreement);

(b) A registration statement covering the sale of all of the Purchase Shares and Warrant Shares shall have been declared effective under the Securities Act by the SEC and no stop order with respect to the registration statement shall be pending or threatened by the SEC; and

(c) The representations and warranties of the Purchaser shall be true and correct in all material respects (except to the extent that any of such representations and warranties is already qualified as to materiality in Section 3 above, in which case, such representations and warranties shall be true and correct without further qualification) as of the date when made and as of the Commencement Date as though made at that time (except for representations and warranties that speak as of a specific date) and the Purchaser shall have performed, satisfied and complied with the covenants, agreements and conditions required by the Transaction Documents to be performed, satisfied or complied with by the Purchaser at or prior to the Commencement Date.

9. CONDITIONS TO THE INVESTOR'S OBLIGATION TO PURCHASE SHARES OF COMMON STOCK.

The obligation of the Purchaser to purchase Purchase Shares under this Agreement is subject to the satisfaction of each of the following conditions and once such conditions have been initially satisfied, there shall not be any ongoing obligation to satisfy such conditions after the Commencement has occurred:

(a) The Company shall have executed each of the Transaction Documents and delivered the same to the Purchaser;

(b) The Common Stock shall be authorized for quotation on the Principal Market, trading in the Common Stock shall not have been within the last 365 days suspended by the SEC or the Principal Market and the Purchase Shares and the Warrant Shares shall be approved for listing upon the Principal Market;

(c) The representations and warranties of the Company shall be true and correct in all material respects (except to the extent that any of such representations and warranties is already qualified as to materiality in Section 4 above, in which case, such representations and warranties shall be true and correct without further qualification) as of the date when made and as of the Commencement Date as though made at that time (except for representations and warranties that speak as of a specific date) and the Company shall have performed, satisfied and complied with the covenants, agreements and conditions required by the Transaction Documents to be performed, satisfied or complied with by the Company at or prior to the Commencement Date. The Purchaser shall have received a certificate, executed by the CEO, President or CFO of the Company, dated as of the Commencement Date, to the foregoing effect in the form agreed;

(d) The closing sales price per share of the Common Stock, as reported by the OTCQB or higher market, for each of the five (5) business days immediately preceding a Purchase shall be greater than the Subscription Price;

(e) To the extent the Rights Offering was not fully subscribed by July , 2018, the Company shall have exercised its right to extend the duration of the Rights Offering for the additional 30-day extension period to August , 2018, as described in the Prospectus, with the Closing of the Backstop Offering for the Unsubscribed Shares to occur at the end of such Rights Offering Extension Period;

(f) All of the officers and directors of the Company shall have executed and delivered a Lock-Up Agreement restricting the sale or other disposition of their shares of Common Stock for six months following the end of the Rights Offering Extension Period;

(g) As of the Commencement Date, the Company shall have reserved out of its authorized and unissued Common Stock, (i) solely for the purpose of effecting purchases of Purchase Shares hereunder, the necessary number of shares of Common Stock and (ii) as Warrant Shares in accordance with Section 5(e) hereof, the necessary number of shares of Common Stock;

(h) The Irrevocable Transfer Agent Instructions, in form acceptable to the parties shall have been delivered to and acknowledged in writing by the Company and the Company's Transfer Agent;

(i) The Company shall have delivered to the Purchaser a certificate evidencing the incorporation and good standing of the Company in the State of Delaware issued by the Secretary of State of the State of Delaware as of a date within ten (10) Business Days of the Commencement Date;

(j) The Company shall have delivered to the Purchaser a secretary's certificate executed by the Secretary of the Company, dated as of the Commencement Date, in the form agreed;

(k) A legal opinion of counsel to the Company, in the form of Exhibit A attached hereto, shall have been delivered to Purchaser.

(l) A registration statement covering the sale of all of the Purchase Shares and the Warrant Shares shall have been declared effective under the Securities Act by the SEC and no stop order with respect to the registration statement shall be pending or threatened by the SEC. The Company shall have prepared and delivered to the Purchaser a final and complete form of prospectus, dated and current as of the Commencement Date, to be used by the Purchaser in connection with any sales of the Purchase Shares and any Warrant Shares, and to be filed by the Company one (1) Business Day after the Commencement Date. The Company shall have made all filings under all applicable federal and state securities laws necessary to consummate the issuance of the Purchase Shares and Warrant Shares pursuant to this Agreement in compliance with such laws;

(m) No Event of Default has occurred, or any event which, after notice and/or lapse of time, would become an Event of Default has occurred; and

(n) The Company shall have provided the Purchaser with the information requested by the Purchaser in connection with its due diligence requests made prior to, or in connection with, the Commencement, in accordance with the terms of Section 5(f) hereof.

