

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

FORM 8-K

CURRENT REPORT
Pursuant to Section 13 OR 15(d)
of The Securities Exchange Act of 1934

Date of Report (Date of earliest event reported): September 17, 2024

ARQ, INC.

(Name of registrant as specified in its charter)

Delaware
(State or other jurisdiction of incorporation)

001-37822
(Commission File Number)

27-5472457
(I.R.S. Employer Identification
Number)

**8051 E. Maplewood Avenue, Suite 210,
Greenwood Village, CO**
(Address of principal executive offices)

80111
(Zip Code)

Registrant's telephone number, including area code: **(720) 598-3500**

Not Applicable

(Former name or former address, if changed since last report)

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

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

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

Class	Trading Symbol	Name of each exchange on which registered
Common stock, par value \$0.001 per share	ARQ	Nasdaq Global Market

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

Emerging growth company

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

Item 1.01 Entry into a Material Definitive Agreement.

On September 20, 2024, Arq, Inc., a Delaware corporation (the "Company") entered into an underwriting agreement (the "Underwriting Agreement") with Canaccord Genuity LLC, as the representative of the underwriters named therein (the "Underwriters"), relating to the issuance and sale (the "Offering") of 4,770,000 shares (the "Firm Shares") of the Company's common stock, par value \$0.001 per share (the "Common Stock"), at a price to the public of \$5.25 per share. Under the terms of the Underwriting Agreement, the Underwriters have agreed to purchase the Firm Shares from the Company at a price of \$4.935 per share. The Company also granted the Underwriters an option exercisable for 30 days from the date of the Underwriting Agreement to purchase up to an additional 715,500 shares of Common Stock, on the same terms and conditions (the "Option Shares," and, together with the Firm Shares, the "Offered Shares").

The Company estimates that the net proceeds from the Offering will be approximately \$23.1 million, or approximately \$26.6 million if the Underwriters exercise in full their option to purchase the Option Shares, in each case after deducting underwriting discounts and commissions and estimated offering expenses. The Company intends to use the net proceeds from this Offering for general corporate purposes, which may include working capital, capital expenditures, including continued construction of granular activated carbon facilities at the Company's Red River and Corbin manufacturing facilities located in Coushatta, Louisiana and Corbin, Kentucky, respectively, research and development expenditures, commercial expenditures, debt service costs and repayment, acquisitions of new technologies, products or businesses, and investments.

The Firm Shares, and any Option Shares, are being offered and sold pursuant to a prospectus supplement dated September 20, 2024 and an accompanying base prospectus that form a part of the registration statement on Form S-3 (File No. 333-281762) filed with the U.S. Securities and Exchange Commission (the "SEC") on August 23, 2024, which became effective on September 4, 2024. The Offering is expected to close on September 23, 2024, subject to the satisfaction of customary closing conditions.

Robert Rasmus, the Company's Chief Executive Officer and member of the Company's board of directors, who is a related party of the Company, is expected to participate in the Offering.

The Company's board of directors granted an exemption under the Company's Tax Asset Protection Plan, as amended (the "Plan"), dated May 5, 2017, for the acquisition or ownership of the Offered Shares in the Offering, so that such acquisition and ownership of the Offered Shares in the Offering will be deemed an Exempt Transaction under the Plan.

The Underwriting Agreement contains customary representations, warranties, covenants and agreements by the Company, customary conditions to closing, indemnification obligations of the Company and the Underwriters, including for liabilities under the Securities Act of 1933, as amended, other obligations of the parties and termination provisions. The representations, warranties and covenants contained in the Underwriting Agreement were made only for purposes of such agreement and as of specific dates, were solely for the benefit of the parties to such agreement. A copy of the Underwriting Agreement is attached as Exhibit 1.1 hereto and is incorporated herein by reference. The foregoing description of the material terms of the Underwriting Agreement does not purport to be complete and is qualified in its entirety by reference to such exhibit.

Faegre Drinker Biddle & Reath LLP, counsel to the Company, has issued a legal opinion relating to the legality of the issuance and the sale of the Offered Shares. A copy of such legal opinion, including the consent included therein, is attached as Exhibit 5.1 hereto.

Item 1.02 Termination of a Material Definitive Agreement.

As previously disclosed in the Company's Current Report on Form 8-K filed with the SEC on January 24, 2024, the Company had entered into a Contract for Construction (the "Contract") with The Wieland-Davco Corporation, a Michigan corporation (the "Contractor"). The Contract provided for pre-construction and construction services to build a granular activated carbon facility at the Company's existing Red River manufacturing plant located in Coushatta, Louisiana.

On September 17, 2024, the Company provided the Contractor with notice (the "Notice") that the Company has elected to terminate the Contract, effective immediately. The Company provided the Notice after determining that certain timing and budget efficiencies could be achieved by conducting construction and project management functions internally. Pursuant to the terms of the Contract, the Company shall pay to the Contractor amounts due and owing through the date of the Notice for work completed and materials purchased and actual documented costs and expenses associated with demobilization associated with the termination of the Contract. The Company does not expect such amounts to be material. Construction and project completion timelines and budgets remain on track with those previously disclosed by the Company during its second quarter 2024 earnings call held on August 13, 2024.

Item 8.01 Other Events.

On September 19, 2024, the Company issued a press release announcing the proposed Offering and on September 20, 2024, the Company issued a press release announcing the pricing of the Offering. Copies of the press releases are attached as Exhibit 99.1 and Exhibit 99.2 hereto and are incorporated by reference herein.

Item 9.01 Financial Statements and Exhibits.

(d) Exhibits

Exhibit No.	Description
1.1	Underwriting Agreement, dated September 20, 2024, by and between the Company and Canaccord Genuity LLC as representative of the underwriters named therein.
5.1	Opinion of Faegre Drinker Biddle & Reath LLP.
23.1	Consent of Faegre Drinker Biddle & Reath LLP (included in Exhibit 5.1).
99.1	Press Release, dated September 19, 2024.
99.2	Press Release, dated September 20, 2024.
104	Cover Page Interactive Data File (embedded within the Inline XBRL document).

Filings for the Company were made under the name Advanced Emissions Solutions, Inc. (File No. 001-37822) starting on July 6, 2016. On February 1, 2024, the Company changed its name to Arq, Inc.

Forward-Looking Statements

This report contains forward-looking statements within the meaning of Section 21E of the Securities Exchange Act of 1934, which provides a "safe harbor" for such statements in certain circumstances. When used in this report, the words "can," "will," "intends," "expects," "believes," similar expressions and any other statements that are not historical facts are intended to identify those assertions as forward-looking statements. All statements that address activities, events or developments that the Company intends, expects or believes may occur in the future are forward-looking statements. These forward-looking statements include, but are not limited to, statements or expectations regarding: the amount of estimated net proceeds to the Company from the Offering; the total number of shares to be issued in the Offering; the anticipated use of proceeds from the Offering; the expected closing date of the Offering and the satisfaction of customary closing conditions related thereto; the potential cost and timing benefits that may be achieved from conducting construction and project management functions internally; and the amounts due to the Contractor in connection with the Contract termination. These forward-looking statements involve risks and uncertainties. Actual events or results could differ materially from those discussed in the forward-looking statements as a result of various factors including, but not limited to, the Company's ability to satisfy the customary closing conditions associated with, and ultimately close, the Offering, the costs of raw materials and supplies, costs of labor, changes in scope of work or other unexpected modifications of construction, inflationary pressures, the Company's ability to achieve expected cash flows and cost reductions, as well as other factors relating to the Company's business, as described in our filings with the SEC, including the Company's annual report on Form 10-K for the year ended December 31, 2023, with particular emphasis on the risk factor disclosures contained in those filings. You are cautioned not to place undue reliance on the forward-looking statements and to consult filings the Company has made and will make with the SEC for additional discussion concerning risks and uncertainties that may apply to the Company's business and the ownership of the Company's securities. In addition to causing the Company's actual results to differ, the factors listed above may cause the Company's intentions to change from those statements of intention set forth in this report. Such changes in the Company's intentions may also cause the Company's results to differ. The Company may change its intentions, at any time and without notice, based upon changes in such factors, its assumptions, or otherwise. The forward-looking statements speak only as to the date of this report and the Company disclaims any duty to update such statements unless required by law.

SIGNATURES

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

Date: September 20, 2024

Arq, Inc.

/s/ Robert Rasmus

Robert Rasmus
Chief Executive Officer

Arq, Inc.

4,770,000 Shares of Common Stock

Underwriting Agreement

New York, New York
September 20, 2024

Canaccord Genuity LLC
As Representative of the Several Underwriters
1 Post Office Square, 30th Floor
Boston, MA 02109

Ladies and Gentlemen:

Arq, Inc., a Delaware corporation (the “Company”), proposes to sell to the several underwriters named in Schedule I hereto (the “Underwriters”), for whom you (the “Representative”) are acting as representative, (i) an aggregate of 4,770,000 shares (the “Firm Shares”) of common stock, \$0.001 par value (“Common Stock”) of the Company, and (ii) at the election of the Underwriters, up to 715,500 additional shares of Common Stock (the “Optional Shares”). The Firm Shares and the Optional Shares that the Underwriters elect to purchase pursuant to Section 2 hereof are collectively referred to as “Shares”. To the extent there are no additional Underwriters listed on Schedule I other than you, the term Representative as used herein shall mean you, as Underwriter, and the term Underwriters shall mean the singular as the context requires. Certain terms used herein are defined in Section 22 hereof. In the event that the Company has no subsidiaries, or only one subsidiary, then all references in this underwriting agreement (this “Agreement”) to “subsidiaries” of the Company shall be deemed to refer to no subsidiary, or such single subsidiary, mutatis mutandis.

As used in this Agreement, the “Registration Statement” means the registration statement referred to in paragraph 1(a) hereof, including the exhibits, schedules and financial statements and any prospectus supplement relating to the Shares that is filed with the Securities and Exchange Commission (the “SEC”) pursuant to Rule 424(b) under the Securities Act of 1933, as amended, and the rules and regulations promulgated thereunder (the “Securities Act”) and deemed part of such registration statement pursuant to Rule 430B under the Securities Act, as amended on each Effective Date, and, in the event any post-effective amendment thereto or any registration statement and any amendments thereto filed pursuant to Rule 462(b) under the Securities Act (a “Rule 462(b) Registration Statement”) becomes effective prior to the Closing Date (as defined in Section 3 hereof), shall also mean such registration statement as so amended or such Rule 462(b) Registration Statement, as the case may be; the “Effective Date” means each date and time that the Registration Statement, any post-effective amendment or amendments thereto or any Rule 462(b) Registration Statement became or becomes effective; the “Base Prospectus” means the base prospectus referred to in paragraph 1(a) hereof contained in the Registration Statement at the date and time that this Agreement is executed and delivered by the parties hereto (the “Execution Time”); the “Preliminary Prospectus Supplement” means any

preliminary prospectus supplement to the Base Prospectus referred to in paragraph 1(a) hereof which is used prior to the filing of the Final Prospectus Supplement, together with the Base Prospectus; and the “Final Prospectus Supplement” means the prospectus supplement relating to the Shares that is first filed pursuant to Rule 424(b) under the Securities Act (“Rule 424(b)”) after the Execution Time, together with the Base Prospectus.

Any reference herein to the Registration Statement, the Base Prospectus, any Preliminary Prospectus Supplement or the Final Prospectus Supplement shall be deemed to refer to and include the documents incorporated by reference therein pursuant to Item 12 of Form S-3 which were filed under the Securities Exchange Act of 1934, as amended, and the rules and regulations promulgated thereunder (the “Exchange Act”) on or before the Effective Date of the Registration Statement or the issue date of the Base Prospectus, any Preliminary Prospectus Supplement or the Final Prospectus Supplement, as the case may be; and any reference herein to the terms “amend,” “amendment” or “supplement” with respect to the Registration Statement, the Base Prospectus, any Preliminary Prospectus Supplement or the Final Prospectus Supplement shall be deemed to refer to and include the filing of any document under the Exchange Act after the Effective Date of the Registration Statement or the issue date of the Base Prospectus, any Preliminary Prospectus Supplement or the Final Prospectus Supplement, as the case may be, deemed to be incorporated therein by reference.

As used in this Agreement, the “Pricing Disclosure Package” shall mean (i) the Base Prospectus, (ii) the Preliminary Prospectus Supplement used most recently prior to the Execution Time, (iii) any issuer free writing prospectus, as defined in Rule 433 under the Securities Act (an “Issuer Free Writing Prospectus”), identified in Schedule III hereto, (iv) the pricing information set forth in Schedule II hereto, and (v) any other free writing prospectus, as defined in Rule 405 under the Securities Act (a “Free Writing Prospectus”), that the parties hereto shall hereafter expressly agree in writing to treat as part of the Pricing Disclosure Package.

1. Representations and Warranties. The Company represents and warrants to, and agrees with, each Underwriter as set forth below in this Section 1.

(a) The Company met the requirements for use of Form S-3 under the Securities Act, including, but not limited to, General Instruction I.B.1 of Form S-3, at the time it prepared and filed with the SEC a shelf registration statement, as defined in Rule 405 (file number 333-281762) on Form S-3, including a related Base Prospectus, for registration under the Securities Act of the offering and sale of the Shares. The Company may have filed one or more amendments thereto, and has prepared a Preliminary Prospectus Supplement, each of which has previously been furnished to you and has become effective upon filing. The Company will next file with the SEC a Final Prospectus Supplement relating to the Shares in accordance with Rule 424(b). As filed, such Final Prospectus Supplement shall contain all information required by the Securities Act and the rules thereunder and, except to the extent the Representative shall agree in writing to a modification, shall be in all substantive respects in the form furnished to you prior to the Execution Time or, to the extent not completed at the Execution Time, shall contain only such specific additional information and other changes (beyond that contained in the Base Prospectus and any Preliminary Prospectus Supplement) as the Company has advised you, prior

to the Execution Time, will be included or made therein. The Registration Statement, at the Execution Time, is effective and meets the requirements set forth in Rule 415(a)(1)(x). There is no order preventing or suspending the use of the Registration Statement or the Pricing Disclosure Package, and, to the knowledge of the Company, no proceeding for that purpose or pursuant to Section 8A of the Securities Act against the Company or related to the offering has been initiated or threatened by the SEC and no notice of objection of the SEC to the use of such Registration Statement pursuant to Rule 401(g)(2) under the Securities Act has been received by the Company.

