

0001193125-25-026207S-1 Aptose Biosciences Inc. 2025021320250213173021173023173023 0 0001193125-25-026207 S-1 10 20250213 20250213 Aptose Biosciences Inc. 0000882361 2836 000000000 A6 1231 S-1 33 333-284927 25621820 66 WELLINGTON STREET WEST, SUITE 5300 TD BANK TOWER BOX 48 TORONTO A6 M5K 1E6 310-849-8060 66 WELLINGTON STREET WEST, SUITE 5300 TD BANK TOWER BOX 48 TORONTO A6 M5K 1E6 Aptose Biosciences Inc., (formerly LORUS THERAPEUTICS INC.) 20140905 LORUS THERAPEUTICS INC 19990308 IMUTEC PHARMA INC 19970113 S-1 1 d910194ds1.htm S-1 S-1 Table of Contents As filed with the Securities and Exchange Commission on February 13, 2025 Registration No. 333-<sup>1</sup> 2836-<sup>2</sup> 98-1136802 (State or other jurisdiction of incorporation or organization) (Primary Standard Industrial Classification Code Number) (I.R.S. Employer Identification Number) 66 Wellington Street West, Suite 5300 TD Bank Tower, Box 48 Toronto, Ontario M5K 1E6 Canada (Address, including zip code, and telephone number, including area code, of registrant's principal executive offices) Aptose Biosciences U.S. Inc. Unit 120, 12770 High Bluff Drive San Diego, California 92130 (858) 926-2730 (Name, address, including zip code, and telephone number, including area code, of agent for service) COPIES TO: Daniel M. Miller Dorsey & Whitney LLP Suite 1070, 1095 West Pender Street Vancouver, British Columbia Canada V6E 2M6 Fletcher Payne Senior Vice President and Chief Financial Officer Aptose Biosciences Inc. 66 Wellington Street West, Suite 5300 TD Bank Tower, Box 48 Toronto, Ontario M5K 1E6 Canada From time to time after the effective date of this Registration Statement (Approximate date of commencement of proposed sale to the public) If any of the securities being registered on this Form are to be offered on a delayed or continuous basis pursuant to Rule 415 under the Securities Act of 1933, please check the following box.<sup>1</sup> If this Form is used to register additional securities for an offering pursuant to Rule 462(b) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering.<sup>2</sup> If this Form is a post-effective amendment filed pursuant to Rule 462(c) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering.<sup>1</sup> If this Form is a post-effective amendment filed pursuant to Rule 462(d) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering.<sup>2</sup> Indicate by check mark whether the Company is a large accelerated filer, an accelerated filer, a non-accelerated filer, or a smaller reporting company. See the definitions of "large accelerated filer," "accelerated filer" and "smaller reporting company" in Rule 12b-2 of the Exchange Act. (Check one): Large Accelerated Filer  Non-accelerated filer  Smaller Reporting Company  Emerging Growth Company  If an emerging growth company, indicate by check mark if the Company has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 7(a)(2)(B) of the Securities Act.<sup>1</sup> The Company hereby amends this registration statement on such date or date(s) as may be necessary to delay its effective date until the Company shall file a further amendment which specifically states that this registration statement shall thereafter become effective in accordance with Section 8(a) of the Securities Act of 1933, or until the registration statement shall become effective on such date as the Commission acting pursuant to said Section 8(a) may determine. Table of Contents The information in this prospectus is not complete and may be changed. These securities may not be sold until the registration statement filed with the Securities and Exchange Commission of which this prospectus is a part becomes effective. This prospectus is not an offer to sell these securities and it is not soliciting an offer to buy these securities in any state where the offer or sale is not permitted. Subject to Completion, Dated February 13, 2025 PRELIMINARY PROSPECTUS 12,030,218 Common Shares This prospectus relates to the resale of up to 12,030,218 Common Shares, no par value, of Aptose Biosciences Inc. (the "Common Shares"), which may be offered by Keystone Capital Partners, LLC ("Keystone"), "Keystone Capital Partners" or the "Selling Shareholder"). The Common Shares being offered by the Selling Shareholder are outstanding or issuable pursuant to the Common Share Purchase Agreement dated February 7, 2025 (the "Purchase Agreement"). See "The Keystone Capital Transaction" for a description of the Purchase Agreement. Also, please refer to "Selling Shareholder" beginning on page 27. Such registration does not mean that Keystone will actually offer or sell any of these Common Shares. We will not receive any proceeds from the sales of the above Common Shares by the Selling Shareholder; however, we will receive proceeds under the Purchase Agreement if we sell Common Shares to the Selling Shareholder. Our Common Shares are listed on the Nasdaq Capital Market ("Nasdaq"), under the symbol "APTO" and on the Toronto Stock Exchange ("TSX") under the symbol "APS". On February 7, 2025, the last reported sale price of the Common Shares on Nasdaq was \$0.178 per Common Share and on the TSX was C\$0.26. The Selling Shareholder is an "underwriter" within the meaning of the Securities Act of 1933. The Selling Shareholder is offering these Common Shares. The Selling Shareholder may sell all or a portion of these Common Shares from time to time in market transactions through any market on which our Common Shares are traded, in negotiated transactions or otherwise, and at prices and on terms that will be determined by the then prevailing market price or at negotiated prices directly or through a broker or brokers, who may act as agent or as principal or by a combination of such methods of sale. The Selling Shareholder will receive all proceeds from the sale of the Common Shares. For additional information on the methods of sale, you should refer to the section entitled "Plan of Distribution." Investing in our Common Shares involves a high degree of risk. Review the risk factors beginning on page 17 of this prospectus carefully before you make an investment in our securities. You should read this prospectus, together with additional information described under the headings "Incorporation of Certain Information by Reference" and "Where You Can Find More Information," carefully before you invest in any of our securities. Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or passed upon the adequacy or accuracy of this prospectus. Any representation to the contrary is a criminal offense. The date of this prospectus is <sup>1</sup> <sup>2</sup> 2025 Table of Contents INDEX Page No. ABOUT THIS PROSPECTUS CAUTIONARY STATEMENT REGARDING FORWARD-LOOKING STATEMENTS ENFORCEABILITY OF CIVIL LIABILITIES iv PROSPECTUS SUMMARY RISK FACTORS USE OF PROCEEDS DILUTION THE KEYSTONE CAPITAL TRANSACTION SELLING SHAREHOLDER PLAN OF DISTRIBUTION MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS BUSINESS DESCRIPTION OF OUR COMMON SHARES DISCLOSURE OF COMMISSION POSITION ON INDEMNIFICATION FOR

SECURITIES ACT LIABILITIES    LEGAL MATTERS    EXPERTS    WHERE YOU CAN FIND MORE INFORMATION    33    INCORPORATION OF CERTAIN INFORMATION BY REFERENCE    33    INFORMATION NOT REQUIRED IN THE PROSPECTUS    II-1    Table of Contents ABOUT THIS PROSPECTUS

This prospectus is part of a registration statement that we have filed with the Securities and Exchange Commission (the "SEC") pursuant to which the Selling Shareholder named herein may, from time to time, offer and sell or otherwise dispose of the securities covered by this prospectus. You should not assume that the information contained in this prospectus is accurate on any date subsequent to the date set forth on the front cover of this prospectus or that any information we have incorporated by reference is correct on any date subsequent to the date of the document incorporated by reference, even though this prospectus is delivered or securities are sold or otherwise disposed of on a later date. It is important for you to read and consider all information contained in this prospectus, including the Information Incorporated by Reference herein, in making your investment decision. You should also read and consider the information in the documents to which we have referred you under the captions "Where You Can Find More Information" and "Incorporation of Certain Information by Reference" in this prospectus. Neither we nor the Selling Shareholder have authorized any dealer, salesman or other person to give any information or to make any representation other than those contained or incorporated by reference in this prospectus. You must not rely upon any information or representation not contained or incorporated by reference in this prospectus. This prospectus does not constitute an offer to sell or the solicitation of an offer to buy any of our securities other than the securities covered hereby, nor does this prospectus constitute an offer to sell or the solicitation of an offer to buy any securities in any jurisdiction to any person to whom it is unlawful to make such offer or solicitation in such jurisdiction. Persons who come into possession of this prospectus in jurisdictions outside the United States are required to inform themselves about, and to observe, any restrictions as to the offering and the distribution of this prospectus applicable to those jurisdictions. We further note that the representations, warranties and covenants made in any agreement that is filed as an exhibit to any document that is incorporated by reference in the accompanying prospectus were made solely for the benefit of the parties to such agreement, including, in some cases, for the purpose of allocating risk among the parties to such agreements, and should not be deemed to be a representation, warranty or covenant to you. Moreover, such representations, warranties or covenants were accurate only as of the date when made. Accordingly, such representations, warranties and covenants should not be relied on as accurately representing the current state of our affairs. The information in this prospectus is accurate as of the date on the front cover. Information incorporated by reference into this prospectus is accurate as of the date of the document from which the information is incorporated. You should not assume that the information contained in this prospectus is accurate as of any other date. As used in this prospectus and in any prospectus supplement, unless the context otherwise requires, the terms "Aptose," the "Company," "we," "us," and "our" refer to Aptose Biosciences Inc., and, unless the context requires otherwise, the subsidiaries through which it conducts business. Unless stated otherwise or if the context otherwise requires, all references to dollar amounts in this prospectus are references to U.S. dollars. CAUTIONARY STATEMENT REGARDING FORWARD-LOOKING STATEMENTS This prospectus, including the documents incorporated by reference herein, contains forward-looking statements within the meaning of the United States Private Securities Litigation Reform Act of 1995 and "forward-looking information" within the meaning of applicable Canadian securities law. We refer to such forward-looking statements and forward-looking information collectively as "forward-looking statements." These statements relate to future events or future performance and reflect our expectations and assumptions. Table of Contents regarding our growth, results of operations, performance and business prospects and opportunities. Such forward-looking statements reflect our current beliefs and are based on information currently available to us. In some cases, forward-looking statements can be identified by terminology such as "may," "would," "could," "will," "should," "expect," "plan," "intend," "anticipate," "believe," "estimate," "predict," "potential," "continue" or the negative of these terms or other similar expressions concerning matters that are not historical facts. The forward-looking statements contained in this prospectus and in the documents incorporated by reference reflect our current views with respect to future events, are subject to significant risks and uncertainties, and are based upon a number of estimates and assumptions that, while considered reasonable by us, are inherently subject to significant business, economic, competitive, political and social uncertainties and contingencies. Many factors could cause our actual results, performance or achievements to be materially different from any future results, performance, or achievements that may be expressed or implied by such forward-looking statements, including, among others: (i) our risk of imminent bankruptcy; (ii) we need to obtain substantial funding immediately in order to continue operations and our exploration of strategic alternatives; (iii) our compliance plans to address various notifications from Nasdaq and whether such compliance plans will be accepted by Nasdaq; (iv) our ability to continue as a going concern; (v) our lack of product revenues; (vi) our early stage of development, particularly the inherent risks and uncertainties associated with (i) developing new drug candidates generally, (ii) demonstrating the safety and efficacy of these drug candidates in clinical studies in humans, and (iii) obtaining regulatory approval to commercialize these drug candidates; (vii) our need to raise substantial additional capital in the near future and that we may be unable to raise such funds when needed and on acceptable terms; (viii) further equity financing, which may substantially dilute the interests of our existing shareholders; (ix) clinical studies and regulatory approvals of our drug candidates are subject to delays, and may not be completed or granted on expected timetables, if at all, and such delays may increase our costs and could substantially harm our business; (x) our reliance on external contract research/manufacturing organizations for certain activities and if we are subject to quality, cost, or delivery issues with the preclinical and clinical grade materials supplied by contract manufacturers, our business operations could suffer significant harm; (xi) clinical studies are long, expensive and uncertain processes and the United States Food and Drug Administration, or "FDA," or other similar foreign regulatory agencies that we are required to report to, may ultimately not approve any of our product candidates; (xii) our ability to comply with applicable regulations and standards; (xiii) our inability to achieve our projected development goals in the time frames we announce and expect; (xiv) difficulties in enrolling patients for clinical trials may lead to delays or cancellations of our clinical trials; (xv) our reliance on third parties to conduct and monitor our preclinical studies; (xvi) our ability to attract and retain key personnel, including key executives and scientists; (xvii) any misconduct or improper activities by our employees; (xviii) our exposure to exchange rate risk; (xix) our ability to commercialize our business attributed to negative results from clinical trials; (xx) the marketplace may not accept our products or product candidates due to the intense competition and technological change in the biotechnical and pharmaceuticals, and we may not be able to compete successfully against other companies in our