10. INDEMNIFICATION.

In consideration of the Purchaser's execution and delivery of the Transaction Documents and acquiring the Securities hereunder and in addition to all of the Company's other obligations under the Transaction Documents, the Company shall defend, protect, indemnify and hold harmless the Purchaser and all of its affiliates, shareholders, officers, directors, employees and direct or indirect investors and any of the foregoing person's agents or other representatives (including, without limitation, those retained in connection with the transactions contemplated by this Agreement) (collectively, the "Indemnitees") from and against any and all actions, causes of action, suits, claims, losses, costs, penalties, fees, liabilities and damages, and expenses in connection therewith (irrespective of whether any such Indemnitee is a party to the action for which indemnification hereunder is sought), and including reasonable attorneys' fees and disbursements (the "Indemnified Liabilities"), incurred by any Indemnitee as a result of, or arising out of, or relating to (a) any misrepresentation or breach of any representation or warranty made by the Company in the Transaction Documents or any other certificate, instrument or document contemplated hereby or thereby, (b) any breach of any covenant, agreement or obligation of the Company contained in the Transaction Documents or any other certificate, instrument or document contemplated hereby or thereby, (c) any cause of action, suit or claim brought or made against such Indemnitee and arising out of or resulting from the execution,

delivery, performance or enforcement of the Transaction Documents or any other certificate, instrument or document contemplated hereby or thereby, or (d) any untrue statement or alleged untrue statement of a material fact contained in the Registration Statement or the Prospectus or in any amendment or supplement thereto, or arising out of or based upon any omission or alleged omission to state therein a material fact required to be stated therein or necessary to make the statements therein not misleading, other than with respect to Indemnified Liabilities which directly and primarily result from the gross negligence or willful misconduct of the Indemnitee. To the extent that the foregoing undertaking by the Company may be unenforceable for any reason, the Company shall make the maximum contribution to the payment and satisfaction of each of the Indemnified Liabilities which is permissible under applicable law. Payment under this indemnification shall be made within thirty (30) days from the date Purchaser makes written request for it. A certificate containing reasonable detail as to the amount of such indemnification submitted to the Company by Purchaser shall be conclusive evidence, absent manifest error, of the amount due from the Company to Purchaser.

11. EVENTS OF DEFAULT.

An “Event of Default” shall be deemed to have occurred at any time as any of the following events occurs:

(a) while any registration statement is required to be maintained effective pursuant to the terms hereof, the effectiveness of a registration statement registering the Purchase Shares or Warrant Shares lapses for any reason (including, without limitation, the issuance of a stop order) or is unavailable to the Purchaser for the resale of any or all of the Purchase Shares or Warrant Shares;

(b) the delisting of the Company’s Common Stock from the Principal Market; provided, however, that the Common Stock is not immediately thereafter trading on the New York Stock Exchange, the Nasdaq Capital Market, the Nasdaq Global Market, the Nasdaq Global Select Market, or the OTC Bulletin Board (or nationally recognized successor thereto);

(c) the failure for any reason by the Transfer Agent to issue Purchase Shares or Warrant Shares to the Purchaser within five (5) Business Days after the applicable Purchase Date which the Purchaser is entitled to receive;

(d) the Company breaches any representation, warranty, covenant or other term or condition under any Transaction Document if such breach could have a Material Adverse Effect and except, in the case of a breach of a covenant which is reasonably curable, only if such breach continues for a period of at least five (5) Business Days;

(e) if the Company pursuant to or within the meaning of any Bankruptcy Law; (A) commences a voluntary case, (B) consents to the entry of an order for relief against it in an involuntary case, (C) consents to the appointment of a Custodian of it or for all or substantially all of its property, (D) makes a general assignment for the benefit of its creditors or is generally unable to pay its debts as the same become due;

(f) a court of competent jurisdiction enters an order or decree under any Bankruptcy Law that (A) is for relief against the Company in an involuntary case, (B) appoints a Custodian of the Company or for all or substantially all of its property, or (C) orders the liquidation of the Company or any Subsidiary; or

(g) if at any time after the Commencement Date, the Exchange Cap is reached (to the extent such Exchange Cap is applicable pursuant to Section 2(c) hereof).