(b) On each Effective Date, the Registration Statement did, and when the Final Prospectus Supplement is first filed in accordance with Rule 424(b) and on the Closing Date, the Final Prospectus Supplement (and any amendment or supplement thereto) will, comply in all material respects with the applicable requirements of the Securities Act and the Exchange Act and the respective rules thereunder; on each Effective Date, at the Execution Time, and on the Closing Date, the Registration Statement did not and will not contain any untrue statement of a material fact or omit to state any material fact required to be stated therein or necessary in order to make the statements therein not misleading; and on the date of any filing pursuant to Rule 424(b) and on the Closing Date, the Final Prospectus Supplement (together with any amendment or supplement thereto) will not include any untrue statement of a material fact or omit to state a material fact necessary in order to make the statements therein, in the light of the circumstances under which they were made, not misleading; provided, however, that the Company makes no representations or warranties as to the information contained in or omitted from the Registration Statement or the Final Prospectus Supplement (or any amendment or supplement thereto) in reliance upon and in conformity with information furnished in writing to the Company by or on behalf of any Underwriter through the Representative specifically for use in the Registration Statement or the Final Prospectus Supplement (or any amendment or supplement thereto), it being understood and agreed that the only such information furnished by the Underwriters consists of the information described as such in Section 8(b) hereof.

(c) As of the Execution Time, the Pricing Disclosure Package and each electronic road show does not, and as of the Closing Date will not, contain any untrue statement of a material fact or omit to state any material fact necessary in order to make the statements therein, in the light of the circumstances under which they were made, not misleading. The preceding sentence does not apply to statements in or omissions from the Pricing Disclosure Package based upon and in conformity with written information furnished to the Company by any Underwriter through the Representative specifically for use therein, it being understood and agreed that the only such information furnished by or on behalf of the Underwriters consists of the information described as such in Section 8(b) hereof.

(d) Reserved.

(e) The Company (i) has not alone engaged in any Testing-the-Waters Communication other than Testing-the-Waters Communications with the consent of the Representative with entities that are reasonably believed to be qualified institutional buyers within the meaning of Rule 144A under the Securities Act or institutions that are accredited

investors within the meaning of Rule 501 under the Securities Act and (ii) has not authorized anyone other than the Representative to engage in Testing-the-Waters Communications. The Company has not distributed any Written Testing-the-Waters Communications other than those listed on Schedule III hereto. “Testing-the-Waters Communication” means any oral or written communication with potential investors undertaken in reliance on Section 5(d) or Rule 163B of the Securities Act. “Written Testing-the-Waters Communication” means any Testing-the-Waters Communication that is a written communication within the meaning of Rule 405, including any presentation used in a Testing-the-Waters Communication.

(f) The Company has not used any Issuer Free Writing Prospectus.

(g) Each Issuer Free Writing Prospectus, if any, does not include any information that conflicts with the information contained in the Registration Statement, the Base Prospectus, any Preliminary Prospectus Supplement or the Final Prospectus Supplement. The foregoing sentence does not apply to statements in or omissions from any Issuer Free Writing Prospectus based upon and in conformity with written information furnished to the Company by any Underwriter through the Representative specifically for use therein, it being understood and agreed that the only such information furnished by or on behalf of any Underwriter consists of the information described as such in Section 8(b) hereof.

(h) The interactive data in the extensible Business Reporting Language (“XBRL”) and Inline XBRL included or incorporated by reference in the Registration Statement fairly presents the information called for in all material respects and has been prepared in accordance with the SEC’s rules and guidelines applicable thereto.

(i) Each of the Company and its subsidiaries has been duly incorporated and is validly existing as a corporation in good standing under the laws of the jurisdiction in which it is chartered or organized with full corporate power and authority to own or lease, as the case may be, and to operate its properties and conduct its business as described in the Pricing Disclosure Package and the Final Prospectus Supplement, and is duly qualified to do business as a foreign corporation and is in good standing under the laws of each jurisdiction which requires such qualification, except where the failure to be so qualified or in good standing would not reasonably be expected to have a material adverse effect on the condition (financial or otherwise), prospects, earnings, business or properties of the Company and its subsidiaries, taken as a whole, whether or not arising from transactions in the ordinary course of business (a “Material Adverse Effect”).

(j) All the outstanding shares of capital stock of each subsidiary of the Company have been duly and validly authorized and issued and are fully paid and non-assessable, and all outstanding shares of capital stock of the subsidiaries are owned by the Company either directly or through wholly owned subsidiaries, and except as set forth in the Pricing Disclosure Package and the Final Prospectus Supplement, are free and clear of any perfected security interest or any other security interests, claims, liens or encumbrances.

(k) The Company’s authorized equity capitalization is as set forth in the Pricing Disclosure Package and the Final Prospectus Supplement; the capital stock of the

Company conforms in all material respects to the description thereof contained in the Pricing Disclosure Package and the Final Prospectus Supplement; the outstanding shares of Common Stock have been duly and validly authorized and issued and are fully paid and nonassessable; the Shares have been duly and validly authorized and, when issued and delivered to and paid for by the Underwriters pursuant to this Agreement, will be fully paid and nonassessable; the Shares in book-entry form are in valid and sufficient form; and the holders of outstanding shares of capital stock of the Company are not entitled to preemptive or other rights to subscribe for the Shares, except for any such rights as have been effectively waived; and, except as set forth in the Pricing Disclosure Package and the Final Prospectus Supplement, no options, warrants or other rights to purchase, agreements or other obligations to issue, or rights to convert any obligations into or exchange any securities for, shares of capital stock of or ownership interests in the Company are outstanding. The Company has reserved from its duly authorized capital stock the maximum number of shares of Common Stock issuable pursuant to this Agreement.

(l) There is no franchise, contract or other document of a character required to be described in the Registration Statement or the Final Prospectus Supplement, or to be filed as an exhibit thereto, which is not described or filed as required (and the Preliminary Prospectus Supplement contains in all material respects the same description of the foregoing matters contained in the Final Prospectus Supplement); and the statements in the Preliminary Prospectus Supplement and the Final Prospectus Supplement insofar as such statements summarize legal matters, agreements, documents or proceedings discussed therein, are accurate and fair summaries of such legal matters, agreements, documents or proceedings in all material respects.

(m) This Agreement has been duly authorized, executed and delivered by the Company.

(n) The Company is not and, after giving effect to the offering and sale of the Shares and the application of the proceeds thereof as described in the Pricing Disclosure Package and the Final Prospectus Supplement, will not be an “investment company” as defined in the Investment Company Act of 1940, as amended.

(o) No consent, approval, authorization, filing with or order of any court or governmental agency or body is required in connection with the transactions contemplated herein, except such as have been obtained under the Securities Act and such as may be required under the listing rules of the Nasdaq Stock Market LLC (“Nasdaq”), applicable rules of the Financial Industry Regulatory Authority, Inc. (“FINRA”) and the blue sky laws of any jurisdiction in connection with the purchase and distribution of the Shares by the Underwriters in the manner contemplated herein and in the Pricing Disclosure Package and the Final Prospectus Supplement.

(p) Neither the issue and sale of the Shares nor the consummation of any other of the transactions herein contemplated nor the fulfillment of the terms hereof will conflict with, result in a breach or violation of, or imposition of any lien, charge or encumbrance upon any property or assets of the Company or any of its subsidiaries pursuant to, (i) the charter or bylaws of the Company or any of its subsidiaries, (ii) the terms of any indenture, contract, lease, mortgage, deed of trust, note agreement, loan agreement or other agreement, obligation,

condition, covenant or instrument to which the Company or any of its subsidiaries is a party or bound or to which its or their property is subject, or (iii) any statute, law, rule, regulation, judgment, order or decree applicable to the Company or any of its subsidiaries of any court, regulatory body, administrative agency, governmental body, arbitrator or other authority having jurisdiction over the Company or any of its subsidiaries or any of its or their properties, except in the case of clauses (ii) and (iii) for any such breach, violation or imposition as would not reasonably be expected to have a Material Adverse Effect and which would not reasonably be expected to have a material adverse effect on the performance of this Agreement or the consummation of any of the transactions contemplated hereby.

(q) There are no contracts, agreements or understandings between the Company and any person granting such person the right to require the Company, as applicable, to file a registration statement under the Securities Act with respect to any securities of the Company or to require the Company to include such securities with the Shares registered pursuant to the Registration Statement, except as have been validly waived in connection with the issuance and sale of the Shares contemplated hereby or as have been described in the Preliminary Prospectus Supplement, and the holders of outstanding shares of capital stock of the Company are not entitled to statutory preemptive or other similar contractual rights to subscribe for the Shares.

(r) The consolidated financial statements of the Company and its subsidiaries included or incorporated by reference in the Preliminary Prospectus Supplement, the Final Prospectus Supplement and the Registration Statement, together with the related notes and schedules, present fairly, in all material respects, the consolidated financial position of the Company and the subsidiaries as of the dates indicated and the consolidated statements of operations, cash flows and changes in stockholders' equity of the Company and the subsidiaries for the periods specified and have been prepared in compliance with the published requirements of the Securities Act and Exchange Act, as applicable and as in effect at the time of filing, and in conformity with generally accepted accounting principles in the United States ("GAAP") as in effect at the time of filing applied on a consistent basis (except (i) for such adjustments to accounting standards and practices as are noted therein and (ii) in the case of unaudited interim statements, to the extent they may exclude footnotes or may be condensed or summary statements) during the periods involved; the other financial and statistical data with respect to the Company and the Subsidiaries contained or incorporated by reference in the Preliminary Prospectus Supplement, the Final Prospectus Supplement and the Registration Statement, are accurately and fairly presented in all material respects and prepared on a basis consistent with the financial statements and books and records of the Company; there are no financial statements (historical or pro forma) that are required to be included or incorporated by reference in the Preliminary Prospectus Supplement, the Final Prospectus Supplement and the Registration Statement that are not included or incorporated by reference as required; the Company and the Subsidiaries do not have any material liabilities or obligations, direct or contingent (including any off balance sheet obligations), not described in the Preliminary Prospectus Supplement, the Final Prospectus Supplement or the Registration Statement which are required to be described in the Preliminary Prospectus Supplement, the Final Prospectus Supplement or the Registration Statement; and all disclosures contained or incorporated by reference in Preliminary Prospectus

Supplement, the Final Prospectus Supplement and the Registration Statement, if any, regarding “non-GAAP financial measures” (as such term is defined by the rules and regulations of the Commission) comply in all material respects with Regulation G of the Exchange Act and Item 10 of Regulation S-K under the Securities Act, to the extent applicable.

(s) No action, suit or proceeding by or before any court or governmental agency, authority or body or any arbitrator involving the Company or any of its subsidiaries or its or their property is pending or, to the knowledge of the Company, threatened that (i) could reasonably be expected to have a material adverse effect on the performance of this Agreement or the consummation of any of the transactions contemplated hereby or (ii) could reasonably be expected to have a Material Adverse Effect.

(t) Each of the Company and each of its subsidiaries owns or leases all such properties as are necessary to the conduct of its operations as presently conducted.

(u) Neither the Company nor any subsidiary is in violation or default of (i) any provision of its charter or bylaws, (ii) the terms of any indenture, contract, lease, mortgage, deed of trust, note agreement, loan agreement or other agreement, obligation, condition, covenant or instrument to which it is a party or bound or to which its property is subject, or (iii) any statute, law, rule, regulation, judgment, order or decree of any court, regulatory body, administrative agency, governmental body, arbitrator or other authority having jurisdiction over the Company or such subsidiary or any of its properties, as applicable, except in the case of clauses (ii) and (iii) for any such violation or default as would not reasonably be expected to have a Material Adverse Effect.

(v) Moss Adams LLP, which has certified certain financial statements of the Company and its consolidated subsidiaries and delivered its report with respect to the audited consolidated financial statements and schedules included in the Pricing Disclosure Package and the Final Prospectus Supplement, is an independent public accountant with respect to the Company within the meaning of the Securities Act and the applicable published rules and regulations thereunder.

(w) To the Company’s knowledge, there are no transfer taxes or other similar fees or charges under Federal law or the laws of any state, or any political subdivision thereof, required to be paid in connection with the execution and delivery of this Agreement or the issuance by the Company or sale by the Company to the Underwriters of the Shares.

(x) The Company has filed all tax returns that are required to be filed or has requested extensions thereof (except in any case in which the failure so to file would not have a Material Adverse Effect) and has paid all taxes required to be paid by it and any other assessment, fine or penalty levied against it, to the extent that any of the foregoing is due and payable, except for any such assessment, fine or penalty that is currently being contested in good faith or as would not have a Material Adverse Effect.

(y) No labor problem or dispute with the employees of the Company or any of its subsidiaries exists or, to the knowledge of the Company, is threatened or imminent, and the

Company is not aware of any existing or imminent labor disturbance by the employees of any of its or its subsidiaries' principal suppliers, contractors or customers, that could reasonably be expected to have a Material Adverse Effect.