industries and achieve profitability; our ability to obtain and maintain patent protection; our ability to afford substantial costs incurred with defending our intellectual property; our ability to protect our intellectual property rights and not infringe on the intellectual property rights of others; our business is subject to potential product liability and other claims; potential exposure to legal actions and potential need to take action against other entities; commercialization limitations imposed by intellectual property rights owned or controlled by third parties; our ability to maintain adequate insurance at acceptable costs; our ability to find and enter into agreements with potential partners; extensive government regulation; data security incidents and privacy breaches could result in increased costs and reputational harm; our common share price has been and is likely to continue to be volatile; future sales of our common shares by us or by our existing shareholders could cause our common share price to drop; changing global market and financial conditions; changes in an active trading market in our common shares; difficulties by non-Canadian investors to obtain and enforce judgments against us because of our Canadian incorporation and presence; our *smaller reporting company* status; any failures to maintain an effective system of internal controls may result in material misstatements of our financial statements, or cause us to fail to meet our reporting obligations or fail to prevent fraud; our broad discretion in how we use the proceeds of the sale of Offered Shares; our ability to expand our business through the acquisition of companies or businesses; and other risks detailed from time-to-time in our ongoing filings with the SEC and Canadian securities regulators, and those which are discussed under the heading *“Risk Factors”* in this prospectus and in the documents incorporated by reference. Should one or more of these risks or uncertainties materialize, or should the assumptions described in the sections entitled *“Risk Factors”* in this prospectus and in the documents incorporated by reference underlying those forward-looking statements prove incorrect, actual results may vary materially from those described in the forward-looking statements. More detailed information about these and other factors is included in this prospectus under the section entitled *“Risk Factors”* and in the documents incorporated by reference into this prospectus. Although we have attempted to identify factors that could cause actual actions, events or results to differ materially from those *“iii Table of Contents* described in forward-looking statements, there may be other factors that cause actions, events or results not to be as anticipated, estimated or intended. Forward-looking statements are based upon our beliefs, estimates and opinions at the time they are made and we undertake no obligation to update forward-looking statements if these beliefs, estimates and opinions or circumstances should change, except as required by applicable law. There can be no assurance that forward-looking statements will prove to be accurate, as actual results and future events could differ materially from those anticipated in such statements. Accordingly, readers should not place undue reliance on forward-looking statements. Forward-looking statements contained in this prospectus are made as of the date of this prospectus. Forward-looking statements made in a document incorporated by reference into this prospectus are made as of the date of the original document and have not been updated by us except as expressly provided for in this prospectus. Except as required under applicable securities legislation, we undertake no obligation to publicly update or revise forward-looking statements, whether as a result of new information, future events or otherwise. We qualify all the forward-looking statements contained in this prospectus and the documents incorporated by reference in this prospectus by the foregoing cautionary statements.

**ENFORCEABILITY OF CIVIL LIABILITIES** We are incorporated under the laws of Canada. Many of our directors and officers and the experts named in this prospectus are residents of countries other than the United States, and all or a substantial portion of their assets and some of our assets are located outside the United States. We have appointed Aptose Biosciences U.S. Inc. as our agent for service of process in the United States, but it may be difficult for holders of securities who reside in the United States to effect service within the United States upon those directors, officers and experts who are not residents of the United States. Additionally, it may not be possible for you to enforce judgments obtained in U.S. courts based upon the civil liability provisions of the U.S. federal securities laws or other laws of the United States. In addition, there is doubt as to whether an original action could be brought in Canada against us or our directors or officers based solely upon U.S. federal or state securities laws and as to the enforceability in Canadian courts of judgments of U.S. courts obtained in actions based upon the civil liability provisions of U.S. federal or state securities laws.

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**PROSPECTUS SUMMARY** This summary highlights information contained elsewhere in this prospectus or incorporated by reference. It may not contain all of the information that you should consider before investing in our securities. You should read this entire prospectus carefully, including the *“Risk Factors”*, *“Management’s Discussion and Analysis of Financial Condition and Results of Operations”* sections, and the financial statements and related notes included or incorporated by reference herein. This prospectus includes forward-looking statements that involve risks and uncertainties. See *“Cautionary Statement Regarding Forward-Looking Statements.”* Aptose Biosciences Inc. Our Business Aptose Biosciences Inc. (*“Aptose, the Company, we, us, or our”*) is a science-driven clinical stage biotechnology company committed to the development and commercialization of precision medicines addressing unmet clinical needs in oncology, with an initial focus on hematology. The Company’s small molecule cancer therapeutics pipeline includes products designed to provide single agent efficacy and to enhance the efficacy of other anti-cancer therapies and regimens without overlapping toxicities. The Company’s executive offices are located in San Diego, California, and our head office is located in Toronto, Canada. Tuspetinib, (*“Tuspetinib”* or *“TUS”*), Aptose’s lead program, is being developed for frontline combination therapy in newly diagnosed acute myeloid leukemia (*“AML”*) patients to unlock the most significant patient impact and greatest commercial opportunity. AML is a highly aggressive cancer of the bone marrow and blood, and there is a tremendous unmet need for a therapy that can extend survival of newly diagnosed AML patients and improve their quality of life. Newly diagnosed AML patients typically fail all frontline (1L) therapies, and responses to subsequent salvage therapies in the relapsed or refractory (R/R) setting are limited, highlighting the need for a more effective triple drug (*“triplelet”*) combination therapy to increase survival in the frontline setting. Current standard of care treatment in the 1L setting for many newly diagnosed AML patients includes a doublet combination of venetoclax and a hypomethylating agent (VEN+HMA). Exploratory triplet therapies using current agents added to VEN+HMA have achieved notable response rates but are compromised because of toxicities and the limited activity across subpopulations of AML patients. In contrast, tuspetinib is a convenient, orally administered, once-daily kinase inhibitor that targets select kinases operative in AML and exerts broad activity across AML populations with adverse genetics. However, tuspetinib avoids kinases that typically cause toxicities associated with other kinase inhibitors and has demonstrated an excellent safety profile. These properties position tuspetinib as an ideal agent for addition to the VEN+HMA backbone therapy to create a superior triplet (TUS+VEN+HMA) frontline therapy to treat newly diagnosed AML. Aptose is currently conducting a Phase 1/2 clinical trial to develop Tuspetinib in

the TUS+VEN+HMA triplet drug combinations in newly diagnosed AML patients, and once the study enrolls, we expect to deliver important clinical data (CR and MRD negativity rates, safety, and survival) over the following 6 to 12 months. It was essential to understand the safety, tolerability, and response activities of tuspetinib as a single agent and as the TUS+VEN doublet combination before advancing to the TUS+VEN+HMA triplet. We therefore performed a clinical trial of TUS single agent in patients with relapsed or refractory (R/R) AML and then performed a trial with the TUS+VEN doublet therapy in R/R AML patients and now have advanced the TUS+VEN+HMA frontline therapy into newly diagnosed AML patients. To be precise, we have now completed a dose escalation and dose exploration international Phase 1/2 clinical trial to assess the safety, tolerability, pharmacokinetics, pharmacodynamic responses, and efficacy of TUS single agent in patients with R/R AML. Significant bone marrow blast reductions and clinical responses without dose limiting toxicities were achieved at four dose levels across a broad diversity of mutationally-defined AML populations and with a highly favorable safety profile. <sup>1</sup> Table of Contents Tuspetinib to date has demonstrated a favorable safety profile and has caused no drug-related QTc prolongations, liver or kidney toxicities, muscle damage, or differentiation syndrome, and no myelosuppression with continuous dosing of patients in remission. At a dose of 80 mg, tuspetinib demonstrated notable response rates in R/R AML patients that had never been treated with venetoclax (VEN-naïve AML): CR/ CRh=36% among all-comers, CR/CRh=50% among patients with mutated FLT3, and CR/CRh=25% in patients with wildtype FLT3. Following completion of the single agent dose escalation and exploration trial, tuspetinib advanced into the APTIVATE expansion trial of the Phase 1/2 program to evaluate the TUS+VEN doublet in R/R AML patient populations. The TUS+VEN doublet combination therapy maintained a favorable safety profile: no new or unexpected safety signals were observed, and there were no reported drug-related adverse events of QTc prolongation, differentiation syndrome, or deaths. The TUS+VEN doublet combination also achieved significant bone marrow reductions and clinical responses in heavily pretreated R/R AML patients, including those with mutated TP53, mutated NKRAS, wildtype or mutated FLT3, and those who failed prior therapy with venetoclax (â€œPrior-VENâ€) or FLT3 inhibitors (â€œPrior-FLT3iâ€). Collectively, the clinical safety and efficacy data with TUS single agent and TUS+VEN doublet in R/R AML patients position tuspetinib for development as the TUS+VEN+HMA triplet in newly diagnosed AML patients. Newly diagnosed AML patients are VEN-naïve, FLT3i-naïve, and HMA-naïveâ€”this patient population is expected to be highly responsive to a tuspetinib-containing triplet therapy. Based on the safety and efficacy profile of tuspetinib, we believe that tuspetinib as part of the TUS+VEN+HMA triplet, if approved, could establish a new standard of care therapy for newly diagnosed patients with mutated or unmutated FLT3 and in patients with other adverse genetic abnormalities. These beliefs related to the potential patient treatment and commercial opportunities are based on managementâ€™s current assumptions and estimates, which are subject to change, and there can be no assurance that tuspetinib will ever be approved or successfully commercialized and, if approved and commercialized, that it will ever generate significant revenues. See our â€œRisk Factorsâ€â€œWe are an early-stage development company with no revenues from product sales.â€ and â€œWe have a history of operating losses. We expect to incur net losses and we may never achieve or maintain profitability.â€ in our Annual Report on Form 10-K filed with the SEC on March 26, 2024, incorporated by reference in this prospectus. Luxeptinib (â€œLUXâ€) is an orally administered, highly potent kinase inhibitor that selectively targets defined clusters of kinases that are operative in hematologic malignancies. LUX has demonstrated clinical activity in R/R AML and in R/R B-cell cancer patients but was not consistently achieving the desired exposure levels to drive responses. Absorption of the original G1 formulation hindered the effectiveness of LUX, so a new G3 formulation was developed. Clinical evaluation of the G3 formulation has been completed in a single dose bioavailability study across five dose levels and then with continuous dosing using two different dose levels. The G3 formulation achieved our desired plasma exposure benchmark, with approximately 10-fold better absorption, and better tolerability than the original formulation. We are seeking alternative development paths and collaborations for LUX. Given current funding and our prioritization of tuspetinib, we have decided to pause funding the development of LUX. **Tuspetinib Indication and Clinical Trials:** Tuspetinib is an oral, highly potent, small molecule inhibitor of kinases operative in myeloid malignancies and known to be involved in tumor proliferation, resistance to therapy and differentiation. Preclinical in vitro and in vivo studies suggest that Tuspetinib may be an effective monotherapy and combination therapy in patients with hematologic malignancies including AML. A U.S. based Phase 1/2 clinical trial with the TUS+VEN+HMA triplet drug combinations in newly diagnosed AML patients is currently being conducted. An international Phase 1/2 clinical trial in patients with relapsed or refractory AML, in which patients received either TUS single agent <sup>2</sup> Table of Contents or the TUS+VEN doublet, has been completed. That study delivered evidence of robust clinical activity, including multiple complete responses in R/R AML patients with various disease genotypes, and no toxicity trends that prevented advancement of TUS into the TUS+VEN+AZA triplet clinical study. The FDA granted orphan drug designation to tuspetinib for the treatment of patients with AML in October 2018. Orphan drug designation is granted by the FDA to encourage companies to develop therapies for the treatment of diseases that affect fewer than 200,000 individuals in the United States. Orphan drug status provides research and development tax credits, an opportunity to obtain grant funding, exemption from FDA application fees and other benefits. The orphan drug designation also provides us with seven additional years of marketing exclusivity in this indication. On December 3, 2024, the Company announced that the National Cancer Institute (NCI), part of the National Institutes of Health, and Aptose Biosciences Inc. have entered into a Cooperative Research and Development Agreement (â€œCRADAâ€). Under the CRADA, the NCI and Aptose will collaborate on the clinical development of Aptoseâ€™s proprietary lead clinical-stage compound tuspetinib (TUS), an inhibitor of key signaling kinases involved in myeloid malignancies, in the NCI Cancer Therapy Evaluation Program (CTEP) sponsored myeloMATCH trials employing combinations of targeted therapy for the treatment of molecularly defined acute myeloid leukemia (AML) and myelodysplastic syndromes (MDS) populations. These trials will be conducted by NCIâ€™s National Clinical Trials Network (NCTN), with the participation of the NCI Community Oncology Research Program (NCORP) in the U.S. and Canada. The myeloMATCH precision medicine trials (NCT05564390), funded by the NCI, were officially launched on May 16, 2024. myeloMATCH aims to expedite the development of tailored drug combination treatments for patients with newly diagnosed AML and MDS and to treat patients with these aggressive cancers of the blood and bone marrow from diagnosis throughout their treatment journey. **Manufacturing:** Following the Tuspetinib licensing agreement between Aptose and Hanmi on November 4, 2021 (the â€œTuspetinib Licensing Agreementâ€), Aptose received from Hanmi an existing inventory of drug product expected to support continuation of the current Phase 1/2 study. The Company and Hanmi also entered into a separate supply agreement in 2022 for additional production of new drug substance and drug product to support further clinical development. Additional batches of API and drug product have been produced by other companies during 2022 and 2023. **Program Updates at Recent Scientific Forums:** Aptose plans to initiate the tuspetinib + venetoclax + azacitidine