In addition to any other rights and remedies under applicable law and this Agreement, including the Purchaser termination rights under Section 12 hereof, so long as an Event of Default has occurred and is continuing, or if any event which, after notice and/or lapse of time, would become an Event of Default, has occurred and is continuing, the Purchaser shall not be permitted or obligated to purchase any shares of Common Stock under this Agreement.

12. TERMINATION

This Agreement may be terminated only as follows:

(a) If pursuant to or within the meaning of any Bankruptcy Law, the Company commences a voluntary case or any Person commences a proceeding against the Company, a Custodian is appointed for the Company or for all or substantially all of its property, or the Company makes a general assignment for the benefit of its creditors, this Agreement shall automatically terminate without any liability or payment to the Company without further action or notice by any Person. No such termination of this Agreement under this Section 11(a) shall affect the Company's or the Purchaser's obligations under this Agreement with respect to pending purchases and the Company and the Purchaser shall complete their respective obligations with respect to any pending purchases under this Agreement.

(b) In the event that the Commencement shall not have occurred, the Company shall have the option to terminate this Agreement for any reason or for no reason without any liability whatsoever of any party to any other party under this Agreement.

(c) In the event that the Commencement shall not have occurred on or before December 31, 2018, due to the failure to satisfy the conditions set forth in Sections 6, 7 and 8 above with respect to the Commencement, the non-breaching party shall have the option to terminate this Agreement at the close of business on such date or thereafter without liability of any party to any other party.

(d) The Purchaser may terminate this Agreement, (i) if consummation of the Rights Offering and/or the Backstop Offering is prohibited by applicable law, rules or regulations, or (ii) if the Company materially breaches its obligations under this Agreement and such breach is not cured within ten (10) business days following written notice thereof to the Company.

(e) The Company may terminate this Agreement (i) in the event the Company, in its reasonable judgment, determines that it is not in the best interests of the Company and its stockholders to proceed with the Rights Offering and/or the Backstop Offering, (ii) if consummation of the Rights Offering and/or the Backstop Offering is prohibited by applicable law, rules or regulations, or (iii) if the Purchaser breaches its obligations under this Agreement and such breach is not cured within ten (10) business days following written notice thereof to the Purchaser. No such termination of this Agreement under this Section 12(e) shall affect the

Company's or the Purchaser's obligations under this Agreement with respect to pending purchases and the Company and the Purchaser shall complete their respective obligations with respect to any pending purchases under this Agreement.

(f) This Agreement shall automatically terminate on the date that the Company sells and the Purchaser purchases the full Available Amount as provided herein, without any action or notice on the part of any party and without any liability whatsoever of any party to any other party under this Agreement.

(g) If by the Maturity Date for any reason or for no reason the full Available Amount under this Agreement has not been purchased as provided for in Section 2 of this Agreement, this Agreement shall automatically terminate on the Maturity Date, without any action or notice on the part of any party and without any liability whatsoever of any party to any other party under this Agreement.

(h) At the option of the Purchaser, at any time after the occurrence of an Purchaser Termination Event.

Except as set forth in Sections 12(a), 12(e) and 12(f), any termination of this Agreement pursuant to this Section 12 shall be effected by written notice from the Company to the Purchaser, or the Purchaser to the Company, as the case may be, setting forth the basis for the termination hereof. The representations and warranties and covenants of the Company and the Purchaser contained in Sections 3, 4, 5 and 6 hereof, the indemnification provisions set forth in Section 10 hereof and the agreements and covenants set forth in Sections 11, 12 and 13 shall survive the Commencement and any termination of this Agreement. No termination of this Agreement shall affect the Company's or the Purchaser's rights or obligations under this Agreement with respect to pending purchases and the Company and the Purchaser shall complete their respective obligations with respect to any pending purchases under this Agreement.