(z) The Company and each of its subsidiaries are insured by insurers of recognized financial responsibility against such losses and risks and in such amounts as the Company reasonably believes are prudent and customary in the businesses in which they are engaged; all policies of insurance and fidelity or surety bonds insuring the Company or any of its subsidiaries or their respective businesses, assets, employees, officers and directors are in full force and effect; the Company and its subsidiaries are in compliance with the terms of such policies and instruments in all material respects; and there are no material claims by the Company or any of its subsidiaries under any such policy or instrument as to which any insurance company is denying liability or defending under a reservation of rights clause; and neither the Company nor any such subsidiary has any reason to believe that it will not be able to renew its existing insurance coverage as and when such coverage expires or to obtain similar coverage from similar insurers as may be necessary to continue its business at a cost that would not reasonably be expected to have a Material Adverse Effect.

(aa) No subsidiary of the Company is currently prohibited, directly or indirectly, from paying any dividends to the Company, from making any other distribution on such subsidiary's capital stock, from repaying to the Company any loans or advances to such subsidiary from the Company, except as set forth in the Pricing Disclosure Package and the Final Prospectus Supplement.

(bb) The Company and its subsidiaries possess all licenses, certificates, permits and other authorizations (collectively, "Permits") required to conduct their respective businesses, except for any such failure to possess as would not reasonably be expected to have a Material Adverse Effect, and neither the Company nor any such subsidiary is in violation of, or in default under, any such Permit; neither the Company nor its subsidiaries has received any notice of proceedings relating to the revocation or modification of any such Permit nor has any reason to believe that any such Permit will not be renewed in the ordinary course.

(cc) The Company and each of its subsidiaries, considered together as one entity, maintain a system of internal accounting controls (as contemplated under Rule 13a-15(f) of the Exchange Act) designed to provide reasonable assurance that (i) transactions are executed in accordance with management's general or specific authorizations; (ii) transactions are recorded as necessary to permit preparation of financial statements in conformity with generally accepted accounting principles in the United States and to maintain asset accountability; (iii) access to assets is permitted only in accordance with management's general or specific authorization; (iv) the recorded accountability for assets is compared with the existing assets at reasonable intervals and appropriate action is taken with respect to any differences; and (v) the interactive data in XBRL included or incorporated by reference in the Registration Statement, the Preliminary Prospectus Supplement and the Final Prospectus Supplement is in compliance with the SEC's published rules, regulations and guidelines applicable thereto. The Company's and its subsidiaries' internal controls over financial reporting are effective and, except as set forth in the

Pricing Disclosure Package and the Final Prospectus Supplement, the Company and its subsidiaries are not aware of any material weakness in their internal controls over financial reporting.

(dd) The Company and its subsidiaries maintain “disclosure controls and procedures” (as such term is defined in Rule 13a-15(e) under the Exchange Act); such disclosure controls and procedures are effective.

(ee) The Company has not taken, directly or indirectly (without giving effect to the activities of the Underwriters), any action designed to or that would constitute or that might reasonably be expected to cause or result in, under the Exchange Act or otherwise, stabilization or manipulation of the price of any security of the Company to facilitate the sale or resale of the Shares.

(ff) The Company and its subsidiaries (i) are in compliance with any and all applicable foreign, federal, state and local laws and regulations relating to the protection of human health and safety, the environment or hazardous or toxic substances or wastes, pollutants or contaminants (“Environmental Laws”), (ii) have received and are in compliance with all permits, licenses or other approvals required of them under applicable Environmental Laws to conduct their respective businesses and (iii) have not received notice of any actual or potential liability under any environmental law, except where such non-compliance with Environmental Laws, failure to receive or comply with required permits, licenses or other approvals, or liability would not, individually or in the aggregate, reasonably be expected to have a Material Adverse Effect. Neither the Company nor any of its subsidiaries has been named as a “potentially responsible party” under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended.

(gg) The Company periodically reviews the effect of Environmental Laws on the business, operations and properties of the Company and its subsidiaries, in the course of which it identifies and evaluates associated costs and liabilities (including, without limitation, if applicable, any capital or operating expenditures required for clean-up, closure of properties or compliance with Environmental Laws, or any permit, license or approval, any related constraints on operating activities and any potential liabilities to third parties). On the basis of such review, the Company has reasonably concluded that such associated costs and liabilities would not reasonably be expected to, individually or in the aggregate, have a Material Adverse Effect.

(hh) Nothing has come to the attention of the Company that has caused the Company to believe that the material statistical and market-related data included in the Registration Statement, the Pricing Disclosure Package and the Final Prospectus Supplement is not based on or derived from sources that are reliable and accurate in all material respects, and, to the extent required by such sources, the Company has obtained the written consent to the use of such data from such sources.

(ii) None of the following events has occurred or exists: (i) a failure to fulfill the obligations, if any, under the minimum funding standards of Section 302 of the United States Employee Retirement Income Security Act of 1974, as amended (“ERISA”), and the regulations

and published interpretations thereunder with respect to a Plan, determined without regard to any waiver of such obligations or extension of any amortization period; (ii) an audit or investigation by the Internal Revenue Service, the U.S. Department of Labor, the Pension Benefit Guaranty Corporation or any other federal or state governmental agency or any foreign regulatory agency with respect to the employment or compensation of employees by any of the Company or any of its subsidiaries that would reasonably be expected to have a Material Adverse Effect; (iii) any breach of any contractual obligation, or any violation of law or applicable qualification standards, with respect to the employment or compensation of employees by the Company or any of its subsidiaries that would reasonably be expected to have a Material Adverse Effect. None of the following events has occurred or is reasonably likely to occur: (i) a material increase in the aggregate amount of contributions required to be made to all Plans in the current fiscal year of the Company and its subsidiaries compared to the amount of such contributions made in the most recently completed fiscal year of the Company and its subsidiaries; (ii) a material increase in the “accumulated post-retirement benefit obligations” (within the meaning of Statement of Financial Accounting Standards 106) of the Company and its subsidiaries compared to the amount of such obligations in the most recently completed fiscal year of the Company and its subsidiaries; (iii) any event or condition giving rise to a liability under Title IV of ERISA that would reasonably be expected to have a Material Adverse Effect; or (iv) the filing of a claim by one or more employees or former employees of the Company or any of its subsidiaries related to their employment that would reasonably be expected to have a Material Adverse Effect. For purposes of this paragraph, the term “Plan” means a plan (within the meaning of Section 3(3) of ERISA) subject to Title IV of ERISA with respect to which the Company or any of its subsidiaries may have any liability.

(jj) There is and has been no failure on the part of the Company and any of the Company’s directors or officers, in their capacities as such, to comply with any provision of the Sarbanes-Oxley Act of 2002, as amended, and the rules and regulations promulgated in connection therewith (the “Sarbanes-Oxley Act”), that are in effect and with which the Company is required to comply as of the Effective Date, including Section 402 relating to loans and Sections 302 and 906 relating to certifications.

(kk) Neither the Company nor any of its subsidiaries, nor any director, officer, or, to the knowledge of the Company, any employee or agent of the Company or any of its subsidiaries has taken any action, directly or indirectly, (i) in furtherance of a corrupt offer, payment, promise to pay, or authorization or approval of the payment, giving or receipt of money, property, gifts or anything else of value, to any government official (including any officer or employee of a government or government-owned or controlled entity or of a public international organization, or any person acting in an official capacity for or on behalf of any of the foregoing or any political party or party official or candidate for political office) in order to influence official action or secure an unlawful business advantage, or (ii) in violation of the U.S. Foreign Corrupt Practices Act of 1977 or the U.K. Bribery Act 2010, each as amended, or similar applicable law of any other relevant jurisdiction, or the rules or regulations thereunder (collectively, the “Anti-Corruption Laws”). The Company and its subsidiaries have instituted and maintained policies and procedures reasonably designed to promote and achieve compliance with Anti-Corruption Laws. No part of the proceeds of the offering will be used by the

Company, its subsidiaries, or its affiliates, directly or, to the knowledge of the Company, indirectly, in violation of the Anti-Corruption Laws.

(ll) The operations of the Company and its subsidiaries are and have been conducted at all times in compliance with applicable financial recordkeeping and reporting requirements, including, to the extent applicable, those of the Bank Secrecy Act, as amended by Title III of the Uniting and Strengthening America by Providing Appropriate Tools Required to Intercept and Obstruct Terrorism Act of 2001 (USA PATRIOT Act), and the anti-money laundering statutes and the rules and regulations thereunder and any related or similar rules, regulations or guidelines, issued, administered or enforced by any governmental agency (collectively, the “Anti-Money Laundering Laws”) and no action, suit or proceeding by or before any court or governmental agency, authority or body or any arbitrator involving the Company or any of its subsidiaries with respect to the Anti-Money Laundering Laws is pending or, to the knowledge of the Company, threatened.

(mm) Neither the Company nor any of its subsidiaries nor, any director, officer, or, to the knowledge of the Company, any employee or agent of the Company or any of its subsidiaries (i) is, or is controlled or 50% or more owned in the aggregate by or is acting on behalf of, one or more individuals or entities that are currently the subject of any sanctions administered or enforced by the United States (including any administered or enforced by the Office of Foreign Assets Control of the U.S. Department of the Treasury, the U.S. Department of State or the Bureau of Industry and Security of the U.S. Department of Commerce), the United Nations Security Council, the European Union, a member state of the European Union (including sanctions administered or enforced by His Majesty’s Treasury of the United Kingdom) or other applicable sanctions authority where the Company or its subsidiaries operate (collectively, “Sanctions” and such persons, “Sanctioned Persons” and each such person, a “Sanctioned Person”), (ii) is located, organized or ordinarily resident in a country or territory that is, or whose government is, the subject of Sanctions that broadly prohibit dealings with that country or territory (collectively, “Sanctioned Countries” and each, a “Sanctioned Country” and currently, Cuba, Iran, North Korea, Syria, Belarus, the so-called Donetsk People’s Republic, the so-called Luhansk People’s Republic, the Crimea region of Ukraine and other Covered Region (as defined in the Executive Order 14065) of Ukraine identified pursuant to the Executive Order 14065 or (iii) will, directly or knowingly indirectly, use the proceeds of this offering, or lend, contribute or otherwise make available such proceeds to any subsidiary, joint venture partner or other individual or entity to fund or facilitate any activities or business of or with a Sanctioned Person or Sanctioned Country, or in any other manner that would result in a violation of any Sanctions by, or could result in the imposition of Sanctions against, any individual or entity (including any individual or entity participating in the offering, whether as underwriter, advisor, investor or otherwise).

(nn) Neither the Company nor any of its subsidiaries has knowingly engaged in any dealings or transactions with or for the benefit of a Sanctioned Person, or with or in a Sanctioned Country, in the preceding five (5) years, nor does the Company or any of its subsidiaries have any plans to engage in dealings or transactions with or for the benefit of a Sanctioned Person, or with or in a Sanctioned Country.

(oo) The Company and its subsidiaries own, possess, license or have other rights to use, on reasonable terms, all patents, patent applications, trade and service marks, trade and service mark registrations, trade names, copyrights, licenses, inventions, trade secrets, technology, know-how and other intellectual property (collectively, the “Intellectual Property”) necessary for the conduct of the Company’s business as now conducted or as proposed to be conducted in the Pricing Disclosure Package and the Final Prospectus Supplement, and, to the knowledge of the Company, the conduct of the respective businesses of the Company does not and will not infringe, misappropriate, or otherwise conflict in any material respect with any intellectual property of another. The Company and its subsidiaries have not received any notice of any claim of infringement, misappropriation or conflict with any intellectual property right of another in connection with its patents, patent applications, patent rights, licenses, inventions, trademarks, service marks, trade names, copyrights and know-how, which could reasonably be expected to result in a Material Adverse Effect, and the Company is unaware of any facts which would form a reasonable basis for any such claim. Except as set forth in the Pricing Disclosure Package and the Final Prospectus Supplement, there are no rights of third parties to any Intellectual Property owned by the Company and its subsidiaries (the “Company Intellectual Property”), including no liens, security interests, or other encumbrances. To the Company’s knowledge, (a) there is no material infringement by third parties of any Company Intellectual Property; (b) there is no pending or, to the Company’s knowledge, threatened action, suit, proceeding or claim by others challenging the Company’s rights in or to any such Company Intellectual Property, and the Company is unaware of any facts which would form a reasonable basis for any such action, suit, proceeding, or claim; (c) such Company Intellectual Property has not been adjudged by a court of competent jurisdiction invalid or unenforceable, in whole or in part, there is no pending or, to the Company’s knowledge, threatened action, suit, proceeding or claim by others challenging the validity or scope of any such Company Intellectual Property, including interferences, oppositions, reexaminations, or government proceedings, and the Company is unaware of any facts which would form a reasonable basis for any such action, suit, proceeding, or claim; (d) there is no pending or, to the Company’s knowledge, threatened action, suit, proceeding or claim by others that the Company infringes, misappropriates, or otherwise violates, or would, upon the commercialization of any product or service described in the Pricing Disclosure Package and the Final Prospectus Supplement as under development, infringe, misappropriate, or otherwise violate, any patent, trademark, copyright, trade secret or other proprietary rights of others in any material respect, and the Company is unaware of any other fact which would form a reasonable basis for any such action, suit, proceeding, or claim; (e) to the Company’s knowledge, the Company and its subsidiaries have taken all reasonable steps to protect, maintain and safeguard their Intellectual Property, including the execution of commercially reasonable nondisclosure, confidentiality agreements and invention assignment agreements and invention assignments with their employees, and no employee of the Company is in or has been in violation of any term of any employment contract, patent disclosure agreement, invention assignment agreement, non-competition agreement, non-solicitation agreement, nondisclosure agreement or any restrictive covenant to or with a former employer where the basis of such violation relates to such employee’s employment with the Company; (f) to the Company’s knowledge, there are no material defects in any of the patents or patent applications included in the Intellectual Property; (g) to the Company’s knowledge, there is no patent or published patent application in the U.S. or other jurisdiction which contains claims that dominate

or may dominate any Intellectual Property described in the Pricing Disclosure Package and the Final Prospectus Supplement as being owned by or licensed to the Company or that interferes with the issued or pending claims of any such Intellectual Property; (h) there is no prior art of which the Company is aware that may render any patent held by the Company invalid or any patent application held by the Company unpatentable; and (i) all prior art of which the Company is aware that may be material to the validity of a U.S. patent or to the patentability of a U.S. patent application has been disclosed to the U.S. Patent and Trademark Office, and all such prior art has been disclosed to the patent office of other jurisdictions where required. All licenses to which the Company is a party relating to the Intellectual Property are in full force and effect and the Company is not in violation of any term of such license. The product candidates described in the Pricing Disclosure Package and the Final Prospectus Supplement as under development by the Company or its subsidiaries fall within the scope of the claims of one or more patents or patent applications owned by, or exclusively licensed to, the Company or its subsidiaries.