(TUS+VEN+AZA) triple drug combination study in newly diagnosed AML patients with 40 mg tuspetinib and then to dose escalate the tuspetinib dose to 80Â mg. Safety and activity as a single agent were demonstrated with the 40 mg dose of tuspetinib in R/R AML patients. This 40 mg dose represents one dose level below the 80 mg single agent recommended phase 2 dose (RP2D) of tuspetinib in R/R AML patients, this dose escalation approach which is the typical FDA recommended starting dose for drug combination studies. In December 2024, Aptose attended the 66th Annual American Society of Hematology (ASH) Meeting and Exposition in San Diego, California, and presented a poster entitled âœPhase 1 Safety and Efficacy of Tuspetinib Plus Venetoclax Combination Therapy in Study Participants with Relapsed or Refractory Acute Myeloid Leukemia (AML) Support Exploration of Triplet Combination Therapy of Tuspetinib Plus Venetoclax and Azacitidine for Newly Diagnosed AMLâ. Â 3 Table of Contents Key Findings and Messages included: Â Â â¢ Â TUS+VEN+AZA triplet trial is proceeding in newly diagnosed AML patients Â Â â¢ Â TUS+VEN retains activity in the difficult-to-treat prior-VEN AML population Â Â â¢ Â TUS+VEN is active in FLT3 wildtype, representing ~70% of AML patients Â Â â¢ Â TUS+VEN is well tolerated and can be safely co-administered Â Â â¢ Â TUS+VEN is active across broad populations of R/R AML Â Â â¢ Â Combination of TUS with VEN may avoid VEN resistance Â Â â¢ Â TUS+VEN+AZA triplet may establish a more effective, mutation agnostic standard of Â Â â¢ Â care for chemotherapy ineligible AML patients Highlights of the ASH poster presentation included TUS as Single Agent (n= 93 Patients) Â Â â¢ Â 60% and 42% CR/CRh with 80 mg TUS in FLT3 mutated and all-comer VEN-naÃ-ve AML Â Â â¢ Â 33% CRcÂ & 42% ORR (CR, CRp, CRh, CRi or PR) in FLT3 mutated and VEN-naÃ-ve patients Â Â â¢ Â Includes 40, 80, 120, and 160 mg TUS dose as a single agent Â Â â¢ Â Includes those who failed prior therapy with venetoclax Â Â â¢ Â Includes those with mutated or unmutated FLT3, those who failed prior-HSCT, priorFLT3i, prior-chemotherapy, prior-HMA Â Â â¢ Â TUS once daily orally as a single agent achieved CR/CRh responses at four different dose levels (40, 80, 120, and 160 mg) with no dose limiting toxicities (no DLTs) Â Â â¢ Â TUS showed a favorable safety profile with no DLTs through 160 mg per day, and no drug related discontinuations, no QTc, no differentiation syndrome, and no deaths TUS/VEN Combination Therapy (n= 79 Patients) Â Â â¢ Â 40% ORR with 80 mg TUS + 400 mg VEN in FLT3 mutated patients Â Â â¢ Â 83% (5/6) had failed prior-VEN treatment and 50% (3/6) had failed both prior-VEN and FLT3i treatment Â Â â¢ Â TUS+VEN achieved responses among diverse R/R AML with adverse mutations in VEN-naÃ-ve, prior-VEN, FLT3WT, FLT3MUT, prior-FLT3 Â Â â¢ Â TUS+VEN showed favorable safety and tolerability with no new or unexpected safety On JuneÂ 14, 2024, Aptose presented tuspetinib (TUS) clinical findings as a clinical poster presentation and preclinical findings as a e-poster at the European Hematology Association (EHA) 2024 Hybrid Congress in Madrid, Spain. Highlights of the findings include: Â Â â¢ Â Tuspetinib Monotherapy (TUS) and Tuspetinib + Venetoclax (TUS+VEN) Doublet Therapy Show Broad Clinical Activity and Strong Safety Data in relapsed or refractory (R/R) Acute Myeloid Leukemia (AML) and Differentiate TUS from other Investigational Drugs in AML Â Â â¢ Â TUS Monotherapy and TUS+VEN Doublet Therapy Active in Difficult-to-treat Genetic Subgroups, FLT3 Wildtype AML Â 4 Table of Contents Â â¢ Â TUS Shown to Target VEN Resistance Mechanisms and Retain Activity on VEN-Resistant AML Cells in Preclinical Study Â Â â¢ Â Tuspetinib + Venetoclax + Azacitidine (TUS+VEN+AZA) Triplet Trial to Treat Newly Diagnosed AML Patients; Clinical Sites Being Activated Our APTIVATE clinical trial of Tuspetinib as a monotherapy (TUS) and in combination treatment with Venetoclax (TUS+VEN) in a very ill AML patient population, yielded excellent and consistent safety findings and demonstrated clinical activity across a broad range of AML â“ including many with highly adverse genetic mutations. These findings supported advancement of Tuspetinib as an ideal third agent to add to a venetoclax and hypomethylating agent regimen for the frontline treatment of Newly Diagnosed AML patients. Conclusions from the clinical poster, entitled âœSafety and Efficacy of Tuspetinib as Monotherapy and Combined with Venetoclax in a Phase 1/2 Trial of Patients with Relapsed or Refractory (R/R) Acute Myeloid Leukemiaâ include: Â Â â¢ Â Extensive dose exploration was performed with TUS (93 patients) and TUS+VEN (79 patients) in highly treatment experienced R/R AML patients (prior VEN, FLT3i, HMA, chemotherapy, HSCT) Â Â â¢ Â TUS monotherapy achieved complete remissions at 40, 80, 120, and 160 mg with no DLT, achieved a 42% CRc and 50% ORR in VEN naÃ-ve and FLT3-mutation harboring patients, and achieved responses in patients harboring highly adverse genetics (TP53MUT, RASMUT, other) Â Â â¢ Â TUS+VEN Doublet remained safe and well tolerated (40mg TUS + 400mg VEN | 80mg TUS + 400mg VEN), and achieved bone marrow blast reductions and responses among diverse R/R AML patients with adverse mutations and prior failure of VEN Â Â â¢ Â TUS targets known VEN resistance mechanisms in vitro and is clinically active in both FLT3MUTÂ & FLT3WT R/R AML populations even after prior VEN exposure. The greatest unmet medical need in AML is for an improved frontline therapy in Newly Diagnosed AML patients. Tuspetinib is now being developed as the TUS+VEN+HMA to establish a new standard of care for the treatment of these Newly Diagnosed AML patients that may increase response rates, extend survival, safely improve quality of life, treat a broad spectrum of genetically unique AML patient populations, and blunt the development of resistance to Venetoclax. Â Â â¢ Â Progress has been made with VEN+HMA in 1L therapy but 1/3 do not respond and median OS <15Â months with <25% alive at 3-years. Â Â â¢ Â Response rates and OS need improvement, especially in adverse genetic subgroups Â Â â¢ Â Emergence of VEN resistance via RAS/MAPK, TP53, and FLT3 clonal expansion, among other mechanisms, leads to relapse or refractory (R/R) AML that does not respond well to subsequent salvage therapies in R/R setting. Â Â â¢ Â A 3rd agent is needed to boost responses with VEN+HMA standard of care therapy. Â Â â¢ Â We believe Tuspetinib is the ideal 3rd Agent for Addition to VEN+AZA to Treat Newly Diagnosed AML Â Â â¢ Â TUS has excellent safety alone and in combination with VEN when co-administered Â Â â¢ Â TUS has broad activity across genetic subgroups including TP53, RAS/MAPK, & FLT3 mutants Â Â â¢ Â TUS mechanism may minimize drug resistance to VEN via inhibition of key AML kinases Â Â â¢ Â Preliminary PK data suggest no clinically meaningful interaction between TUS and VEN requiring dose modification for co-administration. Â 5 Table of Contents In addition to the Tuspetinib clinical poster, a separate preclinical abstract was published as an e-poster publication at EHA, entitled âœTuspetinib Retains Nanomolar Potency Against AML Cells Engineered to Express the NRAS G12D Mutation or Selected for Resistance to Venetoclaxâ™. The study demonstrated that TUS targets known venetoclax (VEN) resistance mechanisms, retaining nanomolar potency against AML cells engineered to express the NRAS-G12D mutation or selected for resistance to VEN, and in combination with VEN, could prevent emergence of resistance to both agents. TUS resistant cells showed hypersensitivity to VEN such that treatment with both drugs could also interfere with the emergence of TUS resistance. On MarchÂ 26, 2024, Aptose announced that more than 170 patients to date received TUS alone or in combination with the BCL-2 inhibitor venetoclax (VEN) during the Phase 1/2 clinical program in the very ill relapsed or refractory (R/R) AML patient population. At the single agent 80 mg dose, TUS achieved a favorable safety profile and an impressive response rate among patients who were naive to VEN. The