13. MISCELLANEOUS.

(a) Governing Law; Jurisdiction; Jury Trial. The corporate laws of the State of Delaware shall govern all issues concerning the relative rights of the Company and its shareholders. All other questions concerning the construction, validity, enforcement and interpretation of this Agreement and the other Transaction Documents shall be governed by the internal laws of the State of New York, without giving effect to any choice of law or conflict of law provision or rule (whether of the State of New York or any other jurisdictions) that would cause the application of the laws of any jurisdictions other than the State of New York. Each party hereby irrevocably submits to the 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 under the other Transaction Documents or in connection herewith or therewith, or with any transaction contemplated hereby or discussed herein, 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 to such party at the address for

such notices to it under this 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. EACH PARTY HEREBY IRREVOCABLY WAIVES ANY RIGHT IT MAY HAVE, AND AGREES NOT TO REQUEST, A JURY TRIAL FOR THE ADJUDICATION OF ANY DISPUTE HEREUNDER OR IN CONNECTION HEREWITH OR ARISING OUT OF THIS AGREEMENT OR ANY TRANSACTION CONTEMPLATED HEREBY.

(b) Counterparts. This Agreement may be executed in two or more identical counterparts, all of which shall be considered one and the same agreement and shall become effective when counterparts have been signed by each party and delivered to the other party; provided that a facsimile signature or signature delivered by e-mail in a “.pdf” format data file shall be considered due execution and shall be binding upon the signatory thereto with the same force and effect as if the signature were an original, not a facsimile signature or a signature in a “.pdf” format data file.

(c) Headings. The headings of this Agreement are for convenience of reference and shall not form part of, or affect the interpretation of, this Agreement.

(d) Severability. If any provision of this Agreement shall be invalid or unenforceable in any jurisdiction, such invalidity or unenforceability shall not affect the validity or enforceability of the remainder of this Agreement in that jurisdiction or the validity or enforceability of any provision of this Agreement in any other jurisdiction.

(e) Entire Agreement. This Agreement supersedes all other prior oral or written agreements between the Purchaser, the Company, their affiliates and persons acting on their behalf with respect to the matters discussed herein, and this Agreement, the other Transaction Documents and the instruments referenced herein contain the entire understanding of the parties with respect to the matters covered herein and therein and, except as specifically set forth herein or therein, neither the Company nor the Purchaser makes any representation, warranty, covenant or undertaking with respect to such matters. The Company acknowledges and agrees that it has not relied on, in any manner whatsoever, any representations or statements, written or oral, other than as expressly set forth in this Agreement.

(f) Notices. Any notices, consents or other communications required or permitted to be given under the terms of this Agreement must be in writing and will be deemed to have been delivered: (i) upon receipt when delivered personally; (ii) upon receipt when sent by facsimile or email (provided confirmation of transmission is mechanically or electronically generated and kept on file by the sending party); or (iii) one Business Day after deposit with a nationally recognized overnight delivery service, in each case properly addressed to the party to receive the same. The addresses and facsimile numbers and email addresses for such communications shall be at such address and/or facsimile number and/or to the attention of such other person as the recipient party has specified by written notice given to each other party three (3) Business Days prior to the effectiveness of such change. Written confirmation of receipt (A) given by the recipient of such notice, consent or other communication, (B) mechanically or electronically generated by the sender’s facsimile machine containing the time, date, and recipient facsimile number or (C) provided by a nationally recognized overnight delivery service, shall be rebuttable evidence of personal service, receipt by facsimile or receipt from a nationally recognized overnight delivery service in accordance with clause (i), (ii) or (iii) above, respectively.

(g) Successors and Assigns. This Agreement shall be binding upon and inure to the benefit of the parties and their respective successors and assigns. The Company shall not assign this Agreement or any rights or obligations hereunder without the prior written consent of the Purchaser, including by merger or consolidation. The Purchaser may not assign its rights or obligations under this Agreement.

(h) No Third Party Beneficiaries. This Agreement is intended for the benefit of the parties hereto and their respective permitted successors and assigns, and is not for the benefit of, nor may any provision hereof be enforced by, any other person.

(i) Publicity. The Purchaser shall have the right to approve before issuance any press release, SEC filing or any other public disclosure made by or on behalf of the Company whatsoever with respect to, in any manner, the Purchaser, its purchases hereunder or any aspect of this Agreement or the transactions contemplated hereby; provided, however, that the Company shall be entitled, without the prior approval of the Purchaser, to make any press release or other public disclosure (including any filings with the SEC) with respect to such transactions as is required by applicable law and regulations so long as the Company and its counsel consult with the Purchaser in connection with any such press release or other public disclosure prior to its release. The Purchaser must be provided with a copy thereof at least one Business Day prior to any release or use by the Company thereof.