(pp) The Company (i) does not have any material lending or other relationship with any bank or lending affiliate of the Underwriters and (ii) does not intend to use any of the proceeds from the sale of the Shares hereunder to repay any outstanding debt owed to any affiliate of the Underwriters.

(qq) The subsidiaries listed on Annex B attached hereto are the only subsidiaries of the Company.

(rr) To the Company's knowledge, there has been no material security breach, unauthorized access, use, disclosure, modification, destruction or other incident or compromise of or relating to any of the Company's or any of its subsidiaries' information technology and computer systems, networks, hardware, software, data (including all personal information, personal data, personally identifiable information or similar information and the data of their respective customers, employees, suppliers, vendors and any third party data maintained by or on behalf of them), equipment or technology (collectively, "IT Systems and Data") and the Company and its subsidiaries have no knowledge of any specific event or condition that would reasonably be expected to result in, any such material security breach, unauthorized access, use, disclosure, modification, destruction or other compromise of their IT Systems and Data. The Company and its subsidiaries employ commercially reasonable physical, technical, and administrative security measures, controls, safeguards, policies and procedures designed to (a) protect all IT Systems and Data from and against material unauthorized access, use and/or disclosure and (b) maintain the integrity, continuous operation, redundancy and security of the IT Systems and Data. The Company and its subsidiaries are presently, and for the past four (4) years have been, in compliance with all applicable laws, regulations and statutes, including to the extent applicable, the California Consumer Privacy Act and the European Union General Data Protection Regulation ("GDPR") (EU 2016/679) (and all other applicable laws and regulations governing the data privacy and security of personal information or personal data), and all judgments, orders, rules, directives and decrees of any court or arbitrator or governmental or regulatory authority, company policies and contractual obligations relating to the privacy and security of IT Systems and Data and to the protection of such IT Systems and Data from unauthorized use, access, misappropriation or modification, except as would not, individually or

in the aggregate, have a Material Adverse Effect, and the Company and its subsidiaries have implemented backup and disaster recovery technology consistent with industry standards and practices.

(ss) The application of the proceeds received by the Company from the issuance, sale and delivery of the Shares as described in the Pricing Disclosure Package and the Final Prospectus Supplement will not violate Regulation T, U or X of the Board of Governors of the Federal Reserve system or any other regulation of such Board of Governors.

(tt) Neither the Company nor any of its subsidiaries is a party to any contract, agreement or understanding with any person (other than this Agreement) that would give rise to a valid claim against the Company or any of its subsidiaries or the Underwriters for a brokerage commission, finder's fee or like payment in connection with the offering and sale of the Shares or any transaction contemplated by this Agreement, the Registration Statement, Pricing Disclosure Package or the Final Prospectus Supplement.

(uu) No forward-looking statement (within the meaning of Section 27A of the Securities Act and Section 21E of the Exchange Act) contained in either the Pricing Disclosure Package or the Final Prospectus Supplement has been made or reaffirmed without a reasonable basis or has been disclosed other than in good faith.

(vv) Each of the Company and the subsidiaries, and, to the Company's knowledge, each of their affiliates and any director, officer or employee of, or other person associated with or acting on behalf of, the Company has acted at all times in compliance in all material respects with applicable Export and Import Laws (as defined below) and there are no claims, complaints, charges, investigations or proceedings pending or, to the knowledge of the Company, threatened between the Company or any of the subsidiaries and any governmental authority under any Export or Import Laws. The term "Export and Import Laws" means the Arms Export Control Act, the International Traffic in Arms Regulations, the Export Administration Act of 1979, as amended, the Export Administration Regulations, and all other laws and regulations of the United States government regulating the provision of services to non-U.S. parties or the export and import of articles or information from and to the United States of America, and all similar laws and regulations of any foreign government regulating the provision of services to parties not of the foreign country or the export and import of articles and information from and to the foreign country to parties not of the foreign country.

(ww) To the Company's knowledge, neither the Company nor any of its affiliates (within the meaning of FINRA Rule 5121(f)(1)) directly or indirectly controls (within the meaning of FINRA Rule 5121(f)(6)), is controlled by, or is under common control with, or is an associated person (within the meaning of Article I, Section 1(ee) of the bylaws of FINRA) of, any member firm of FINRA.

(xx) The Company was not and is not an ineligible issuer as defined in Rule 405 under the Securities Act at the times specified in Rules 164 and 433 under the Securities Act in connection with the offering of the Shares.

Any certificate signed by any officer of the Company and delivered to the Representative or counsel for the Underwriters in connection with the offering of the Shares shall be deemed a representation and warranty by the Company, as to matters covered thereby, to each Underwriter.

2. Purchase and Sale. Subject to the terms and conditions and in reliance upon the representations and warranties herein set forth, the Company agrees to sell to each Underwriter, and each Underwriter agrees, severally and not jointly, to purchase from the Company, (a) at a purchase price per share of \$4.935, the number of Firm Shares set forth opposite the name of such Underwriter in Schedule I hereto, and (b) in the event and to the extent that the Underwriters shall exercise the election to purchase Optional Shares as provided below, the Company agrees to issue and sell to each of the Underwriters, and each of the Underwriters agrees, severally and not jointly, to purchase from the Company, at the purchase price per share set forth in clause (a) of this Section 2, that portion of the number of Optional Shares as to which such election shall have been exercised (to be adjusted by you so as to eliminate fractional shares) determined by multiplying such number of Optional Shares by a fraction, the numerator of which is the maximum number of Optional Shares which such Underwriter is entitled to purchase as set forth opposite the name of such Underwriter in Schedule I hereto and the denominator of which is the maximum number of Optional Shares that all of the Underwriters are entitled to purchase hereunder.

The Company hereby grants to the Underwriters the right to purchase at their election up to 715,500 Optional Shares, at the purchase price per share set forth in the paragraph above, for the sole purpose of covering over-allotments made in connection with the offering of the Firm Shares, provided that the purchase price per Optional Share shall be reduced by an amount per share equal to any dividends or distributions declared by the Company and payable on the Firm Shares but not payable on the Optional Shares. Any such election to purchase Optional Shares may be exercised only by written notice from you to the Company, given within a period of 30 calendar days after the date of this Agreement, setting forth the aggregate number of Optional Shares to be purchased and the date on which such Optional Shares are to be delivered, as determined by you but in no event earlier than the First Time of Delivery (as defined in Section 4 hereof) or, unless you and the Company otherwise agree in writing, earlier than two or later than ten business days after the date of such notice.

3. Delivery and Payment. Delivery of and payment for the Firm Shares shall be made at 10:00 AM, New York City time, on September 23, 2024, or at such time on such later date not more than two Business Days after the foregoing date as the Representative shall designate, which date and time may be postponed by agreement between the Representative and the Company or as provided in Section 9 hereof. Delivery of and payment for the Optional Shares shall be made at 10:00 AM, New York City time, on the date specified by the Representative in each written notice given by the Representative of the Underwriters' election to purchase such Optional Shares, or such other time and date as the Representative and the Company may agree upon in writing. Such time and date for delivery of the Firm Shares is herein called the "First Time of Delivery", such time and date for delivery of the Optional Shares, if not the First Time of Delivery, is herein called the "Second Time of Delivery", and each such time and date for delivery is herein called a "Time of Delivery". Delivery of the

Shares shall be made to the Representative for the respective accounts of the several Underwriters against payment by the several Underwriters through the Representative of the purchase price thereof to or upon the order of the Company by wire transfer payable in same-day funds to an account specified by the Company. Delivery of the Shares shall be made through the facilities of The Depository Trust Company unless the Representative shall otherwise instruct.

4. Offering by Underwriters. It is understood that the several Underwriters propose to offer the Shares for sale to the public as set forth in the Final Prospectus Supplement.

5. Agreements. The Company agrees with the several Underwriters that:

(a) Prior to the termination of the offering of the Shares, the Company will not file any amendment of the Registration Statement or supplement (including any Preliminary Prospectus Supplement or the Final Prospectus Supplement) to the Base Prospectus or any Rule 462(b) Registration Statement unless the Company has furnished you a copy for your review prior to filing and will not file any such proposed amendment or supplement to which you reasonably object. The Company will cause the Final Prospectus Supplement, properly completed, and any supplement thereto to be filed in a form approved by the Representative with the SEC pursuant to the applicable paragraph of Rule 424(b) within the time period prescribed and will provide evidence satisfactory to the Representative of such timely filing. The Company will promptly advise the Representative (i) when the Final Prospectus Supplement, and any supplement thereto, shall have been filed (if required) with the SEC pursuant to Rule 424(b) or when any Rule 462(b) Registration Statement shall have been filed with the SEC, (ii) when, prior to termination of the offering of the Shares, any amendment to the Registration Statement shall have been filed or become effective, (iii) of any request by the SEC or its staff for any amendment of the Registration Statement, or any Rule 462(b) Registration Statement, or for any supplement to the Final Prospectus Supplement or for any additional information, (iv) of the issuance by the SEC of any stop order suspending the effectiveness of the Registration Statement or of any notice objecting to its use or the institution or threatening of any proceeding for that purpose and (v) of the receipt by the Company of any notification with respect to the suspension of the qualification of the Shares for sale in any jurisdiction or the institution or threatening of any proceeding for such purpose. The Company will use its best efforts to prevent the issuance of any such stop order or the occurrence of any such suspension or objection to the use of the Registration Statement and, upon such issuance, occurrence or notice of objection, to obtain as soon as possible the withdrawal of such stop order or relief from such occurrence or objection, including, if necessary, by filing an amendment to the Registration Statement or a new registration statement and using its best efforts to have such amendment or new registration statement declared effective as soon as practicable.

(b) If, at any time prior to the filing of the Final Prospectus Supplement pursuant to Rule 424(b), any event occurs as a result of which the Pricing Disclosure Package would include any untrue statement of a material fact or omit to state any material fact necessary in order to make the statements therein in the light of the circumstances under which they were made or the circumstances then prevailing not misleading, the Company will (i) notify promptly the Representative so that any use of the Pricing Disclosure Package may cease until it is

amended or supplemented; (ii) amend or supplement the Pricing Disclosure Package to correct such statement or omission; and (iii) supply any amendment or supplement to you in such quantities as you may reasonably request.

(c) If, at any time when a prospectus relating to the Shares is required to be delivered under the Securities Act (including in circumstances where such requirement may be satisfied pursuant to Rule 172), any event occurs as a result of which the Final Prospectus Supplement as then supplemented would include any untrue statement of a material fact or omit to state any material fact necessary in order to make the statements therein in the light of the circumstances under which they were made or the circumstances then prevailing not misleading, or if it shall be necessary to amend the Registration Statement, file a new registration statement or supplement the Final Prospectus Supplement to comply with the Securities Act or the Exchange Act or the respective rules thereunder, including in connection with use or delivery of the Final Prospectus Supplement, the Company promptly will (i) notify the Representative of any such event, (ii) prepare and file with the SEC, subject to the second sentence of paragraph (a) of this Section 5, an amendment or supplement or new registration statement which will correct such statement or omission or effect such compliance, (iii) use its best efforts to have any amendment to the Registration Statement or new registration statement declared effective as soon as practicable in order to avoid any disruption in use of the Final Prospectus Supplement and (iv) supply any supplemented Final Prospectus Supplement to you in such quantities as you may reasonably request.

(d) As soon as practicable, the Company will make generally available to its security holders and to the Representative an earnings statement or statements of the Company and its subsidiaries which will satisfy the provisions of Section 11(a) of the Securities Act and Rule 158 under the Securities Act.

(e) The Company will furnish to the Representative and counsel for the Underwriters, without charge, signed copies of the Registration Statement (including exhibits thereto) and to each other Underwriter a copy of the Registration Statement (without exhibits thereto) and, so long as delivery of a prospectus by an Underwriter or dealer may be required by the Securities Act (including in circumstances where such requirement may be satisfied pursuant to Rule 172), as many copies of each Preliminary Prospectus Supplement, the Final Prospectus Supplement and each Issuer Free Writing Prospectus and any supplement thereto as the Representative may reasonably request. The Company will pay the expenses of printing or other production of all documents relating to the offering.

(f) The Company will arrange, if necessary, for the qualification of the Shares for sale under the laws of such jurisdictions as the Representative may reasonably designate and will maintain such qualifications in effect so long as required for the distribution of the Shares; provided that in no event shall the Company be obligated to qualify to do business in any jurisdiction where it is not now so qualified or to take any action that would subject it to service of process in suits, other than those arising out of the offering or sale of the Shares, in any jurisdiction where it is not now so subject.