safety profile of TUS remained favorable when TUS was combined with VEN in R/R AML patients, and responses were achieved in both patients naive to VEN and those who failed prior therapy with VEN. TUS avoids many typical toxicities observed with other agents and achieves broad activity across AML patients with a diversity of adverse genetic abnormalities. On December 9, 2023, Aptose featured tuspetinib in an oral presentation at the 65th American Society of Hematology (ASH) Annual Meeting and Exposition and announced that a growing body of clinical data for Aptose's lead compound tuspetinib, demonstrates significant benefit as a single agent and in combination with venetoclax in patients with R/R AML in the ongoing APTIVATE Phase 1/2 study. Data were presented in an oral presentation by lead investigator Naval G. Daver, M.D., Professor, Director Leukemia Research Alliance Program, Department of Leukemia, The University of Texas MD Anderson Cancer Center, Houston, TX. Dr. Daver reported data from more than 100 relapsed/refractory patients from multiple international clinical sites, who had failed prior therapy and then were treated with TUS as a single agent or TUS+VEN. Both TUS and TUS+VEN delivered multiple composite complete remissions (CRc) in this very ill AML population, while maintaining a favorable safety profile across all treated patients. The data demonstrated tuspetinib is active and well tolerated in one of the most challenging and heterogeneous disease settings in oncology – relapsed and refractory AML. Tuspetinib demonstrated broad activity, including activity in patients with FLT3 wild-type AML (accounting for more than 70% of the AML population), FLT3 mutated AML, NPM1 mutated AML, as well as in patients with mutations historically associated with resistance to targeted therapy. Most notably, TUS targets VEN resistance mechanisms, enabling TUS+VEN uniquely to treat the very ill prior-VEN AML population, including both FLT3 mutant and FLT3 wildtype disease. From a broader perspective, the growing body of antileukemic activity, and continued favorable safety profile, support advancement of tuspetinib in a TUS+VEN+HMA triplet for the treatment of frontline newly diagnosed AML patients. Dr. Daver also pointed out that while patients on the TUS+VEN therapy are early in their treatment cycles, most achieving a response remained on treatment and that responses have begun to mature as dosing continues. Highlights of Dr. Daver's ASH oral presentation include: As a single agent at therapeutic doses of 80-160 mg in 68 evaluable patients, TUS was more active in VEN-naive patients, with an overall CRc rate of 29% (8/28). This included a 42% CRc rate (5/12) in FLT3-mutated patients and a 19% CRc rate (3/16) in FLT3-unmutated, or wildtype, AML patients. Responses and blood counts improved with continuous dosing, many patients bridged to an allogeneic stem cell transplant (HSCT), durability was observed when HSCT was not performed, and 80 mg was selected as the RP2D. Overall, tuspetinib showed a favorable safety profile with only mild adverse events (AES) and no dose-limiting toxicities (DLTs) up to 160 mg per day, and no drug discontinuations from drug-related toxicity. In the TUS+VEN doublet study, 49 patients were dosed with 80 mg of tuspetinib and 200 mg of venetoclax, with 36 evaluable (and 13 patients too early to assess). Patients were heavily exposed to Table of Contents Prior-VEN and Prior-FLT3 inhibitor treatment. TUS+VEN was active in both VEN-naive and prior Prior-VEN R/R AML patients. TUS demonstrated compelling composite complete remission (CRc) rates. Among all evaluable patients, TUS+VEN demonstrated a CRc rate of 25% (9/36); 43% (3/7) in VEN-naive patients, and 21% (6/29) in Prior-VEN patients. Among FLT3 wildtype patients, TUS+VEN demonstrated an overall CRc rate of 20% (5/25); 33% (2/6) in VEN-naive patients, and 16% (3/19) in Prior-VEN patients. Among FLT3 mutant patients, TUS+VEN demonstrated an overall CRc rate of 36% (4/11); a complete response in a VEN-naive patient (1/1); a 30% (3/10) in Prior-VEN patients; and 44% (4/9) in patients treated prior with a FLT3 inhibitor. On October 29, 2023, Aptose presented two posters related to the clinical and preclinical activity of tuspetinib at the European School of Haematology 6th International Conference: Acute Myeloid Leukemia Molecular and Translational: Advances in Biology and Treatment, held October 29-31, 2023, in Estoril, Portugal. Clinical findings included 1) data from the APTO-TUS-HV01 clinical trial (the Food Effect Study) evaluating the pharmacokinetic (PK) properties of tuspetinib in healthy human volunteers in which tuspetinib was administered with or without food, and 2) from an international Phase 1/2 study of tuspetinib as a single agent (TUS) and in combination with venetoclax in patients with R/R AML from across clinical centers in the United States, South Korea, Spain, Australia and other sites. Data from the Food Effect Study in healthy human volunteers demonstrated tuspetinib can be administered with or without food and foresee no clinically meaningful difference in exposure. This is an important finding for patient convenience, as venetoclax is dosed with food and tuspetinib can now be co-administered with venetoclax rather than in staggered dosing. Findings from the Phase 1/2 clinical trial demonstrated tuspetinib as a single agent was well-tolerated and highly active among R/R AML patients with a diversity of adverse genotypes and delivered a 42% CR/CRh cross-evaluable venetoclax (VEN) naive patients at the 80mg daily RP2D. The TUS+VEN doublet has been well tolerated in the APTIVATE international Phase 1/2 expansion trial in R/R AML patients and achieved multiple responses in patients who previously failed venetoclax (Prior-VEN failure AML), including Prior-VEN failure patients who also previously failed FLT3 inhibitors, all of whom represent emerging populations of high unmet medical need. Notably, tuspetinib targets venetoclax resistance mechanisms that may re-sensitize Prior-VEN failure patients to venetoclax. Separate from the clinical studies, the preclinical study (entitled: Tuspetinib Oral Myeloid Kinase Inhibitor Creates Synthetic Lethal Vulnerability to Venetoclax) presented by Aptose during the ESH Conference investigated the effects of tuspetinib on key elements of the phosphokinome and apoptotic proteome in both parental and TUS-resistant AML cells. In parental cells, tuspetinib inhibits key oncogenic signaling pathways and shifts the balance of pro- and anti-apoptotic proteins in favor of apoptosis, suggesting that it may generate vulnerability to venetoclax. In addition, acquired resistance in the AML cells to tuspetinib generated a synthetic lethal vulnerability to venetoclax of unusually high magnitude. Concurrent administration of TUS+VEN therefore may discourage the emergence of resistance to tuspetinib during treatment. In conjunction with poster presentations at the ESH Conference, on October 30, 2023, Aptose held a Clinical Update and KOL Data Review of AML Drug Tuspetinib that was webcast and featured Dr. Naval Daver, MD, Professor, Director Leukemia Research Alliance Program, Department of Leukemia, The University of Texas MD Anderson Cancer Center, Houston, Texas. Dr. Daver is the lead investigator on Aptose's APTIVATE trial and is recognized for significant achievements in the development of novel AML treatments, including several combination therapies. Aptose presented data in 49 patients who received the TUS+VEN doublet, showing an overall response rate (ORR) of 48% among all patients that had achieved an evaluable stage, as well as a 44% ORR among Prior-VEN failure AML patients, including FLT3-unmutated (wildtype) patients (43% ORR) and FLT3-mutated patients (60% ORR), some of whom also had failed prior therapy with FLT3 inhibitors. The TUS+VEN doublet was well tolerated with no unexpected safety signals. The TUS+VEN doublet may serve the Prior-VEN failure R/R AML patients that represent a rapidly growing population that is highly refractory to any salvage therapy. The compelling data with the TUS+VEN doublet in R/R AML patients suggest a TUS+VEN+HMA triplet may also serve the needs of frontline (1L) newly diagnosed AML patients. Table of Contents Concurrent with the European Hematology Association (EHA) Annual

Congress held June 8-11, 2023, Aptose held an interim clinical update webcast on June 10, 2023, to present highlights from the ongoing clinical development of tuspetinib. Aptose reported completion of the tuspetinib dose escalation and dose exploration Phase 1/2 trial in 77 R/R AML patients, tuspetinib demonstrated a favorable safety profile, and tuspetinib delivered monotherapy responses across four dose levels with no dose-limiting toxicity in mutationally diverse and difficult to treat R/R AML populations, including patients with highly adverse mutations that typically do not respond to monotherapy or combination therapy: TP53-mutated patients with a CR/CRh = 20% and RAS-mutated patients with a CR/CRh = 22%. Aptose also reported completion of a successful End of Phase 1 Meeting with the US FDA for tuspetinib, that a monotherapy RP2D was selected as 80mg daily, and that all development paths remain open, including the single arm accelerated path. Following completion of the dose escalation and dose exploration phases of the Phase 1/2 clinical program, Aptose focused attention on the tuspetinib APTIVATE expansion trial. The APTIVATE trial is designed to identify patient populations sensitive to tuspetinib monotherapy that may serve as development paths for single arm accelerated approval and to use the TUS+VEN doublet in R/R AML patients and identify patient populations of unmet need that are sensitive to the TUS+VEN doublet and can serve as development paths for accelerated and full approvals. We reported that patient enrollment in the APTIVATE expansion trial has been brisk and preliminary CR activity had already been reported in patients receiving the TUS+VEN doublet who previously failed therapy with venetoclax. During the interim clinical update webcast Aptose also reviewed clinical findings with the new G3 formulation of LUX. Aptose disclosed that continuous dosing with 50mg of the G3 formulation achieves roughly an equivalent pharmacokinetic profile as 900mg original G1 formulation, and that dose escalation with the G3 formulation was anticipated. On March 23, 2023, Aptose announced the APTIVATE Phase 1/2 expansion trial with tuspetinib had been initiated and already had treated several R/R AML patients in the monotherapy arm, and that patient enrollment had been initiated in the doublet combination treatment arm of the APTIVATE trial with the TUS+VEN doublet. Since then, patients have continued to enroll and receive tuspetinib on the monotherapy arm. Plus, enrollment and dosing of patients on the TUS+VEN doublet arm have been brisk. Clinical investigator interest for tuspetinib is evident, and early signs of antileukemic activity during the APTIVATE trial have fueled the level of excitement for the trial. Clinical responses to monotherapy with tuspetinib have been observed in a broad range of mutationally defined populations, including those with mutated forms of NPM1, MLL, TP53, DNMT3A, RUNX1, wild-type FLT3, ITD or TKD mutated FLT3, various splicing factors, and other genes. In the March 23, 2023, announcement, Aptose also highlighted an unexpected observation of a 29% CR/CRh response rate with tuspetinib monotherapy in R/R AML patients having mutations in the RAS gene or other genes in the RAS pathway. Responses in RAS-mutated patients are important because the RAS pathway is often mutated in response to therapy by other agents as the AML cells mutate toward resistance to those other agents. Collectively, these observations of broad clinical activity of tuspetinib, along with its favorable safety profile, position tuspetinib for potential accelerated development paths, as well as for doublet, triplet and maintenance therapy indications. On January 30, 2023, Aptose announced dosing of patients in the APTIVATE Phase 1/2 clinical trial of tuspetinib, and that another clinical response has been achieved by a R/R AML patient receiving 40 mg tuspetinib once daily orally in the original dose exploration trial, the second response at the recently launched low-dose 40 mg cohort. In addition, Aptose elucidated a rationale for the superior safety profile of tuspetinib. While several kinase inhibitors require high exposures that exert near complete suppression of a single target to elicit responses, those agents often cause additional toxicity because they also cause extensive inhibition of that target in normal cells. In contrast, tuspetinib simultaneously suppresses a small suite of kinase-driven pathways critical for leukemogenesis. Consequently, tuspetinib achieves clinical responses at lower exposures with less overall suppression of each pathway, thereby avoiding many of the toxicities observed with competing agents. 8 Table of Contents  
Luxepatinib Given current funding and our prioritization of tuspetinib, we have decided to pause funding the development of LUX. For further information about the historical development of LUX, please refer to the Company's Annual Report on Form 10-K for the year ended December 31, 2023. **Indication and Clinical Trials:** LUX is an oral, highly potent kinase inhibitor that selectively targets defined kinases operative in myeloid and lymphoid hematologic malignancies. This small molecule has been evaluated in a Phase 1a/b study for the treatment of patients having R/R B-cell leukemias and lymphomas and in a Phase 1a/b study for the treatment of patients with R/R AML or hr-MDS. These clinical studies demonstrated tumor shrinkage among B-cell cancer patients, including a CR in a diffuse large B-cell lymphoma patient that was determined via biopsy analysis at the end of Cycle 22 with 900mg BID dosing of the original G1 formulation. Likewise, an MRD-negative CR in one R/R AML patient occurred with 450mg BID dosing of the original G1 formulation. Because absorption of the original G1 formulation hampered effectiveness of LUX, a new G3 formulation was developed. Enrollment of patients in the B-cell malignancy trial and the AML trial have been completed, and clinical evaluation of the G3 formulation has been completed. The G3 formulation was determined to deliver superior plasma exposure levels relative to the original G1 formulation, and any future trial with LUX should use the G3 formulation. Regarding potential next steps with LUX, recent therapeutic strategies with CLL B-cell cancer patients typically involve therapy with certain BTK inhibitors in combination with venetoclax (VEN). Drug resistance has begun to emerge in a molecularly defined subgroup of these patients, and the drug resistance has been correlated with mutations in the FLT3 receptor. Although FLT3 mutations are typically associated with AML patients, these R/R CLL prior-BTKi/Prior-VEN/FLT3-mutated patients are difficult to treat and represent a potential commercial market of approximately \$200 million by 2039. The Dana Farber Cancer Institute identified this emerging patient population and has requested LUX be tested as part of an investigator sponsored trial in combination with VEN in the R/R CLL prior-BTKi/Prior-VEN/FLT3-mutated patients. Non-clinical studies are underway to position LUX+VEN for the treatment of these patients, and efforts are underway to identify sources of capital to support such a trial to develop LUX for a molecularly defined CLL subpopulation with a high unmet medical need. During the fourth quarter of 2022, we completed dosing of the first, second, third, fourth, fifth, and sixth dose levels (150 mg, 300 mg, 450 mg, 600 mg, 750 mg, and 900 mg BID, respectively) of the original G1 formulation in the Phase 1 a/b trial in patients with B-cell leukemias and lymphomas. Among enrolled patients at that time with an array of B-cell malignancies, we had observed inhibition of phospho-BTK and  $\alpha$ -eon-target lymphocytosis in patients with classic CLL and modest tumor reductions in patients with different tumor types, indicating target engagement and pharmacologic activity of LUX. During the ASH Annual Meeting in December 2022, we announced that a CR was achieved with a diffuse large B-cell lymphoma patient at the 900 mg dose level of the original G1 formulation, demonstrating LUX is active in certain B-cell malignancies. As part of the ongoing dose escalation of the current formulation of LUX in patients with B-cell malignancies and AML, Aptose has made significant progress in the development of a G3 formulation that could reduce total API administered, reduce pill burden, improve absorption, and increase exposure. Aptose began testing this new G3 formulation of LUX as a single dose with 72-hour pharmacokinetics ( $\text{PK}$ ) analysis in the ongoing studies in