(j) Further Assurances. Each party shall do and perform, or cause to be done and performed, all such further acts and things, and shall execute and deliver all such other agreements, certificates, instruments and documents, as the other party may reasonably request in order to carry out the intent and accomplish the purposes of this Agreement and the consummation of the transactions contemplated hereby.

(k) Brokers and Financial Intermediaries. The Company represents and warrants to the Purchaser that it has not engaged any financial advisor, placement agent, broker or finder in connection with the transactions contemplated hereby, other than Source Capital Group, Inc., the dealer-manager for the Rights Offering, which will receive a dealer-manager fee of 8% of the gross proceeds raised by the Company in the Rights Offering and the Backstop Offering. The Purchaser represents and warrants to the Company that it has not engaged any financial advisor, placement agent, broker or finder in connection with the transactions contemplated hereby. Each party shall be responsible for the payment of any fees or commissions, if any, of any financial advisor, placement agent, broker or finder engaged by it relating to or arising out of the transactions contemplated hereby.

(l) No Strict Construction. The language used in this Agreement will be deemed to be the language chosen by the parties to express their mutual intent, and no rules of strict construction will be applied against any party.

(m) Remedies, Other Obligations, Breaches and Injunctive Relief. The remedies provided in this Agreement shall be cumulative and in addition to all other remedies available to

a party under this Agreement, at law or in equity (including a decree of specific performance and/or other injunctive relief), no remedy of a party contained herein shall be deemed a waiver of compliance with the provisions giving rise to such remedy and nothing herein shall limit such party's right to pursue actual damages for any failure by the other party to comply with the terms of this Agreement. Each party acknowledges that a breach by it of its obligations hereunder will cause irreparable harm to the other party and that the remedy at law for any such breach may be inadequate. Each party therefore agrees that, in the event of any such breach or threatened breach, the other party shall be entitled, in addition to all other available remedies, to an injunction restraining any breach, without the necessity of showing economic loss and without any bond or other security being required.

(n) Amendment and Waiver. Provisions of this Agreement may be amended and the observance thereof may be waived (either generally or in a particular instance and either retroactively or prospectively), only with the written consent of the Company and the Purchaser.

(o) Failure or Indulgence Not Waiver. No failure or delay in the exercise of any power, right or privilege hereunder shall operate as a waiver thereof, nor shall any single or partial exercise of any such power, right or privilege preclude other or further exercise thereof or of any other right, power or privilege.

[Remainder of Page Left Intentionally Blank]

IN WITNESS WHEREOF, the Purchaser and the Company have caused this Backstop Commitment Purchase Agreement to be duly executed as of the date first written above.

DELCATH SYSTEMS, INC.

By: /s/ Jennifer K. Simpson
Name: Jennifer K. Simpson
Title: President and Chief Executive Officer

With a copy to (which shall not constitute notice):

Wexler Burkhardt Hirschberg & Unger, LLP

Address for Notice:

1633 Broadway
Suite 22C
New York, New York 10019
Attention: Barbra Keck
E-Mail: bkeck@delcath.com

377 Oak Street
Concourse Level
Garden City, NY 11530
Attention: Jolie Kahn
e-mail: jkahn@WBHULAW.COM

**[REMAINDER OF PAGE INTENTIONALLY LEFT BLANK
SIGNATURE PAGE FOR PURCHASER FOLLOWS]**

IN WITNESS WHEREOF, the undersigned have caused this Backstop Commitment Purchase Agreement to be duly executed by their respective authorized signatories as of the date first indicated above.

Name of Purchaser: **Discover Growth Fund, LLC**

By: Discover Fund Management, LLP Its Managing Member

By: Discover Fund Management, Inc. Its General Partner

By:/s/ John C. Kirkland

Name: John C. Kirkland

Title: President

Address for Notice to Purchaser:

Discover Growth Fund, LLC PO Box 6278 St. Thomas, VI 00804-6278

Available Amount: \$50,000,000.00

EIN Number (if applicable): 66-0854607