(g) The Company will not, without the prior written consent of the Representative, offer, sell, contract to sell, pledge, hedge, or otherwise dispose of (or enter into any transaction which is designed to, or might reasonably be expected to, result in the disposition (whether by actual disposition or effective economic disposition due to cash settlement or otherwise) by the Company or any affiliate of the Company or any person in privity with the Company or any affiliate of the Company), directly or indirectly, including the filing or submission (or participation in the filing or submission) of a registration statement with the SEC in respect of, or establish or increase a put equivalent position or liquidate or decrease a call equivalent position within the meaning of Section 16 of the Exchange Act, any other shares of Common Stock or any securities convertible into, or exercisable, or exchangeable for, shares of Common Stock; or publicly announce an intention to effect any such transaction, for a period of 90 days after the date of this Agreement (the “Restricted Period”), provided, however, that the Company may (i) effect the transactions contemplated hereby, (ii) issue and sell Common Stock pursuant to any employee stock option plan, stock incentive plan, stock ownership plan or dividend reinvestment plan of the Company in effect at the Execution Time and as described in the Registration Statement, the Pricing Disclosure Package and the Final Prospectus Supplement (including the issuance of Common Stock issuable upon the exercise of options to purchase shares of Common Stock granted thereunder) or make inducement grants to new hires, provided, that each newly appointed director or executive officer that is appointed during the Restricted Period and that is a recipient of such securities shall execute and deliver to the Representative a lock-up agreement substantially in the form of the lock-up letter described in Section 6(k) hereof covering the remainder of the Restricted Period, (iii) issue Common Stock issuable upon the conversion of securities or the exercise of warrants outstanding at the Execution Time, (iv) issue securities pursuant to acquisitions or strategic transactions approved by a majority of the disinterested directors of the Company, provided that such securities are issued as “restricted securities” (as defined in Rule 144) and carry no registration rights that require or permit the filing of any registration statement in connection therewith within ninety (90) days following the date of this Agreement and provided further that, that the amount of such securities does not exceed 5% of the current number of outstanding Common Stock, or (v) issue securities in connection with the entry into any bona fide debt financing or refinancing transaction, provided, the amount of such securities does not exceed 2% of the current number of outstanding Common Stock, and provided further, that such securities are issued as “restricted securities” (as defined in Rule 144) and carry no registration rights that require or permit the filing of any registration statement in connection therewith within ninety (90) days following the date of this Agreement.

(h) During the Restricted Period, the Company will enforce the terms of all existing agreements, plans and arrangements restricting the transfer by any holder of such holder’s shares of Common Stock or securities convertible into or exercisable or exchangeable for Common Stock. The Company will issue stop-transfer instructions to the transfer agent with respect to any transaction that would constitute a breach of, or default under, such provisions. During the Restricted Period, the Company will enforce, and not waive or amend, such stop-transfer instructions and any transfer restriction, including any “market standoff,” “holdback” or similar agreement or provision, applicable to any such securities unless the Company shall have obtained the prior written consent of the Representative; provided that this Section 5(h) shall not prohibit the Company from effecting such a waiver or amendment to permit a transfer of

securities which is permissible under the terms of the existing agreements, plans and arrangements restricting such transfers.

(i) The Company will use its reasonable best efforts to maintain the listing for the Shares issued and sold by the Company on Nasdaq.

(j) The Company will not take, directly or indirectly (without giving effect to activities by the Underwriters), any action designed to or that would constitute or that might reasonably be expected to cause or result in, under the Exchange Act or otherwise, stabilization or manipulation of the price of any security of the Company to facilitate the sale or resale of the Shares.

(k) The Company agrees to pay the costs and expenses relating to the following matters: (i) the preparation, printing or reproduction and filing with the SEC of the Registration Statement (including financial statements and exhibits thereto), each Preliminary Prospectus Supplement, the Final Prospectus Supplement and any Issuer Free Writing Prospectus, and each amendment or supplement to any of them; (ii) the printing (or reproduction) and delivery (including postage, air freight charges and charges for counting and packaging) of such copies of the Registration Statement, each Preliminary Prospectus Supplement, the Final Prospectus Supplement and any Issuer Free Writing Prospectus, and all amendments or supplements to any of them, as may, in each case, be reasonably requested for use in connection with the offering and sale of the Shares; (iii) the preparation, printing, authentication, issuance and delivery of certificates for the Shares, including any stamp or transfer taxes in connection with the original issuance and sale of the Shares to the Underwriters (but not any such stamp or transfer taxes imposed on a subsequent transfer of the Shares, which taxes shall not be subject to indemnification pursuant to this clause); (iv) the printing (or reproduction) and delivery of this Agreement, any blue sky memorandum and all other agreements or documents printed (or reproduced) and delivered in connection with the offering of the Shares; (v) the registration of the Shares under the Exchange Act and the listing of the Shares on Nasdaq; (vi) any registration or qualification of the Shares for offer and sale under the securities or blue sky laws of the several states (including filing fees and the reasonable fees and expenses of counsel for the Underwriters relating to such registration and qualification); (vii) any filings required to be made with FINRA (including filing fees and the reasonable fees and expenses of counsel for the Underwriters relating to such filings); (viii) the reasonable fees and expenses of counsel for the Underwriters relating to the offering contemplated by this Agreement; provided that the fees and expenses of counsel for the Underwriters with respect to clauses (vi), (vii) and (viii) shall not exceed \$200,000 in the aggregate; (ix) the transportation and other expenses incurred by or on behalf of Company representatives in connection with presentations to prospective purchasers of the Shares; (x) the fees and expenses of the Company's accountants and the fees and expenses of counsel (including local and special counsel) for the Company; and (xi) all other costs and expenses incident to the performance by the Company of its obligations hereunder.

(l) The Company agrees that, unless it has or shall have obtained the prior written consent of the Representative, and each Underwriter, severally and not jointly, agrees with the Company that, unless it has or shall have obtained, as the case may be, the prior written

consent of the Company, it has not made and will not make any offer relating to the Shares that would constitute an Issuer Free Writing Prospectus or that would otherwise constitute a “free writing prospectus” (as defined in Rule 405) required to be filed by the Company with the SEC or retained by the Company under Rule 433 under the Securities Act (“Rule 433”); provided that the prior written consent of the parties hereto shall be deemed to have been given in respect of the Free Writing Prospectuses included in Schedule III hereto and any electronic road show. Any such free writing prospectus consented to by the Representative or the Company is hereinafter referred to as a “Permitted Free Writing Prospectus.” The Company agrees that (x) it has treated and will treat, as the case may be, each Permitted Free Writing Prospectus as an Issuer Free Writing Prospectus and (y) it has complied and will comply, as the case may be, with the requirements of Rule 164 under the Securities Act (“Rule 164”) and Rule 433 applicable to any Permitted Free Writing Prospectus, including in respect of timely filing with the SEC, legending and record keeping.

(m) Reserved.

(n) If at any time following the distribution of any Written Testing-the-Waters Communication, any event occurs as a result of which such Written Testing-the-Waters Communication would include any untrue statement of a material fact or omit to state any material fact necessary in order to make the statements therein in the light of the circumstances under which they were made or the circumstances then prevailing not misleading, the Company will (i) notify promptly the Representative so that use of the Written Testing-the-Waters Communication may cease until it is amended or supplemented; (ii) amend or supplement the Written Testing-the-Waters Communication to correct such statement or omission; and (iii) supply any amendment or supplement to the Representative in such quantities as may be reasonably requested.

6. Conditions to the Obligations of the Underwriters. The obligations of the Underwriters to purchase the Shares shall be subject to the accuracy of the representations and warranties on the part of the Company contained herein as of the Execution Time and each Time of Delivery, to the accuracy of the statements of the Company made in any certificates pursuant to the provisions hereof, to the performance by the Company of its obligations hereunder and to the following additional conditions:

(a) The Final Prospectus Supplement, and any supplement thereto, have been filed in the manner and within the time period required by Rule 424(b); any other material required to be filed by the Company pursuant to Rule 433(d) shall have been filed with the SEC within the applicable time periods prescribed for such filings by Rule 433; and no stop order suspending the effectiveness of the Registration Statement or any notice objecting to its use shall have been issued and no proceedings for that purpose shall have been instituted or threatened.

(b) The Company shall have requested and caused Faegre Drinker Biddle & Reath LLP, counsel for the Company, to have furnished to the Representative their opinion and negative assurance letter, dated each Time of Delivery, and addressed to the Representative, in a form acceptable to the Representative.

(c) The Representative shall have received from Mintz, Levin, Cohn, Ferris, Glovsky and Popeo, P.C., counsel for the Underwriters, such opinion and negative assurance letter, dated each Time of Delivery and addressed to the Representative, with respect to the issuance and sale of the Shares, the Registration Statement, the Pricing Disclosure Package, the Final Prospectus Supplement (together with any supplement thereto) and other related matters as the Representative may reasonably require, and the Company shall have furnished to such counsel such documents as they request for the purpose of enabling them to pass upon such matters.

(d) The Company shall have furnished to the Representative a certificate of the Company, signed by the General Counsel of the Company, dated each Time of Delivery, regarding intellectual property statements contained in the Registration Statement, the Pricing Disclosure Package, the Final Prospectus Supplement, in the form acceptable to the Representative.

(e) The Company shall have furnished to the Representative a certificate of the Company, signed by the Chief Executive Officer and the Chief Accounting Officer of the Company, dated each Time of Delivery, to the effect that the signers of such certificate have carefully examined the Registration Statement, the Pricing Disclosure Package, the Final Prospectus Supplement and any amendment or supplement thereto, as well as each electronic road show used in connection with the offering of the Shares, and this Agreement and that:

(i) the representations and warranties of the Company in this Agreement are true and correct on and as of such Time of Delivery with the same effect as if made on such Time of Delivery and the Company has complied with all the agreements and satisfied all the conditions on its part to be performed or satisfied at or prior to such Time of Delivery;

(ii) no stop order suspending the effectiveness of the Registration Statement or any notice objecting to its use has been issued and no proceedings for that purpose have been instituted or, to the Company's knowledge, threatened; and

(iii) since the date of the most recent financial statements included in the Pricing Disclosure Package and the Final Prospectus Supplement (exclusive of any amendment or supplement thereto), there has been no Material Adverse Effect.

(f) The Company shall have requested and caused Moss Adams LLP to have furnished to the Representative, at the Execution Time and at each Time of Delivery, letters, dated respectively as of the Execution Time and as of each Time of Delivery, in form and substance satisfactory to the Representative, containing statements and information of the type ordinarily included in accountants "comfort letters" to underwriters.

(g) Subsequent to the Execution Time or, if earlier, the dates as of which information is given in the Registration Statement (exclusive of any amendment thereof) and the Final Prospectus Supplement (exclusive of any amendment or supplement thereto), there shall not have been (i) any change or decrease specified in the letter or letters referred to in paragraph

(e) of this Section 6 or (ii) any change, or any development involving a prospective change, in or affecting the condition (financial or otherwise), earnings, business or properties of the Company and its subsidiaries taken as a whole, whether or not arising from transactions in the ordinary course of business, the effect of which, in any case referred to in clause (i) or (ii) above, is, in the sole judgment of the Representative, so material and adverse as to make it impractical or inadvisable to proceed with the offering or delivery of the Shares as contemplated by the Registration Statement (exclusive of any amendment thereof), the Pricing Disclosure Package and the Final Prospectus Supplement (exclusive of any amendment or supplement thereto).

(h) Prior to each Time of Delivery, the Company shall have furnished to the Representative a Secretary's Certificate, in form and substance reasonably satisfactory to the Representative and customary for the type of offering contemplated by this Agreement.

(i) Prior to each Time of Delivery, the Company shall have furnished to the Representative such further information, certificates and documents as the Representative may reasonably request.

(j) There are (and prior to each Time of Delivery, will be) no debt securities, convertible securities or preferred stock issued or guaranteed by the Company or any of its subsidiaries that are rated by a "nationally recognized statistical rating organization" (as defined for purposes of Rule 3(a)(62) under the Exchange Act).

(k) The Shares shall have been listed and admitted and authorized for trading on Nasdaq, and satisfactory evidence of such actions shall have been provided to the Representative.

(l) At the Execution Time, the Company shall have furnished to the Representative a letter substantially in the form of Annex A hereto from each executive officer and director of the Company and certain stockholders of the Company identified on Schedule IV hereto addressed to the Representative.

If any of the conditions specified in this Section 6 shall not have been fulfilled when and as provided in this Agreement, or if any of the opinions and certificates mentioned above or elsewhere in this Agreement shall not be reasonably satisfactory in form and substance to the Representative and counsel for the Underwriters, this Agreement and all obligations of the Underwriters hereunder may be canceled at, or at any time prior to, the respective Time of Delivery by the Representative. Notice of such cancellation shall be given to the Company in writing or by telephone confirmed in writing.

7. Reimbursement of Underwriters' Expenses. If the sale of the Shares provided for herein is not consummated because any condition to the obligations of the Underwriters set forth in Section 6 hereof is not satisfied, because of any termination pursuant to Section 10 hereof or because of any refusal, inability or failure on the part of the Company to perform any agreement herein or comply with any provision hereof other than by reason of a default by any of the Underwriters, the Company will reimburse the Underwriters severally through the Representative on demand for all reasonable and documented expenses (including reasonable

fees and disbursements of counsel for the Underwriters) that shall have been incurred by them in connection with the proposed purchase and sale of the Shares.