patients with hematologic malignancies in the first half of fiscal 2022. On March 22, 2022, we announced that the preliminary PK findings with the G3 formulation were encouraging, and the exploration of the G3 formulation was ongoing. Exploration of the PK properties of single dose administration of 10mg, 20mg, 50mg, 100mg, and 200mg dose levels with the G3 formulation have been completed. On September 12, 2022 we announced that initial PK modeling studies predict up to an 18-fold improvement in plasma steady-state exposure by the G3 formulation. 9 Table of Contents relative to the original formulation, and that Aptose plans to move forward with the development of the G3 formulation in AML patients under continuous dosing conditions to determine if G3 can deliver desired exposures and clinical responses while continuing to demonstrate a favorable safety profile. On March 23, 2023, Aptose announced that during the fourth quarter of 2022, continuous dosing had been initiated with the new G3 formulation of LUX in the ongoing Phase 1 a/b clinical trial in patients with R/R AML. Initial PK data from continuous dosing of the 50 mg G3 formulation show plasma exposure levels roughly equivalent to the 900mg dose (18-fold greater dose) of the original G1 formulation. Aptose will be reviewing all data with the data monitoring committee and will make the determination to escalate and at what dose. Concurrent with the EHA Annual Congress held June 8-11, 2023, Aptose held an interim clinical update webcast on June 10, 2023. During the update, Aptose reviewed clinical findings with the new G3 formulation of LUX. Aptose confirmed that continuous dosing with 50mg of the G3 formulation in multiple patients achieves roughly an equivalent pharmacokinetic profile as 900mg original G1 formulation, and that dose escalation with the G3 formulation was anticipated. A non-clinical article was published during the first quarter of 2023 in PLoS One, a highly respected online scientific publication. Titled, "LUX interferes with LYN-mediated activation of SYK and modulates BCR signaling in lymphoma," the article helps elucidate the mechanism by which LUX suppresses the B-cell receptor pathway in a manner distinct from the BTK inhibitor ibrutinib. LUX was more effective than ibrutinib at reducing both steady state and anti-IgM-induced phosphorylation of the LYN and SYK kinases upstream of BTK where ibrutinib has little or no effect, suggesting LUX can play a role in B-cell malignancies and inflammatory diseases distinct from ibrutinib and other BTK inhibitors. In a separate line of non-clinical research with LUX, a group from the University of Texas MD Anderson Cancer Center led by Dr. Michael Andreeff published an article in June 2023 in the journal Haematologica. The article was entitled "Concomitant targeting of FLT3 and BTK overcomes FLT3 inhibitor resistance in acute myeloid leukemia through the inhibition of autophagy," and the findings highlight the potential for co-targeting of FLT3/BTK/aurora kinases by LUX to overcome resistance to certain FLT3 targeted therapies in AML, which is urgently needed. On March 26, 2024, Aptose announced that during 2023 and early 2024, clinical evaluation of the new G3 formulation of LUX was completed. The G3 formulation was tested in a single dose bioavailability study in 20 patients, including both B-cell cancer and AML patients, and across 5 dose levels (10mg to 200mg). The G3 formulation then was evaluated in R/R AML patients with continuous dosing using two different dose levels (50mg BID and 200mg BID) in a total of 11 patients. Data demonstrated the G3 formulation dosed at 200mg twice daily can achieve 2-3uM steady state plasma levels, with approximately 10-fold better absorption and better tolerability than the original G1 formulation. Thus, the G3 formulation achieved the desired plasma exposure benchmark and can serve as the formulation of choice for future studies with LUX. Aptose is exploring alternative development paths and collaborations to advance LUX as a single agent or in combination with VEN to treat defined R/R patient populations of high unmet need. Other corporate matters Nasdaq Nasdaq Listing Rule 5550(b)(1) On April 2, 2024, the Company received a letter (the "Notification Letter") from Nasdaq stating that the Company was not in compliance with Nasdaq Listing Rule 5550(b)(1) (the "Rule") because the stockholders' equity of the Company as of December 31, 2023, as reported in the Company's Annual Report on Form 10-K, was below the minimum requirement of \$2.5 million (the "Stockholders' Equity Requirement"). The Company's 10 Table of Contents stockholder's equity as of June 30, 2024 was negative \$2.2 million. The Company submitted a plan to regain compliance on May 17, 2024, and received an extension to September 30, 2024 to regain compliance. As of September 30, 2024, the Company had not gained compliance with the requirement. Accordingly, on October 1, 2024, the Company received a staff determination letter from the Listing Department stating that the Company did not meet the terms of the extension because it did not complete its proposed financing initiatives to regain compliance. The Company requested an appeal and hearing of the Listing Department's determination, which automatically stayed Nasdaq's delisting of the Company's common shares pending the appeal panel's decision. On October 8, 2024, the Company requested an appeal and hearing; such hearing was scheduled for November 21, 2024. The hearing request automatically stayed Nasdaq's delisting of the Company's Common Shares pending the panel's decision. On December 19, 2024, the Company announced that the panel granted the Company's request for an extension to evidence compliance with all applicable criteria for continued listing on The Nasdaq Stock Market. On or before March 31, 2025, the Company will be required to demonstrate compliance with NASDAQ Listing Rule 5550(b)(1) requiring the Company to have a minimum of \$2.5 million in shareholders' equity (the "Equity Rule"). Nasdaq Listing Rule 5550(a)(2) On July 16, 2024, the Company received a deficiency letter (the "Deficiency Letter") from the Nasdaq, notifying the Company that, for the prior thirty consecutive business days, the closing bid price for the Company's common shares was below the minimum \$1.00 per share required for continued listing on The Nasdaq Capital Market pursuant to Nasdaq Listing Rule 5550(a)(2) (the "Minimum Bid Price Requirement"). The Deficiency Letter had no immediate effect on the listing of the Company's common shares, and its common shares will continue to trade on The Nasdaq Capital Market and the Toronto Stock Exchange ("TSX") under the symbol "APS." The Company's listing on the TSX is independent and will not be affected by the Company's Nasdaq listing status. The Company was given 180 calendar days, or until January 13, 2025, to regain compliance with the Minimum Bid Price Requirement. If at any time before January 13, 2025, the bid price of the Company's common shares closed at \$1.00 per share or more for a minimum of 10 consecutive business days, Nasdaq would have provided written confirmation that the Company regained compliance. If the Company did not regain compliance with the Minimum Bid Price Requirement by January 13, 2025, the Company may, at the discretion of Nasdaq, be afforded a second 180 calendar day period to regain compliance. To qualify for the extension, the Company was required to meet the continued listing requirement for market value of publicly held shares and all other initial listing standards for The Nasdaq Capital Market, with the exception of the bid price requirement. The Company intends to monitor the closing bid price of its common shares and may, if appropriate, consider available options, including the possibility of seeking shareholder approval of a reverse stock split, to regain compliance with the Minimum Bid Price Requirement. However, there can be no assurance that the Company will be able to regain compliance with the Minimum Bid Price Requirement or will otherwise be in compliance with other Nasdaq Listing Rules. On August 1, 2024, the Company filed a preliminary S-1 prospectus to raise financing as part of its Compliance Plan, in addition to funds raised in the June 2024 Registered Direct Offering. On August 2, 2024, the Company