8. Indemnification and Contribution.

(a) The Company agrees to indemnify and hold harmless each Underwriter, the directors, officers, employees, affiliates and agents of each Underwriter and each person who controls any Underwriter within the meaning of either the Securities Act or the Exchange Act against any and all losses, claims, damages or liabilities, joint or several, to which they or any of them may become subject under the Securities Act, the Exchange Act or other U.S. Federal or state statutory law or regulation, at common law or otherwise, insofar as such losses, claims, damages or liabilities (or actions in respect thereof) arise out of or are based upon any untrue statement or alleged untrue statement of a material fact contained in the registration statement for the registration of the Shares as originally filed or in any amendment thereof, or in any Preliminary Prospectus Supplement, the Pricing Disclosure Package or the Final Prospectus Supplement, any Issuer Free Writing Prospectus (including, for the avoidance of doubt, in any road show as defined in Rule 433(h) under the Securities Act), or any Written Testing-the-Waters Communication or in any amendment thereof or supplement thereto, or arise out of or are based upon the omission or alleged omission to state therein a material fact required to be stated therein or necessary to make the statements therein not misleading, and agrees to reimburse each such indemnified party, as incurred, for any documented legal or other expenses reasonably incurred by them in connection with investigating or defending any such loss, claim, damage, liability or action; provided, however, that the Company will not be liable in any such case to the extent that any such loss, claim, damage or liability arises out of or is based upon any such untrue statement or alleged untrue statement or omission or alleged omission made therein in reliance upon and in conformity with written information furnished to the Company by or on behalf of any Underwriter through the Representative specifically for inclusion therein. This indemnity agreement will be in addition to any liability which the Company may otherwise have.

(b) Each Underwriter severally and not jointly agrees to indemnify and hold harmless the Company, each of its directors, each of its officers who signs the Registration Statement, and each person who controls the Company within the meaning of either the Securities Act or the Exchange Act, to the same extent as the foregoing indemnity from the Company to each Underwriter, but only with reference to written information relating to such Underwriter furnished to the Company by or on behalf of such Underwriter through the Representative specifically for inclusion in the documents referred to in the foregoing indemnity. This indemnity agreement will be in addition to any liability which any Underwriter may otherwise have. The Company acknowledges that the statements set forth in the third and tenth full paragraphs in the “Underwriting” section of the Preliminary Prospectus Supplement and the Final Prospectus Supplement constitute the only information furnished in writing by or on behalf of the several Underwriters for inclusion in the Preliminary Prospectus Supplement, the Pricing Disclosure Package, the Final Prospectus Supplement or any Issuer Free Writing Prospectus or any Written Testing-the-Waters Communication.

(c) Promptly after receipt by an indemnified party under this Section 8 of notice of the commencement of any action, such indemnified party will, if a claim in respect thereof is to be made against the indemnifying party under this Section 8, notify the indemnifying party in writing of the commencement thereof; but the failure so to notify the indemnifying party (i) will not relieve it from liability under paragraph (a) or (b) above unless and to the extent it did not otherwise learn of such action and such failure results in the forfeiture by the indemnifying party of substantial rights and defenses and (ii) will not, in any event, relieve the indemnifying party from any obligations to any indemnified party other than the indemnification obligation provided in paragraph (a) or (b) above. The indemnifying party shall be entitled to appoint counsel of the indemnifying party's choice at the indemnifying party's expense (it being understood, however, that the indemnifying party shall not be liable for the expenses of more than one separate counsel in addition to local counsel) to represent the indemnified party in any action for which indemnification is sought (in which case the indemnifying party shall not thereafter be responsible for the fees and expenses of any separate counsel retained by the indemnified party or parties except as set forth below); provided, however, that such counsel shall be satisfactory to the indemnified party. Notwithstanding the indemnifying party's election to appoint counsel to represent the indemnified party in an action, the indemnified party shall have the right to employ separate counsel (including local counsel), and the indemnifying party shall bear the reasonable fees, costs and expenses of such separate counsel if (i) the use of counsel chosen by the indemnifying party to represent the indemnified party would present such counsel with a conflict of interest, (ii) the actual or potential defendants in, or targets of, any such action include both the indemnified party and the indemnifying party and the indemnified party shall have reasonably concluded that there may be legal defenses available to it and/or other indemnified parties which are different from or additional to those available to the indemnifying party, (iii) the indemnifying party shall not have employed counsel satisfactory to the indemnified party to represent the indemnified party within a reasonable time after notice of the institution of such action or (iv) the indemnifying party shall authorize the indemnified party to employ separate counsel at the expense of the indemnifying party. An indemnifying party will not, without the prior written consent of the indemnified parties, settle or compromise or consent to the entry of any judgment with respect to any pending or threatened claim, action, suit or proceeding in respect of which indemnification or contribution may be sought hereunder (whether or not the indemnified parties are actual or potential parties to such claim or action) unless such settlement, compromise or consent (i) includes an unconditional release of each indemnified party from all liability arising out of such claim, action, suit or proceeding and (ii) does not include a statement as to or an admission of fault, culpability or a failure to act, by or on behalf of any indemnified party.

(d) In the event that the indemnity provided in paragraph (a), (b) or (c) of this Section 8 is unavailable to or insufficient to hold harmless an indemnified party for any reason, the Company and the Underwriters severally agree to contribute to the aggregate losses, claims, damages and liabilities (including legal or other expenses reasonably incurred in connection with investigating or defending the same) (collectively, "Losses") to which the Company and one or more of the Underwriters may be subject in such proportion as is appropriate to reflect the relative benefits received by the Company on the one hand and by the Underwriters on the other from the offering of the Shares. If the allocation provided by the immediately preceding

sentence is unavailable for any reason, the Company and the Underwriters severally shall contribute in such proportion as is appropriate to reflect not only such relative benefits but also the relative fault of the Company on the one hand and of the Underwriters on the other in connection with the statements or omissions which resulted in such Losses as well as any other relevant equitable considerations. Benefits received by the Company shall be deemed to be equal to the total net proceeds from the offering (before deducting expenses) received by it, and benefits received by the Underwriters shall be deemed to be equal to the total underwriting discounts and commissions, in each case as set forth on the cover page of the Final Prospectus Supplement. Relative fault shall be determined by reference to, among other things, whether any untrue or any alleged untrue statement of a material fact or the omission or alleged omission to state a material fact relates to information provided by the Company on the one hand or the Underwriters on the other, the intent of the parties and their relative knowledge, access to information and opportunity to correct or prevent such untrue statement or omission. The Company and the Underwriters agree that it would not be just and equitable if contribution were determined by pro rata allocation or any other method of allocation which does not take account of the equitable considerations referred to above. Notwithstanding the provisions of this paragraph (d), in no event shall an Underwriter be required to contribute any amount in excess of the amount by which the total underwriting discounts and commissions received by such Underwriter with respect to the offering of the Shares exceeds the amount of any damages that such Underwriter has otherwise been required to pay by reason of such untrue or alleged untrue statement or omission or alleged omission. Notwithstanding the provisions of this paragraph (d), no person guilty of fraudulent misrepresentation (within the meaning of Section 11(f) of the Securities Act) shall be entitled to contribution from any person who was not guilty of such fraudulent misrepresentation. For purposes of this Section 8, each person who controls an Underwriter within the meaning of either the Securities Act or the Exchange Act and each director, officer, employee, affiliate and agent of an Underwriter shall have the same rights to contribution as such Underwriter, and each person who controls the Company within the meaning of either the Securities Act or the Exchange Act, each officer of the Company who shall have signed the Registration Statement and each director of the Company shall have the same rights to contribution as the Company, subject in each case to the applicable terms and conditions of this paragraph (d).

9. Default by an Underwriter. If any one or more Underwriters shall fail to purchase and pay for any of the Shares agreed to be purchased by such Underwriter or Underwriters hereunder and such failure to purchase shall constitute a default in the performance of its or their obligations under this Agreement, the remaining Underwriters shall be obligated severally to take up and pay for (in the respective proportions which the amount of Shares set forth opposite their names in Schedule I hereto bears to the aggregate amount of Shares set forth opposite the names of all the remaining Underwriters) the Shares which the defaulting Underwriter or Underwriters agreed but failed to purchase; provided, however, that in the event that the aggregate amount of Shares which the defaulting Underwriter or Underwriters agreed but failed to purchase shall exceed 10% of the aggregate amount of Shares set forth in Schedule I hereto, the remaining Underwriters shall have the right to purchase all, but shall not be under any obligation to purchase any, of the Shares, and if such non-defaulting Underwriters do not purchase all the Shares, this Agreement will terminate without liability to any non-defaulting Underwriter or the

Company. In the event of a default by any Underwriter as set forth in this Section 9, the Closing Date shall be postponed for such period, not exceeding five Business Days, as the Representative shall determine in order that the required changes in the Registration Statement and the Final Prospectus Supplement or in any other documents or arrangements may be effected. Nothing contained in this Agreement shall relieve any defaulting Underwriter of its liability, if any, to the Company and any non-defaulting Underwriter for damages occasioned by its default hereunder.

10. Termination. This Agreement shall be subject to termination in the absolute discretion of the Representative, by notice given to the Company prior to delivery of and payment for the Shares, if at any time prior to such delivery and payment (i) trading in the Company's Common Stock shall have been suspended by the SEC or Nasdaq or trading in securities generally on Nasdaq shall have been suspended or limited or minimum prices shall have been established on such exchange, (ii) a banking moratorium shall have been declared either by Federal or New York State authorities, (iii) there shall have occurred a material disruption in commercial banking or securities settlement or clearance services or (iv) there shall have occurred any outbreak or escalation of hostilities, declaration by the United States of a national emergency or war, or other calamity or crisis or escalation thereof the effect of which on financial markets is such as to make it, in the sole judgment of the Representative, impractical or inadvisable to proceed with the offering or delivery of the Shares as contemplated by the Preliminary Prospectus Supplement or the Final Prospectus Supplement (exclusive of any amendment or supplement thereto).

11. Representations and Indemnities to Survive. The respective agreements, representations, warranties, indemnities and other statements of the Company or its officers and of the Underwriters set forth in or made pursuant to this Agreement will remain in full force and effect, regardless of any investigation made by or on behalf of any Underwriter or the Company or any of the officers, directors, employees, agents, affiliates or controlling persons referred to in Section 8 hereof, and will survive delivery of and payment for the Shares. The provisions of Sections 7 and 8 hereof shall survive the termination or cancellation of this Agreement.

12. Notices. All communications hereunder will be in writing and effective only on receipt, and, if sent to the Representative, will be mailed, delivered or telefaxed Canaccord Genuity LLC, As Representative of the Several Underwriters, 1 Post Office Square, 30th Floor, Boston, MA 02109, Attention: Equity Capital Markets; or, if sent to the Company, will be mailed, delivered or telefaxed to 8051 E. Maplewood Ave., Suite 210, Greenwood Village, CO 80111, Attention: General Counsel.

13. Successors. This Agreement will inure to the benefit of and be binding upon the parties hereto and their respective successors and the officers, directors, employees, agents and controlling persons referred to in Section 8 hereof, and no other person will have any right or obligation hereunder.

14. No Fiduciary Duty. The Company hereby acknowledges that (a) the purchase and sale of the Shares pursuant to this Agreement is an arm's-length commercial transaction between the Company, on the one hand, and the Underwriters and any affiliate through which it may be acting, on the other, (b) the Underwriters are acting as principal and not as an agent or fiduciary

of the Company and (c) the Company's engagement of the Underwriters in connection with the offering and the process leading up to the offering is as independent contractors and not in any other capacity. Furthermore, the Company agrees that it is solely responsible for making its own judgments in connection with the offering (irrespective of whether any of the Underwriters has advised or is currently advising the Company on related or other matters). The Company agrees that it will not claim that the Underwriters have rendered advisory services of any nature or respect, or owe an agency, fiduciary or similar duty to the Company, in connection with such transaction or the process leading thereto.

15. Recognition of the U.S. Special Resolution Regimes.

(a) In the event that any Underwriter that is a Covered Entity becomes subject to a proceeding under a U.S. Special Resolution Regime, the transfer from such Underwriter of this Agreement, and any interest and obligation in or under this Agreement, will be effective to the same extent as the transfer would be effective under the U.S. Special Resolution Regime if this Agreement, and any such interest and obligation, were governed by the laws of the United States or a state of the United States.

(b) In the event that any Underwriter that is a Covered Entity or a BHC Act Affiliate of such Underwriter becomes subject to a proceeding under a U.S. Special Resolution Regime, Default Rights under this Agreement that may be exercised against such Underwriter are permitted to be exercised to no greater extent than such Default Rights could be exercised under the U.S. Special Resolution Regime if this Agreement were governed by the laws of the United States or a state of the United States.

As used in this Section 15, "BHC Act Affiliate" has the meaning assigned to the term "affiliate" in, and shall be interpreted in accordance with, 12 U.S.C. § 1841(k); "Covered Entity" means any of the following: (i) a "covered entity" as that term is defined in, and interpreted in accordance with, 12 C.F.R. § 252.82(b), (ii) a "covered bank" as that term is defined in, and interpreted in accordance with, 12 C.F.R. § 47.3(b) or (iii) a "covered FSI" as that term is defined in, and interpreted in accordance with, 12 C.F.R. § 382.2(b); "Default Right" has the meaning assigned to that term in, and shall be interpreted in accordance with, 12 C.F.R. §§ 252.81, 47.2 or 382.1, as applicable; and "U.S. Special Resolution Regime" means each of (i) the Federal Deposit Insurance Act and the regulations promulgated thereunder and (ii) Title II of the Dodd-Frank Wall Street Reform and Consumer Protection Act and the regulations promulgated thereunder.