implemented a reduction in force with an approximate \$1.2 million per annum anticipated decrease in payroll costs. On November 25, 2024, the Company closed a reasonable best efforts public offering with participation from the CEO and existing and new healthcare focused investors for the purchase and sale of 40,000,000 common shares at a price of \$0.20 per share and warrants to purchase up to 20,000,000 common shares (the "November 2024 Offering"). The warrants have an exercise price of \$0.25 per share, are exercisable immediately and will expire five years from the issuance date. The Company received aggregate gross proceeds of \$8 million, ¶ 11 Table of Contents before deducting placement agent fees and other offering expenses. The underwriter received 1,600,000 warrants, each at an exercise price of \$0.275. The underwriter warrants will expire five years from the closing date. On January 14, 2025, the Company received an additional staff determination letter from the Nasdaq Listing Qualifications Department of The Nasdaq Stock Market LLC notifying the Company that, for the last thirty (30) consecutive business days, the closing bid price for the Company's common shares have been below the minimum \$1.00 per share required for continued listing on The Nasdaq Capital Market pursuant to Nasdaq Listing Rule 5550(a)(2) (the "Minimum Bid Price Requirement"). The Company is required to present its plan of compliance to the hearings panel. The Company has been given until March 31, 2025, to regain compliance with the Minimum Bid Price Requirement. On January 27, 2025, the Company held a Special Meeting of the shareholders of the Corporation (the "Meeting"). At the Meeting, shareholders voted in favor of an amendment to the Corporation's Articles of Incorporation, as amended, to, at the discretion of the board of directors (the "Board"), effect a reverse stock split at a ratio between 10-to-1 and 30-to-1, with the ratio within such range to be determined at the discretion of the Board. Facility Agreement On August 27, 2024, the Company entered into a facility agreement (the "Facility Agreement") among the Company and Hanmi Pharmaceutical Co., Ltd. (the "Lender") pursuant to which the Lender agreed to lend to the Company up to \$10,000,000 (the "Loan"). The Loan is secured and repayable by the Company in full on January 31, 2027 (the "Maturity Date"), and may be prepaid without penalty at any time. The Loan bears interest at six percent per annum, payable in arrears every three months beginning on September 30, 2024 until the Maturity Date. If the Company and Lender amend the license agreement dated November 4, 2021 between Lender and the Company, or enter into a collaboration agreement or (the "Future Collaboration Agreement"), the Loan principal and accrued and unpaid interest under the Facility Agreement (the "Converted Loan Amount") will automatically be converted to the Lender's prepayment of future milestone obligations under the Future Collaboration Agreement. Upon conversion, the Converted Loan Amount will be deemed fully paid and satisfied under the Facility Agreement, and the future milestone obligations by the Lender under the Future Collaboration Agreement will be deemed prepaid by the Lender up to the amount of the Converted Loan Amount. At-The-Market Facility On February 3, 2025, the Company entered into a sales agreement pursuant to which the Company may from time to time, sell common shares having an aggregate offering value of up to \$1 million through A.G.P./Alliance Global Partners ("AGP") on Nasdaq (the "2025 ATM Facility"). Costs associated with the proceeds consist of 3% cash commission. The Keystone Capital Transaction On February 7, 2025, the Company and Keystone entered into the Purchase Agreement, which provides that subject to the terms and conditions set forth therein, the Company may sell to Keystone up to the greater of (i) \$25 million of the Common Shares and (ii) the Exchange Cap (as defined below) (subject to certain exceptions provided in the Purchase Agreement) (the "Total Commitment"), from time to time during the two year term of the Purchase Agreement. Additionally, on February 7, 2025, the Company and Keystone entered into a registration rights agreement (the "Registration Rights Agreement"), pursuant to which the Company agreed to file a registration statement with the SEC covering the resale of Common Shares that are issued to Keystone under the Purchase Agreement. ¶ 12 Table of Contents Under the terms and subject to the satisfaction of the conditions set forth in the Purchase Agreement, the Company has the right, but not the obligation, to sell to Keystone, and Keystone is obligated to purchase, up to the Total Commitment. Such sales of Common Shares by the Company, if any, will be subject to certain limitations as set forth in the Purchase Agreement, and may occur from time to time, at the Company's sole discretion, over a 24-month period commencing on the date that all of the conditions to the Company's right to commence such sales are satisfied, including that the registration statement referred to above is declared effective by the SEC. Such date is referred to hereinafter as the "Commencement Date". Keystone has no right to require the Company to sell any Common Shares to Keystone, but Keystone is obligated to make purchases as the Company directs, subject to satisfaction of the conditions set forth in the Purchase Agreement. Upon entering into the Purchase Agreement, the Company agreed to issue to Keystone an aggregate of 240,604 Common Shares (the "Commitment Shares") as consideration for Keystone's commitment to purchase Common Shares upon the Company's direction under the Purchase Agreement. The Company will issue 72,181 Common Shares, or 30% of the Commitment Shares, on the Commencement Date (the "Initial Commitment Shares"). An additional 72,181 Common Shares, or 30% of the Commitment Shares, shall be issued to Keystone 90 days following the Commencement Date (the "First Back-End Commitment Shares"). The remaining 96,242 Common Shares, or 40% of the Commitment Shares, shall be issued to Keystone 180 days following the Commencement Date (the "Second Back-End Commitment Shares"), together with the First Back-End Commitment Shares, the "Back-End Commitment Shares". The Company also agreed to pay Keystone up to \$25,000 for its reasonable expenses under the Purchase Agreement. Under the Purchase Agreement, the Company may, at its discretion, from time to time from and after the Commencement Date, direct Keystone to purchase (a "Fixed Purchase") up to 3,333 Common Shares on any trading day on which the closing sale price of the Common Shares is not below \$0.05 per Common Share on Nasdaq; provided, however that, Keystone's committed obligation under any single Fixed Purchase shall not exceed \$50,000. In addition to Fixed Purchases, and provided that the Company has directed Keystone to purchase the maximum allowable amount of 50,000 Common Shares in a Fixed Purchase, the Company also may, at its discretion, from time to time from and after the Commencement Date, direct Keystone to purchase additional Common Shares on the trading day immediately following the purchase date for such Fixed Purchase (each, a "VWAP Purchase") and, under certain circumstances set forth in the Purchase Agreement, direct Keystone to purchase additional Common Shares on the same trading day as such VWAP Purchase (each, an "Additional VWAP Purchase"), in each case upon the terms and subject to the conditions set forth in the Purchase Agreement. Hereinafter the Fixed Purchase, the VWAP Purchase and the Additional VWAP Purchase are collectively referred to as a "Purchase". Under applicable rules of Nasdaq, in no event may the Company issue or sell to Keystone under the Purchase Agreement more than 12,030,218 Common Shares (including the Commitment Shares), which number of Common Shares is equal to 19.99% of the Common Shares outstanding immediately prior to the execution of the Purchase Agreement (the "Exchange Cap"), unless (i) the Company first obtains stockholder approval to issue Common Shares in excess of the Exchange Cap in accordance with applicable Nasdaq listing rules, or (ii) at the time we have issued Common Shares equal to the Exchange Cap and at all times

thereafter, the average price per Common Share for all Common Shares sold by us to Keystone under the Purchase Agreement equals or exceeds \$0.05 per Common Share, such that the Exchange Cap limitation would no longer apply to issuances and sales of Common Shares by us to Keystone under the Purchase Agreement under applicable Nasdaq listing rules. The Purchase Agreement also prohibits the Company from directing Keystone to purchase any Common Shares if those Common Shares, when aggregated with all other Common Shares then beneficially owned by Keystone and its affiliates, would result in Keystone having beneficial ownership of more than 4.99% of the **13** Table of Contents outstanding Common Shares or if such Common Shares proposed to be issued and sold would materially affect control of the company pursuant to the rules of the TSX. The net proceeds under the Purchase Agreement to the Company will depend on the frequency of sales and the number of Common Shares sold to Keystone and prices at which the Company sells Common Shares to Keystone. The Company expects that any net proceeds received by the Company from such sales to Keystone will be used for working capital and general corporate purposes. Management of the Company believes that it is in the Company's best interests to have the flexibility to sell Common Shares pursuant to the Purchase Agreement, subject to market conditions. Corporate Information Aptose is a publicly traded company governed by the Canada Business Corporations Act ("CBCA"). Our headquarters are located at 66 Wellington Street West Suite 5300, TD Bank Tower, Box 48, Toronto ON M5K 1E6, and our executive offices are located at 12770 High Bluff Drive, Suite 120, San Diego, CA 92130 (telephone: 858-926-2730). We file annual, quarterly, current reports, proxy statements and other information with the SEC. The SEC maintains an Internet site that contains our public filings and other information regarding the Company, at [www.sec.gov](http://www.sec.gov). We make these reports available free of charge at our website <http://www.aptose.com> (under the "Investors" "Financial Information" caption). We are also a reporting issuer under the securities laws of every province of Canada. **14** Table of Contents The Offering This prospectus relates to the resale by the Selling Shareholder identified in this prospectus of up to 12,030,218 Common Shares. All of the Common Shares, if and when sold, will be sold by the Selling Shareholder. The Selling Shareholder may sell the Common Shares from time to time at market prices prevailing at the time of sale, at prices related to the prevailing market price, or at negotiated prices. We will not receive any proceeds from the sale of Shares by the Selling Shareholder. **1** Issuer Aptose Biosciences Inc. **2** Common Shares offered by the Selling Stockholder Up to 12,030,218 Common Shares, consisting of: **3** Up to 11,789,614 Common Shares that we may sell to the Selling Shareholder, from time to time at our sole discretion, pursuant to the Purchase Agreement, described below; and **4** 240,604 Common Shares issued or issuable to the Selling Shareholder as consideration for its commitment to purchase Common Shares under the Purchase Agreement. **5** Common Shares outstanding prior to this offering 60,181,183 Common Shares **6** Common Shares outstanding immediately after this offering 72,211,401 Common Shares, assuming the sale of 168,423 Common Shares to Keystone and issuance of the Back-End Commitment Shares. The actual number of Common Shares issued will vary depending on the sales prices under this offering, but will not be greater than an aggregate of 12,030,218 Common Shares (inclusive of the Commitment Shares and other Common Shares issued in connection with the Purchase Agreement), representing 19.99% of the Common Shares outstanding on the date of the Purchase Agreement, in accordance with Nasdaq rules, unless as otherwise set forth herein. **7** Stock symbol Our Common Shares are listed on Nasdaq under the symbol "APTO" and on the TSX under the symbol "APS". **8** Use of proceeds The Selling Shareholder will receive all of the proceeds from the sale of the Common Shares offered for sale by it under this prospectus. We will not receive proceeds from the sale of the Common Shares by the Selling Shareholder through this prospectus. However, we may receive up to \$25 million in gross proceeds from the sale of our Common Shares to the Selling Shareholder under the Purchase Agreement. **9** We did not receive any cash proceeds from the issuance of the Commitment Shares to the Selling Shareholder under the Purchase Agreement. We intend to use any proceeds from the Selling Shareholder that we receive under the Purchase Agreement for working capital and general corporate purposes. See "Use of Proceeds" on page 20 for more information. **10** Table of Contents Risk factors Investing in our securities involves a high degree of risk. As an investor you should be prepared to lose your entire investment See "Risk Factors" beginning on page 17. The number of common shares to be outstanding prior to and after this offering is based on 60,181,183 common shares outstanding as of January 30, 2025 and excludes: **11** 1,178,425 stock options outstanding as of January 30, 2025, at a weighted average exercise price of \$38.84 per common share; and **12** 387,930 common shares that have been reserved for issuance in connection with future grants under our security-based compensation plans as of January 30, 2025. Unless otherwise indicated, all information contained in this prospectus assumes no exercise of the outstanding options or warrants described above. **13** Table of Contents RISK FACTORS You should carefully consider the following risk factors in addition to other information in this prospectus before purchasing our Common Shares. The risks and uncertainties described below are those that we currently deem to be material and that we believe are specific to our company, our industry and this offering. These risks and uncertainties are not the only ones facing us. Additional risks of which we are not presently aware or that we currently believe are immaterial may also harm our business and results of operations. The trading price of our Common Shares could decline due to the occurrence of any of these risks, and investors could lose all or part of their investment. In evaluating the Company, its business and any investment in the Company, readers should carefully consider the following factors, together with the additional risk factors incorporated by reference from Item 1A of the Company's Annual Report on Form 10-K (as amended) as filed with the SEC on March 26, 2024 (see "Incorporation of Certain Information by Reference"). Risks Related to this Offering There is substantial doubt about our ability to continue as a going concern. We will need to raise additional funding, which may not be available on acceptable terms, if at all, to continue as a going concern. Failure to obtain capital when needed may require us to curtail or cease our operations. Our consolidated financial statements as of December 31, 2023, were prepared under the assumption that we will continue as a going concern. We expect operating losses and negative cash flows to continue for the foreseeable future. We estimate that our existing cash resources will not be sufficient to fund our operations for at least 12 months from the issuance date of the financial statements included elsewhere in this prospectus. Our ability to continue as a going concern will depend on our ability to obtain additional equity or debt financing, attain further operating efficiencies, reduce or contain expenditures and increase revenues. Based on these factors, management determined that there is substantial doubt regarding our ability to continue as a going concern. Our independent registered public accounting firm expressed substantial doubt as to our ability to continue as a going concern in its report dated March 26, 2024, included elsewhere in this prospectus. If we are unable to continue as a going concern, we may have to liquidate our assets and may receive less than the value at which those assets are carried on our audited financial statements, and it is likely that investors will lose all or part of their investment. When we seek additional financing to fund our business activities as a result of the substantial doubt about our ability to continue as a going concern, investors or other financing sources may be unwilling to provide additional funding to us

on commercially reasonable terms or at all. The sale or issuance of our Common Shares to Keystone may cause dilution and the sale of the Common Shares acquired by Keystone, or the perception that such sales may occur, could cause the price of our Common Shares to fall. On FebruaryÂ 7, 2025, we entered into the Purchase Agreement with Keystone, pursuant to which Keystone has committed to purchase up to \$25Â million of our Common Shares. On the Commencement Date, we will issue 72,181 Common Shares as the Initial Commitment Shares to Keystone as consideration for its commitment to purchase Common Shares under the Purchase Agreement. The 168,423 Back-End Commitment Shares will be issued in the future at 90 days and 180 days, respectively, following the Commencement Date. The remaining 11,789,614 Common Shares being registered for resale hereunder that may be issued under the Purchase Agreement may be sold by us to Keystone at our discretion from time to time over a 24-month period commencing after the satisfaction of certain conditions set forth in the Purchase Agreement, including that the SEC has declared effective the registration statement that includes this prospectus. The purchase price for the Common Shares that we may sell to Keystone under the Purchase Agreement will fluctuate based on the price of our Common Shares. Thus, the actual gross proceeds from the sale of all Common Shares by us to Keystone may Â 17 Table of Contents be substantially less than the \$25Â million total purchase commitment available to us under the Purchase Agreement, which could materially adversely affect our liquidity. In addition, depending on market liquidity at the time, sales of such Common Shares may cause the trading price of our Common Shares to fall. We generally have the right to control the timing and amount of any future sales of our Common Shares to Keystone. Sales of our Common Shares, if any, to Keystone will depend upon market conditions and other factors to be determined by us. We may ultimately decide to sell to Keystone all, some or none of the additional Common Shares that may be available for us to sell pursuant to the Purchase Agreement. Therefore, sales to Keystone by us could result in substantial dilution to the interests of other holders of our Common Shares. Additionally, the sale of a substantial number of Common Shares to Keystone, or the anticipation of such sales, could make it more difficult for us to sell equity or equity-related securities in the future at a time and at a price that we might otherwise wish to effect sales. If and when we do sell Common Shares to Keystone, after Keystone has acquired the Common Shares, Keystone may resell all, some or none of those Common Shares at any time or from time to time in its discretion. If it becomes necessary for us to issue and sell to Keystone the Common Shares in excess of the Exchange Cap under the Purchase Agreement in order to receive aggregate gross proceeds equal to \$25Â million under the Purchase Agreement, then for so long as the Exchange Cap continues to apply to issuances and sales of Common Shares under the Purchase Agreement, we must first obtain shareholder approval to issue Common Shares in excess of the Exchange Cap in accordance with applicable Nasdaq listing rules. Furthermore, if we elect to issue and sell to Keystone more than the 12,030,218 Common Shares that we may elect to issue and sell to Keystone under the Purchase Agreement that are being registered for resale by Keystone hereunder, which we have the right, but not the obligation, to do, we must first file with the SEC one or more additional registration statements to register under the Securities Act for resale by Keystone such additional Common Shares we wish to sell from time to time under the Purchase Agreement, which the SEC must declare effective, in each case before we may elect to sell any additional Common Shares to Keystone under the Purchase Agreement. Any issuance and sale by us under the Purchase Agreement of a substantial amount of Common Shares in addition to the 12,030,218 Common Shares that we may elect to issue and sell to Keystone under the Purchase Agreement that are being registered for resale by Keystone hereunder could cause additional substantial dilution to our stockholders. The number of our Common Shares ultimately offered for sale by Keystone is dependent upon the number of Common Shares, if any, we ultimately sell to Keystone under the Purchase Agreement, and the sale of Common Shares under the Purchase Agreement may cause the trading price of our Common Shares to decline. It is not possible to predict the actual number of Common Shares we will sell under the Purchase Agreement to the Selling Shareholder, or the actual gross proceeds resulting from those sales. Subject to certain limitations in the Purchase Agreement and compliance with applicable law, we have the discretion to deliver notices to Keystone at any time throughout the term of the Purchase Agreement. The actual number of Common Shares that are sold to the Selling Shareholder may depend based on a number of factors, including the market price of the Common Shares during the sales period. Actual gross proceeds may be nominal, which may impact our future liquidity. Because the price per Common Share of each Common Share sold to Keystone will fluctuate during the sales period, it is not currently possible to predict the number of Common Shares that will be sold or the actual gross proceeds to be raised in connection with those sales. Investors who buy Common Shares at different times will likely pay different prices, and the sale of the Common Shares acquired by Keystone could cause the price of our Common Shares to decline. Pursuant to the Purchase Agreement, we will have discretion, subject to market demand, to vary the timing, prices, and numbers of Common Shares sold to Keystone. If and when we do elect to sell our Common Shares to Keystone pursuant to the Purchase Agreement, after Keystone has acquired such Common Shares, Keystone may resell all, some or none of such Common Shares at any time or from time to time in its discretion and at different prices. As a result, investors who purchase Common Shares from Keystone in this offering at different times will Â 18 Table of Contents likely pay different prices for those Common Shares, and so may experience different levels of dilution and in some cases substantial dilution and different outcomes in their investment results. Investors may experience a decline in the value of the Common Shares they purchase from Keystone in this offering as a result of future sales made by us to Keystone at prices lower than the prices such investors paid for their Common Shares in this offering. We could fail to maintain the listing of our common shares on the Nasdaq Capital Market, which could seriously harm the liquidity of our stock and our ability to raise capital or complete a strategic transaction. Nasdaq Listing Rule 5550(b)(1) On AprilÂ 2, 2024, the Company received the Notification Letter from Nasdaq stating that the Company was not in compliance with Nasdaq Listing Rule 5550(b)(1) because the stockholdersâ™ equity of the Company as of DecemberÂ 31, 2023, as reported in the Companyâ™s Annual Report on Form 10-K, was below the minimum requirement of \$2.5Â million. The Companyâ™s stockholderâ™s equity as of JuneÂ 30, 2024 was negative \$2.2Â million. The Company submitted a plan to regain compliance on MayÂ 17, 2024, and received an extension to SeptemberÂ 30, 2024 to regain compliance. As of SeptemberÂ 30, 2024, the Company had not gained compliance with the requirement. Accordingly, on OctoberÂ 1, 2024, the Company received a staff determination letter from the Listing Department stating that the Company did not meet the terms of the extension because it did not complete its proposed financing initiatives to regain compliance. On OctoberÂ 8, 2024, the Company requested an appeal and hearing; such hearing was scheduled for NovemberÂ 21, 2024. The hearing request automatically stayed Nasdaqâ™s delisting of the Companyâ™s Common Shares pending the panelâ™s decision. On DecemberÂ 19, 2024, the Company announced that the panel granted the Companyâ™s request for an extension to evidence compliance with all applicable criteria for continued listing on The Nasdaq Stock Market. On or before MarchÂ 31, 2025, the Company will be required to demonstrate compliance with NASDAQ Listing Rule 5550(b)(1) requiring the Company to have a minimum of

\$2.5 million in shareholders' equity. Notwithstanding the foregoing, there can be no assurance that the Company will regain compliance with the continued listing standards under the Nasdaq Listing Rules, or that the appeal panel will grant the Company an extension of time to regain compliance, in the event the Company requests such an extension. Nasdaq Listing Rule 5550(a)(2) On July 16, 2024, the Company received the Deficiency Letter from Nasdaq stating that the Company was not in compliance with Nasdaq Listing Rule 5550(a)(2) because for the thirty (30) consecutive business days preceding July 16, 2024, the closing bid price for the Company's common shares were below the minimum \$1.00 per share required for continued listing on The Nasdaq Capital Market. The Deficiency Letter had no immediate effect on the listing of the Company's common shares, and its common shares continue to trade on The Nasdaq Capital Market under the symbol "APTO" and on the TSX under the symbol "APS". The Company's listing on the TSX is independent and will not be affected by the Nasdaq listing status. On August 1, 2024, the Company filed a preliminary S-1 prospectus to raise financing as part of its compliance plan, in addition to funds raised in the June 2024 Registered Direct Offering. On August 2, 2024, the Company implemented a reduction in force with an approximate \$1.2 million per annum anticipated decrease in payroll costs. On November 25, 2024, the Company closed a reasonable best efforts public offering with participation from the CEO and existing and new healthcare focused investors for the purchase and sale of 40,000,000 common shares at a price of \$0.20 per share and warrants to purchase up to 20,000,000 common shares. The warrants have an exercise price of \$0.25 per share, are exercisable immediately and will expire five years from the issuance date. The Company received aggregate gross proceeds of \$8 million, before deducting placement agent fees and other offering expenses. The underwriter received 1,600,000 warrants, each at an exercise price of \$0.275. The underwriter warrants will expire five years from the closing date. **19 Table of Contents** In accordance with Nasdaq Listing Rule 5810(c)(3)(A), the Company was given one hundred and eighty (180) calendar days, or until January 10, 2025, to regain compliance with the Minimum Bid Price Requirement. On January 14, 2025, the Company received an additional staff determination letter from the Nasdaq Listing Qualifications Department of The Nasdaq Stock Market LLC notifying the Company that, for the last thirty (30) consecutive business days, the closing bid price for the Company's common shares have been below the minimum \$1.00 per share required for continued listing on The Nasdaq Capital Market pursuant to Nasdaq Listing Rule 5550(a)(2). The Company was required to present its plan of compliance to the hearings panel. The panel determined that the Company has until March 31, 2025, to regain compliance with the Minimum Bid Price Requirement. On January 27, 2025, the Company held a Meeting of the shareholders of the Corporation. At the Meeting, shareholders voted in favor of an amendment to the Corporation's Articles of Incorporation, as amended, to, at the discretion of the Board, effect a reverse stock split at a ratio between 10-to-1 and 30-to-1, with the ratio within such range to be determined at the discretion of the Board (the "Reverse Split"). The Reverse Split may help the Company gain compliance with the Minimum Bid Price Requirement. The Company intends to monitor the closing bid price of its common shares and may, if appropriate, consider other available options to regain compliance with the Minimum Bid Price Requirement. However, there can be no assurance that the Company will be able to regain compliance with the Minimum Bid Price Requirement or will otherwise be in compliance with other Nasdaq Listing Rules. We have received notice that we are not in compliance with the continued listing rules of the Nasdaq Capital Market. If we fail to regain compliance or are otherwise unable to maintain the listing of our common shares on the Nasdaq Capital Market, it would seriously harm the liquidity of our common shares and our ability to raise capital or complete a strategic transaction. As described in this prospectus under the heading "Prospectus Summary" "Other corporate matters", we are not currently in compliance with the Nasdaq Listing Rules. If the Company does not regain compliance with those listing rules with the required time periods, then our common shares will be delisted from Nasdaq, which would seriously harm the liquidity of our common shares and our ability to raise capital or complete a strategic transaction. There can be no assurance that we will be able to regain compliance with Nasdaq Listing Rules. **USE OF PROCEEDS** This prospectus relates to our Common Shares that may be offered and sold from time to time by Keystone pursuant to the Purchase Agreement. We will not receive any proceeds from the resale of Common Shares by Keystone. Assuming our average sales price is \$0.178 (our closing price on February 7, 2025), we will receive approximately \$2,141,379 million in gross proceeds pursuant to the Purchase Agreement. See "Plan of Distribution" elsewhere in this prospectus for more information. We intend to use any proceeds from the Selling Shareholder that we receive under the Purchase Agreement for working capital and general corporate purposes. We cannot specify with certainty all of the particular uses for the net proceeds that we will have from the sale of our Common Shares pursuant to the Purchase Agreement. Therefore, our management will have broad discretion to determine the specific use for the net proceeds and we may use the proceeds for purposes that are not contemplated at the time of this offering. We will incur all costs associated with this prospectus and the registration statement of which it is a part. **20 Table of Contents** **DILUTION** The sale of Common Shares to the Selling Shareholder pursuant to the Purchase Agreement will have a dilutive impact on our shareholders. In addition, the lower the price of our Common Shares is at the time we exercise our right to issue and sell Common Shares to Selling Shareholder, the more of our Common Shares we will issue to raise our desired amount of proceeds from the sale, and the greater the dilution to our existing shareholders. The price that the Selling Shareholder will receive for our Common Shares when resold pursuant to this prospectus will depend upon the timing of sales and will fluctuate based on the trading price of our Common Shares. We calculate net tangible book value per Common Share by dividing our net tangible book value, which is tangible assets less total liabilities, by the number of our outstanding Common Shares. Dilution represents the difference between the portion of the amount per Common Share paid by purchasers of Common Shares in this offering and the as adjusted net tangible book value per Common Share immediately after giving effect to this offering. As of September 30, 2024, we had a net tangible book value of \$(9.8) million, or \$(0.5019) per Common Share. Dilution represents the difference between the amount per share paid by purchasers in this offering and the as adjusted net tangible book value per share of common stock after the offering. After giving effect to (i) the issuance of 40,000,000 shares issued in the November 2024 Offering; (ii) the sale of 11,789,614 Common Shares to the Selling Shareholder for which we will receive cash proceeds pursuant to the Purchase Agreement at an assumed price of \$0.178 per Common Share, the closing price of our Common Shares on Nasdaq on February 7, 2025, (iii) the issuance of 240,604 Commitment Shares, and (iv) deducting estimated offering expenses of approximately \$145,000 payable by us, and without giving effect to the Beneficial Ownership Cap under the Purchase Agreement, but without adjusting for any other change in our net tangible book value subsequent to September 30, 2024, our as adjusted net tangible book value would have been \$(7.8) million or \$(0.109) per share. This represents an immediate increase in net tangible book value on a pro forma basis of \$0.056 per share to our existing stockholders and immediate dilution of \$0.287 per share to new investors purchasing securities at the assumed public offering price. The following