16. Integration. This Agreement supersedes all prior agreements and understandings (whether written or oral) between the Company and the Underwriters, or any of them, with respect to the subject matter hereof.

17. Applicable Law. This Agreement will be governed by and construed in accordance with the laws of the State of New York applicable to contracts made and to be performed within the State of New York.

18. Jurisdiction. The Company agrees that any suit, action or proceeding against the Company brought by any Underwriter, the directors, officers, employees, affiliates and agents of any Underwriter, or by any person who controls any Underwriter, arising out of or based upon this Agreement or the transactions contemplated hereby may be instituted in any State or U.S. federal court in The City of New York and County of New York, and waives any objection which it may now or hereafter have to the laying of venue of any such proceeding, and irrevocably submits to the non-exclusive jurisdiction of such courts in any suit, action or proceeding.

19. Waiver of Jury Trial. The Company and the Underwriters hereby irrevocably waive, to the fullest extent permitted by applicable law, any and all right to trial by jury in any legal proceeding arising out of or relating to this Agreement or the transactions contemplated hereby.

20. Counterparts. This Agreement may be signed in one or more counterparts, each of which shall constitute an original and all of which together shall constitute one and the same agreement. The words “execution,” “signed,” “signature,” “delivery,” and words of like import in or relating to this Agreement or any document to be signed in connection with this Agreement shall be deemed to include electronic signatures, deliveries or the keeping of records in electronic form. Counterparts may be delivered via facsimile, electronic mail (including any electronic signature covered by the U.S. federal ESIGN Act of 2000, Uniform Electronic Transactions Act, the Electronic Signatures and Records Act or other applicable law, e.g., www.docusign.com) or other transmission method and any counterpart so delivered shall be of the same legal effect, validity or enforceability as a manually executed signature, physical delivery thereof or the use of a paper-based recordkeeping system, as the case may be, and the parties hereto consent to conduct the transactions contemplated hereunder by electronic means.

21. Headings. The section headings used herein are for convenience only and shall not affect the construction hereof.

22. Definitions. The terms that follow, when used in this Agreement, shall have the meanings indicated.

“Business Day” shall mean any day other than a Saturday, a Sunday or a legal holiday or a day on which banking institutions or trust companies are authorized or obligated by law to close in New York City.

“Rule 158”, “Rule 163”, “Rule 164”, “Rule 172”, “Rule 405”, “Rule 415”, “Rule 424”, “Rule 430A” and “Rule 433” refer to such rules under the Securities Act.

[Signature page follows]

If the foregoing is in accordance with your understanding of our agreement, please sign and return to us the enclosed duplicate hereof, whereupon this Agreement and your acceptance shall represent a binding agreement among the Company and the several Underwriters.

Very truly yours,

ARQ, INC.

By: /s/ Robert Rasmus

Name: Robert Rasmus

Title: Chief Executive Officer

[Signature Page to Underwriting Agreement]

The foregoing Agreement is hereby confirmed and accepted as of the date first above written.

CANACCORD GENUITY LLC

By: /s/ Jennifer Pardi
Name: Jennifer Pardi
Title: Managing Director

For itself and the other several Underwriters named in Schedule I to the foregoing Agreement.

[Signature Page to Underwriting Agreement]

SCHEDULE I

<u>Underwriters</u>	<u>Number of Shares to be Purchased</u>	<u>Number of Optional Shares to be Purchased</u>
Canaccord Genuity LLC	2,623,500	393,525
Roth Capital Partners, LLC	2,146,500	321,975
Total	4,770,000	715,500

SCHEDULE II

Pricing Information

Firm Shares to be sold:	4,770,000 shares of Common Stock
Optional Shares to be sold:	715,500 shares of Common Stock
Offering Price:	\$5.25 per share of Common Stock
Underwriting Discounts and Commissions:	6.0%

SCHEDULE III

Written Testing-the-Waters Communication

None.

Issuer Free Writing Prospectus

None.

SCHEDULE IV

Louis Spencer Wells

Robert Rasmus

Joseph M Wong

Jeremy Williamson

Stacia Hansen

Claiborne Smith

Jeremy Blank

Richard Campbell-Breeden

Carol Eicher

Gilbert Li

Julian Alexander McIntyre

Laurie Bergman

Form of Lockup Agreement

September __, 2024

Canaccord Genuity LLC

As Representative of the Several Underwriters

99 High Street, Suite 1200

Boston, Massachusetts 02110

Re: Proposed Registered Follow-On Offering by Arq, Inc.

Ladies and Gentlemen:

The undersigned, a securityholder and/or officer and/or a director of Arq, Inc., a Delaware corporation (the “Company”), understands that Canaccord Genuity LLC (“Canaccord”) and certain other underwriters propose to enter into an Underwriting Agreement (the “Underwriting Agreement”) with the Company relating to the proposed registered follow-on offering (the “Offering”) of shares of the Company’s common stock, par value \$0.001 per share (the “Common Stock”). Canaccord will act as the representative (the “Representative”) of the several underwriters. The undersigned acknowledges that the underwriters are relying on the representations and agreements of the undersigned contained in this lock-up agreement in conducting the Offering and, at a subsequent date, in entering into the Underwriting Agreement and other underwriting arrangements with the Company with respect to the Offering.

In recognition of the benefit that the Offering will confer upon the undersigned as a securityholder and/or officer and/or a director of the Company, and for other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the undersigned agrees that, during the period beginning on the date hereof and ending on the date that is 90 days from the date of the Underwriting Agreement (the “Lock-Up Period”), the undersigned will not (and will cause any immediate family member not to), without the prior written consent of the Representative, which may withhold its consent in its sole discretion, directly or indirectly, (i) sell, offer to sell, contract to sell or lend, effect any short sale or establish or increase a Put Equivalent Position (as defined in Rule 16a-1(h) under the Securities Exchange Act of 1934, as amended (the “Exchange Act”)) or liquidate or decrease any Call Equivalent Position (as defined in Rule 16a-1(b) under the Exchange Act), pledge, hypothecate or grant any security interest in, or in any other way transfer or dispose of, any Common Stock or any securities convertible into or exchangeable or exercisable for Common Stock, in each case whether now owned or hereafter acquired by the undersigned or with respect to which the undersigned has or hereafter acquires the power of disposition (collectively, the “Lock-Up Securities”), (ii) make any demand for, or exercise any right with respect to the registration of any of the Lock-Up Securities, or the filing of any registration statement, prospectus or prospectus supplement (or an amendment or supplement thereto) in connection therewith, under the Securities Act of 1933, as amended, (iii) enter into any swap, hedge or any other agreement or any transaction that transfers, in whole or

in part, the economic consequence of ownership of the Lock-Up Securities, whether any such swap or transaction is to be settled by delivery of Common Stock or other securities, in cash or otherwise, or (iv) publicly announce the intention to do any of the foregoing.

Notwithstanding the foregoing, and subject to the conditions below, the undersigned may transfer the Lock-Up Securities pursuant to clauses (i) through (vi) below without the prior written consent of the Representative, provided that (1) prior to any such transfer, the Representative receives a signed lock-up agreement, substantially in the form of this lock-up agreement, for the balance of the Lock-Up Period from each donee, trustee, distributee or transferee, as the case may be, (2) any such transfer shall not involve a disposition for value, (3) in the case of clauses (i) through (iv) below, that no filing under Section 16(a) of the Exchange Act shall be voluntarily made in connection with subsequent sales of Lock-Up Securities acquired in such open market transactions, and any filings that are required by law under Section 16(a) of the Exchange Act shall clearly indicate in the footnotes thereto the nature and conditions of such transfer:

- (i) as a bona fide gift or gifts;
- (ii) to any trust for the direct or indirect benefit of the undersigned or the immediate family (defined below) of the undersigned;
- (iii) for bona fide estate planning purposes;
- (iv) to any permitted transferee (defined below);
- (v) by operation of law, such as pursuant to a qualified domestic order or in connection with a settlement related to the distribution of assets in connection with the dissolution of marriage or civil union; or
- (vi) by will or intestate succession to the legal representative, heir, beneficiary or immediate family of the undersigned upon the death of the undersigned.

The undersigned further agrees that the foregoing provisions shall be equally applicable to any Common Stock the undersigned may purchase or otherwise receive in the Offering.

Furthermore, notwithstanding the restrictions imposed by this lock-up agreement, the undersigned may, without the prior written consent of the Representative: (a) exercise an option to purchase shares of Common Stock granted under any stock incentive plan of the Company, which plan is described in the prospectus supplement related to the Offering, *provided* that the underlying shares of Common Stock shall continue to be subject to the restrictions on transfer set forth in this lock-up agreement and if the undersigned is required to file a report under Section 16 of the Exchange Act reporting a reduction in beneficial ownership of shares of Common Stock during the Lock-Up Period, the undersigned shall clearly indicate in the footnotes thereto the nature and conditions of such exercise or transfer and no other filing or public announcement shall be made voluntarily during the Lock-Up Period in connection with such exercise or transfer; (b) establish a trading plan pursuant to Rule 10b5-1 under the Exchange Act for the

transfer of shares of Common Stock, *provided* that, such plan does not provide for any transfers of Common Stock, and no filing with the SEC or other public announcement shall be required or voluntarily made by the undersigned or any other person in connection therewith, in each case during the Lock-Up Period; (c) transfer or dispose of shares of Common Stock purchased in the Offering from the underwriters or on the open market following the Offering, *provided* that no filing under the Exchange Act reporting a reduction in beneficial ownership of shares of Common Stock shall be required or voluntarily made during the Lock-Up Period; or (d) sell Lock-Up Securities for tax withholding purposes in connection with the vesting of equity awards that are subject to a taxable event upon vesting of the Company's securities, it being understood that all shares of Common Stock received upon such vesting or transfer will remain subject to the restrictions of this lock-up agreement during the Lock-Up Period, and *provided* that if the undersigned is required to file a report under the Exchange Act reporting a reduction in beneficial ownership of the undersigned's Common Stock during the Lock-Up Period related to such disposition, the undersigned shall include a statement in such report to the effect that the filing relates to the satisfaction of tax withholding obligations of the undersigned in connection with such vesting event and no other filing or public announcement shall be made voluntarily during the Lock-Up Period in connection with such vesting or transfer; or (e) the disposition of Common Stock issued or issuable in connection with any bona fide debt financing transaction.

To the extent such shares would constitute Lock-Up Securities of the undersigned, the disposition or distribution by Arq Limited of shares of Common Stock is permitted without the prior written consent of the Representative; provided that any securities distributed to the undersigned shall be subject to this Lock-up Agreement. The undersigned also agrees and consents to the entry of stop transfer instructions with the Company's transfer agent and registrar against the transfer of the Lock-Up Securities except in compliance with the foregoing restrictions.

With respect to the Offering only, the undersigned waives any registration rights relating to registration under the Securities Act of the offer and sale of any shares of Common Stock and/or any options or warrants or other rights to acquire Common Stock or any securities exchangeable or exercisable for or convertible into Common Stock, or to acquire other securities or rights ultimately exchangeable or exercisable for or convertible into Common Stock, owned either of record or beneficially by the undersigned, including any rights to receive notice of the Offering.

The undersigned confirms that the undersigned has not, and has no knowledge that any immediate family member has, directly or indirectly, taken any action designed to or that might reasonably be expected to cause or result in the stabilization or manipulation of the price of any security of the Company to facilitate the sale of the Common Stock. The undersigned will not, and will cause any immediate family member not to take, directly or indirectly, any such action.

As used herein, "permitted transferee" shall mean (a) the members of the undersigned's immediate family (for purposes of this lock-up agreement, "immediate family" shall mean the spouse, domestic partner, lineal descendant (including adopted and step-children) and his or her spouse, father, mother, the siblings of such person and his or her spouse, or any other person with

whom the undersigned has a relationship by blood, marriage or adoption not more remote than first cousin), (b) if the undersigned is a corporation, limited liability company, partnership or other entity, its partners, shareholders, members of, or owners of similar equity interests in the undersigned by way of distribution upon the liquidation and dissolution of the undersigned or (c) any affiliate of the undersigned.

The undersigned represents and warrants that the undersigned has full power, capacity and authority to enter into this lock-up agreement. This lock-up agreement is irrevocable and will be binding on the undersigned and the successors, heirs, personal representatives and assigns of the undersigned.

This lock-up agreement shall be governed by and construed in accordance with the laws of the State of New York without giving effect to any choice of law or conflicting provision or rule (whether of the State of New York, or any other jurisdiction) that would cause the laws of any jurisdiction other than the State of New York to be applied. In furtherance of the foregoing, the internal laws of the State of New York will control the interpretation and construction of this Lock-Up Agreement, even if under such jurisdiction's choice of law or conflict of law analysis, the substantive law of some other jurisdiction would ordinarily apply.

Whether or not the Offering actually occurs depends on a number of factors, including market conditions. Any Offering will only be made pursuant to an Underwriting Agreement, the terms of which are subject to negotiation between the Company and the Representative.

This lock-up agreement shall automatically terminate, and the undersigned shall be released from its obligations hereunder, upon the earliest to occur, if any, of (i) the Company advising the Representative in writing, prior to the execution of the Underwriting Agreement, that it has determined not to proceed with the Offering, (ii) the executed Underwriting Agreement being terminated prior to the closing of the Offering (other than the provisions thereof that survive termination), and (iii) October 15, 2024, in the event that the Underwriting Agreement has not been executed by such date.

[Signature Page Follows]

Very truly yours,

Name of Securityholder/Director/Officer
(Print exact name)

By: _____
Signature

If not signing in an individual capacity:

Name of Authorized Signatory *(Print)*

Title of Authorized Signatory
(Print) (indicate capacity of person signing if signing as custodian, trustee or on behalf of an entity)

Subsidiaries

Entity Name	State or Country of Organization
ACS Land Company, LLC	Delaware
ADA Analytics, LLC	Delaware
ADA Analytics Israel Ltd.	Israel
Arq Solutions, LLC	Delaware
Arq Solutions (Operations), LLC	Delaware
Arq Solutions (Red River), LLC	Delaware
Arq Solutions (Vortex IP), LLC	Delaware
Arq Solutions (Vortex Operations), LLC	Delaware
Arq Solutions (ES), Inc.	Colorado
ADEquity, LLC	Delaware
Arq Purification, LLC	Delaware
Crowfoot Supply Company, LLC	Delaware
Five Forks Mining, LLC	Delaware
FluxSorb Technologies, LLC	Delaware
Arq Series B, LLC	Delaware
Arq IP Limited	UK
Arq International Limited	UK
Arq UK Management Ltd	UK
Wharnecliffe Asset Management LLC	Delaware
Mine Four LLC	Delaware
Arq LLC	Delaware
Arq Projects Holding Company LLC	Delaware
Corbin Project LLC	Delaware
Arq Corbin Land LLC	Delaware
Arq Corbin LLC	Delaware



September 20, 2024

Arq, Inc.
8051 E. Maplewood Ave, Suite 210
Greenwood Village, CO 80111

Ladies and Gentlemen:

We have acted as counsel to Arq, Inc., a Delaware corporation (the “Company”), in connection with the public offering (a) by the Company of up to 5,485,500 shares of common stock, par value \$0.001 per share (the “Shares”), including up to 715,500 Shares that may be sold pursuant to the exercise of an option to purchase additional Shares. The Shares are being offered pursuant to the Registration Statement on Form S-3 (File No. 333-281762) (the “Registration Statement”), filed by the Company with the Securities and Exchange Commission (the “Commission”) on September 4, 2024 under the Securities Act of 1933, as amended (the “Act”), the base prospectus dated August 23, 2024 included in the Registration Statement at the time it became effective (the “Base Prospectus”) and a prospectus supplement dated September 20, 2024 filed with the Commission pursuant to Rule 424(b) under the Act (together with the Base Prospectus, the “Prospectus”). This opinion is being furnished in connection with the requirements of Item 601(b)(5) of Regulation S-K under the Act.

In this capacity, we have examined originals or copies, certified or otherwise identified to our satisfaction, of such documents, corporate records and other instruments as we have deemed necessary for the purposes of this opinion, including (i) the Registration Statement and Prospectus, (ii) the Underwriting Agreement dated as of September 20, 2024 entered into by and among the underwriters named therein (the “Underwriters”) and the Company, to be filed as Exhibit 1.1 to the Company’s Current Report on Form 8-K to be filed on September 20, 2024 (the “Underwriting Agreement”), (iii) the Company’s Second Amended and Restated Certificate of Incorporation, as in effect on the date hereof, (iv) the Company’s Amended and Restated Bylaws, as in effect on the date hereof, and (v) resolutions of the Board of Directors and of the Pricing Committee of the Board of Directors.

In all cases, we have assumed the legal capacity of each natural person signing any of the documents and corporate records examined by us, the genuineness of signatures, including electronic signatures, the authenticity of documents submitted to us as originals, the conformity to authentic original documents of documents submitted to us as copies and the accuracy and completeness of all corporate records and other information made available to us by the Company. We have not independently established or verified any facts relevant to the opinion expressed herein, but have relied upon statements and representations of officers and other representatives of the Company and others as to factual matters.

Based upon and subject to the foregoing qualifications, assumptions and limitations and the further limitations set forth below, we are of the opinion that (i) when delivered to and paid

for by the Underwriters in accordance with the Underwriting Agreement, the Shares to be issued and sold by the Company will be validly issued, fully paid and non-assessable.

This opinion is limited to the General Corporation Law of the State of Delaware. We express no opinion as to any other matters, including without limitation any matters relating to the securities or blue sky laws of any jurisdiction or any rules or regulations thereunder.

We hereby consent to the filing of this opinion with the Commission as Exhibit 5.1 to the Company's Current Report on Form 8-K to be filed on September 20, 2024, which Current Report on Form 8-K will be incorporated by reference into the Registration Statement. We also consent to the reference to our firm under the caption "Legal Matters" in the Prospectus. In giving this consent, we do not admit that we come within the categories of persons whose consent is required under Section 7 of the Act or under the rules and regulations of the Commission issued thereunder.

This letter is given as of the date hereof, and we assume no responsibility for updating this letter or the opinions or statements set forth herein to take into account any event, action, interpretation or change in law occurring subsequent to the date hereof that may affect the validity of any of such opinions or statements.

Very truly yours,

/s/ Faegre Drinker Biddle & Reath LLP

FAEGRE DRINKER BIDDLE & REATH LLP

arq.com

Arq, Inc. Announces Proposed Public Offering of Common Stock

GREENWOOD VILLAGE, Colo., September 19, 2024 - GlobeNewswire - Arq, Inc. (NASDAQ: ARQ) ("Arq" or the "Company"), a producer of activated carbon and other environmentally efficient carbon products for use in purification and sustainable materials, today announced that it has commenced an underwritten public offering of shares of its common stock, par value \$0.001 per share ("common stock"), for sale in an underwritten public offering. All of the shares in the offering are being offered by Arq. Arq expects to grant the underwriters a 30-day option to purchase up to an additional 15% of the number of shares of its common stock in the underwritten public offering. The offering is subject to market and other conditions, and there can be no assurance as to whether or when the offering may be completed, or as to the actual size or terms of the offering.

Arq intends to use the net proceeds from this proposed offering for general corporate purposes, which may include working capital, capital expenditures, including continued construction of granular activated carbon facilities at Arq's Red River and Corbin manufacturing facilities located in Coushatta, Louisiana and Corbin, Kentucky, respectively, research and development expenditures, commercial expenditures, debt service costs and repayment, acquisitions of new technologies, products or businesses, and investments.

Canaccord Genuity and Roth Capital Partners are acting as joint bookrunners for the offering.

A shelf registration statement on Form S-3 (File No. 333-281762) relating to the shares was previously filed with the Securities and Exchange Commission (the "SEC") and became effective on September 4, 2024. The offering is being made only by means of a written prospectus and prospectus supplement that form a part of the registration statement. A preliminary prospectus supplement and accompanying prospectus relating to the offering has been filed with the SEC and is available on the SEC's website at www.sec.gov. A copy of the preliminary prospectus supplement and accompanying prospectus, when available, may be obtained by contacting: Arq, Inc., 8051 E. Maplewood Ave., Suite 210, Greenwood Village, Colorado 80111, telephone: (720) 598-3500; Canaccord Genuity LLC, Attn: Syndication Department, 1 Post Office Square, 30th Floor, Boston, MA 02109, or by email at prospectus@cgf.com; Roth Capital Partners, LLC, 888 San Clemente Drive, Suite 400, Newport Beach, CA 92660, (800) 678-9147.

This press release shall not constitute an offer to sell or the solicitation of an offer to buy these securities, nor shall there be any sale of these securities in any state or jurisdiction in which such offer, solicitation or sale would be unlawful prior to registration or qualification under the securities laws of any such state or jurisdiction.

About Arq

Arq is a diversified, environmental technology company with products that enable a cleaner and safer planet while actively reducing our environmental impact. As the only vertically integrated producer of activated carbon products in North America, we deliver a reliable domestic supply of innovative, hard-to-source, high-demand products. We apply our extensive expertise to develop groundbreaking solutions to remove harmful chemicals and pollutants from water, land and air. Learn more at: www.arq.com.

Forward-Looking Statements

This press release contains forward-looking statements within the meaning of Section 21E of the Securities Exchange Act of 1934, which provides a "safe harbor" for such statements in certain circumstances. When used in this press release, the words "can," "will," "may," "intends," "expects," "continuing," "believes," similar expressions

and any other statements that are not historical facts are intended to identify those assertions as forward-looking statements. All statements that address activities, events or developments that the Company intends, expects or believes may occur in the future are forward-looking statements. These forward-looking statements include, but are not limited to, statements or expectations regarding the anticipated underwritten offering and the anticipated use of net proceeds from the offering. The forward-looking statements included in this press release involve risks and uncertainties. Actual events or results could differ materially from those discussed in the forward-looking statements as a result of various factors including, but not limited to, stock market conditions, our ability to satisfy the closing conditions in the underwriting agreement, our ability to complete the offering, timing of new and pending regulations and any legal challenges to or extensions of compliance dates of them; the U.S. government's failure to promulgate regulations that benefit our business; changes in laws and regulations, accounting rules, prices, economic conditions and market demand; impact of competition; availability, cost of and demand for alternative energy sources and other technologies; technical, start up and operational difficulties; competition within the industries in which we operate; our inability to commercialize our products on favorable terms; our inability to effectively and efficiently commercialize new products; changes in construction costs or availability of construction materials; our inability to effectively manage construction and startup of the Red River GAC Facility or Corbin Facility; our inability to obtain required financing or financing on terms that are favorable to us; our inability to ramp up our operations to effectively address recent and expected growth in our business; loss of key personnel; ongoing effects of the inflation and macroeconomic uncertainty, including from the ongoing pandemic and armed conflicts around the world, and such uncertainty's effect on market demand and input costs; availability of materials and equipment for our business; intellectual property infringement claims from third parties; pending litigation; as well as other factors relating to our business strategy, goals and expectations concerning the Arq Acquisition (including future operations, future performance or results); our ability to maintain relationships with customers, suppliers and others with whom it does business and meet supply requirements, or its results of operations and business generally; risks related to diverting management's attention from our ongoing business operations; costs related to the Arq Acquisition; opportunities for additional sales of our AC products and end-market diversification; the timing and scope of new and pending regulations and any legal challenges to or extensions of compliance dates of them; our ability to meet customer supply requirements; the rate of coal-fired power generation in the U.S., the timing and cost of capital expenditures and the resultant impact to our liquidity and cash flows as described in our filings with the SEC, with particular emphasis on the risk factor disclosures contained in those filings. You are cautioned not to place undue reliance on the forward-looking statements made in this press release and to consult filings we have made and will make with the SEC for additional discussion concerning risks and uncertainties that may apply to our business and the ownership of our securities. The forward-looking statements contained in this press release are presented as of the date hereof, and we disclaim any duty to update such statements unless required by law.

Investor Contact

Anthony Nathan, Arq
Marc Silverberg, ICR
investors@arq.com

arq.com

Arq, Inc. Announces Pricing of \$25 Million Public Offering of Common Stock

GREENWOOD VILLAGE, Colo., September 20, 2024 - GlobeNewswire - Arq, Inc. (NASDAQ: ARQ) ("Arq" or the "Company"), a producer of activated carbon and other environmentally efficient carbon products for use in purification and sustainable materials, today announced the pricing of an underwritten public offering of 4,770,000 shares of its common stock, par value \$0.001 per share ("common stock"), at a price to the public of \$5.25 per share. All of the shares in the offering are being sold by Arq. The gross proceeds to Arq from the offering, before deducting the underwriting discounts and commissions and other offering expenses, are expected to be approximately \$25 million. The offering is expected to close on or about September 23, 2024, subject to customary closing conditions. In addition, Arq has granted the underwriters a 30-day option to purchase up to an additional 715,500 shares of its common stock in the underwritten public offering.

Arq intends to use the net proceeds from this offering for general corporate purposes, which may include working capital, capital expenditures, including continued construction of granular activated carbon facilities at Arq's Red River and Corbin manufacturing facilities located in Coushatta, Louisiana and Corbin, Kentucky, respectively, research and development expenditures, commercial expenditures, debt service costs and repayment, acquisitions of new technologies, products or businesses, and investments.

Canaccord Genuity and Roth Capital Partners are acting as joint bookrunners for the offering.

A shelf registration statement on Form S-3 (File No. 333-281762) relating to the shares was previously filed with the Securities and Exchange Commission (the "SEC") and became effective on September 4, 2024. The offering is being made only by means of a written prospectus and prospectus supplement that form a part of the registration statement. A preliminary prospectus supplement and accompanying prospectus relating to the offering has been filed with the SEC and is available on the SEC's website at www.sec.gov. A final prospectus supplement and accompanying prospectus relating to the offering will be filed with the SEC and available on the SEC's website at www.SEC.gov. A copy of the final prospectus supplement and the accompanying prospectus, when available, may be obtained by contacting: Arq, Inc., 8051 E. Maplewood Ave., Suite 210, Greenwood Village, Colorado 80111, telephone: (720) 598-3500; Canaccord Genuity LLC, Attn: Syndication Department, 1 Post Office Square, 30th Floor, Boston, MA 02109, or by email at prospectus@cgf.com; Roth Capital Partners, LLC, 888 San Clemente Drive, Suite 400, Newport Beach, CA 92660, (800) 678-9147.

This press release shall not constitute an offer to sell or the solicitation of an offer to buy these securities, nor shall there be any sale of these securities in any state or jurisdiction in which such offer, solicitation or sale would be unlawful prior to registration or qualification under the securities laws of any such state or jurisdiction.

About Arq

Arq is a diversified, environmental technology company with products that enable a cleaner and safer planet while actively reducing our environmental impact. As the only vertically integrated producer of activated carbon products in North America, we deliver a reliable domestic supply of innovative, hard-to-source, high-demand products. We apply our extensive expertise to develop groundbreaking solutions to remove harmful chemicals and pollutants from water, land and air. Learn more at: www.arq.com.

Forward-Looking Statements

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Investor Contact

Anthony Nathan, Arq
Marc Silverberg, ICR
investors@arq.com