table illustrates this dilution on a per Common Share basis:  $\Delta$  Assumed public offering price per Common Share  $\Delta$   $\Delta$  \$ 0.178  $\Delta$  Historical net tangible book value per Common Share as of September 30, 2024  $\Delta$   $\Delta$  \$ (0.502)  $\Delta$   $\Delta$  Pro forma increase in net tangible book value per share as of September 30, 2024 attributable to November 2024 Offering  $\Delta$   $\Delta$  \$ 0.337  $\Delta$   $\Delta$  Increase in net tangible book value per Common Share attributable to new investors  $\Delta$   $\Delta$  \$ 0.056  $\Delta$   $\Delta$  Pro forma As adjusted net tangible book value per Common Share after giving effect to this offering and the November 2024 Offering  $\Delta$   $\Delta$  \$ (0.109)  $\Delta$  Dilution in net tangible book value per share to new investors on a pro forma as adjusted basis  $\Delta$   $\Delta$  \$ 0.287  $\Delta$  The number of common shares to be outstanding prior to and after this offering is based on 71,551,401 common shares outstanding as of September 30, 2024, on a pro forma basis, and unless otherwise indicated, excludes, as of such date, the following:  $\Delta$   $\Delta$   $\Delta$  1,236,363 stock options at a weighted average exercise price of \$38.75 per share; and  $\Delta$  21 Table of Contents  $\Delta$   $\Delta$   $\Delta$  329,992 common shares that have been reserved for issuance in connection with future grants under our security-based compensation plans. The discussion and table above assume no exercise of outstanding options or warrants. To the extent that options or warrants are exercised, you may experience further dilution. In addition, we may choose to raise additional capital due to market conditions or strategic considerations even if we believe we have sufficient funds for our current or future operating plans. To the extent that additional capital is raised through the sale of equity or convertible debt securities, the issuance of these securities could result in further dilution to our stockholders.

**THE KEYSTONE CAPITAL TRANSACTION**

General On February 7, 2025, the Company and Keystone entered into the Purchase Agreement, which provides that subject to the terms and conditions set forth therein, the Company may sell to Keystone up to the Total Commitment, which is equal to the greater of (i) \$25 million of the Common Shares and (ii) the Exchange Cap (subject to certain exceptions provided in the Purchase Agreement), from time to time during the term of the Purchase Agreement. Additionally, on February 7, 2025, the Company and Keystone entered into the Registration Rights Agreement, pursuant to which the Company agreed to file a registration statement with the SEC covering the resale of Common Shares that are issued to Keystone under the Purchase Agreement. Under the terms and subject to the satisfaction of the conditions set forth in the Purchase Agreement, the Company has the right, but not the obligation, to sell to Keystone, and Keystone is obligated to purchase, up to Total Commitment. Such sales of Common Shares by the Company, if any, will be subject to certain limitations as set forth in the Purchase Agreement, and may occur from time to time, at the Company's sole discretion, over a 24-month period commencing on the date that all of the conditions to the Company's right to commence such sales are satisfied, including that the registration statement referred to above is declared effective by the SEC. Keystone has no right to require the Company to sell any Common Shares to Keystone, but Keystone is obligated to make purchases as the Company directs, subject to satisfaction of the conditions set forth in the Purchase Agreement. Upon entering into the Purchase Agreement, the Company agreed to issue to Keystone an aggregate of 240,604 Commitment Shares as consideration for Keystone's commitment to purchase Common Shares upon the Company's direction under the Purchase Agreement. The Company will issue 72,181 Common Shares, or 30% of the Commitment Shares, on the Commencement Date as the Initial Commitment Shares. An additional 72,181 Common Shares, or 30% of the Commitment Shares, shall be issued to Keystone 90 days following the Commencement Date as the First Back-End Commitment Shares. The remaining 96,242 Common Shares, or 40% of the Commitment Shares, shall be issued to Keystone 180 days following the Commencement Date as the Second Back-End Commitment Shares. The Company also agreed to pay Keystone up to \$25,000 for its reasonable expenses under the Purchase Agreement. Under the Purchase Agreement, the Company may, at its discretion, from time to time from and after the Commencement Date, direct Keystone to purchase a Fixed Purchase of up to 50,000 Common Shares on any trading day on which the closing sale price of the Common Shares is not below \$0.05 per Common Share on Nasdaq; provided, however that, Keystone's committed obligation under any single Fixed Purchase shall not exceed \$50,000. In addition to Fixed Purchases, and provided that the Company has directed Keystone to purchase the maximum allowable amount of 50,000 Common Shares in a Fixed Purchase, the Company also may, at its  $\Delta$  22 Table of Contents discretion, from time to time from and after the Commencement Date, direct Keystone to purchase additional Common Shares on the trading day immediately following the purchase date for such Fixed Purchase in a VWAP Purchase and, under certain circumstances set forth in the Purchase Agreement, direct Keystone to purchase additional Common Shares on the same trading day as such VWAP Purchase in an Additional VWAP Purchase, in each case upon the terms and subject to the conditions set forth in the Purchase Agreement. Purchase Price for Each Purchase There is no upper limit on the price per Common Share that Keystone may be obligated to pay for the Common Shares in any of the Purchases. The purchase price per Common Share for each Purchase is as follows:  $\Delta$   $\Delta$   $\Delta$  Fixed Purchase $\Delta$ "the lesser of (i) 95% of the daily volume weighted average price of Common Shares on Nasdaq, as reported by Bloomberg Financial LP using the AQR function for the five trading days immediately preceding the applicable date for such Fixed Purchase and (ii) the closing sale price of a Common Share on the applicable date for such Fixed Purchase during the full trading day on Nasdaq on such applicable purchase date.  $\Delta$   $\Delta$   $\Delta$  VWAP Purchase $\Delta$ "the lesser of (i) 95% of the closing sale price of the Common Shares on the date of the applicable VWAP Purchase and (ii) the VWAP during the applicable VWAP Purchase Period (as defined under the Purchase Agreement).  $\Delta$   $\Delta$   $\Delta$  Additional VWAP Purchase $\Delta$ "the lesser of (i) 95% of the closing sale price of the Common Shares on such applicable date of Additional VWAP Purchase, and (ii) the VWAP for the applicable Additional VWAP Purchase Period (as defined under the Purchase Agreement). Maximum Number of Common Shares to be Purchased under each Applicable Purchase Each Purchase has a maximum number of Common Shares or dollar amount that may be purchased by Keystone for each applicable Purchase. The maximum number of Common Shares, purchase prices and the closing sale prices will be adjusted for any reorganization, recapitalization, non-cash dividend, stock split, reverse stock split or other similar transaction occurring after the date of the Purchase Agreement.  $\Delta$   $\Delta$   $\Delta$  Fixed Purchase $\Delta$ "may not exceed \$50,000.  $\Delta$   $\Delta$   $\Delta$  VWAP Purchase $\Delta$ "lesser of (i) 300% of the number of Common Shares directed by the Company to be purchased by Keystone pursuant to the corresponding Fixed Purchase and (ii) 30% of the trading volume in the Common Shares on Nasdaq during the applicable VWAP Purchase Period.  $\Delta$   $\Delta$   $\Delta$  Additional VWAP Purchase $\Delta$ "lesser of (i) 300% of the number of Common Shares directed by the Company to be purchased by Keystone pursuant to the corresponding Fixed Purchase and (ii) a number of Common Shares equal to (A) 30% multiplied by (B) the trading volume of the Common Shares on Nasdaq during the applicable Additional VWAP Purchase Period. Provided, however that, Keystone's maximum purchase commitment in any single VWAP Purchase, together with any one or more Additional VWAP Purchases that are effected on the same trading day as such VWAP Purchase, may not exceed \$1,000,000 in the aggregate for such VWAP Purchase and Additional VWAP Purchases. Under applicable rules of Nasdaq, in no event may the Company issue or sell to Keystone under the Purchase Agreement more than the Exchange Cap, or 12,030,218 Common Shares (including the Commitment Shares), which number of Common Shares is equal to 19.99% of the

Common Shares outstanding immediately prior to the execution of the Purchase Agreement, unless (i) the Company first obtains stockholder approval to issue Common Shares in excess of the Exchange Cap in accordance with applicable Nasdaq listing rules, or (ii) at the time we have issued Common Shares equal to the Exchange Cap and at all times thereafter, the average price per Common Share for all Common Shares sold by us to Keystone under the Purchase Agreement equals or exceeds \$0.05 per Common Share, such that the Exchange Cap limitation would no longer apply to issuances and sales of Common Shares by us to Keystone under the Purchase Agreement under applicable Nasdaq listing rules. 23 Table of Contents The Purchase Agreement also prohibits the Company from directing Keystone to purchase any Common Shares if those Common Shares, when aggregated with all other Common Shares then beneficially owned by Keystone and its affiliates, would result in Keystone having beneficial ownership of more than 4.99% of the outstanding Common Shares or if such Common Shares proposed to be issued and sold would materially affect control of the company pursuant to the rules of the TSX. The Purchase Agreement contains customary representations, warranties, covenants, indemnification and termination provisions. Keystone has covenanted not to cause or engage in any manner whatsoever, any direct or indirect short selling or hedging of the Common Shares. There are no limitations on use of proceeds, financial or business covenants, restrictions on future financings (other than restrictions on the Company's ability to enter into additional variable rate transactions or substantially similar transactions as the transactions contemplated by the Purchase Agreement, subject to certain exceptions, during certain periods beginning prior to the applicable purchase dates for any Fixed Purchase, VWAP Purchase and Additional VWAP Purchase and ending after the dates on which such purchases are fully settled, as set forth in the Purchase Agreement), rights of first refusal, participation rights, penalties or liquidated damages in the Purchase Agreement. The Purchase Agreement may be terminated by the Company at any time, at the Company's sole discretion, without any cost or penalty (subject to the Company issuing the Commitment Shares), on one (1) trading day prior written notice to Keystone. Neither the Company, nor Keystone, may assign or transfer its rights and obligations under the Purchase Agreement, and no provision of the Purchase Agreement or the Registration Rights Agreement may be modified or waived by the parties from and after the date that is one (1) trading day immediately preceding the date on which a registration statement is initially filed with the SEC pursuant to the Registration Rights Agreement. The net proceeds under the Purchase Agreement to the Company will depend on the frequency of sales and the number of Common Shares sold to Keystone and prices at which the Company sells Common Shares to Keystone. The Company expects that any net proceeds received by the Company from such sales to Keystone will be used for working capital and general corporate purposes. Management of the Company believes that it is in the Company's best interests to have the flexibility to sell Common Shares pursuant to the Purchase Agreement, subject to market conditions. Conditions to Commencement and for Delivery of Fixed Purchase Notices, VWAP Purchase Notices and Additional VWAP Purchase Notices The Company's ability to deliver Fixed Purchase notices, VWAP Purchase notices, and Additional VWAP Purchase Notices to Keystone under the Purchase Agreement are subject to the satisfaction, both at the time of Commencement and at the time of delivery by the Company of any Fixed Purchase notice, VWAP Purchase notice or Additional VWAP Purchase Notice to Keystone, of certain conditions, all of which are entirely outside of Keystone's control, including the following: 24 Table of Contents (i) the accuracy in all material respects of the representations and warranties of the Company included in the Purchase Agreement; (ii) the Company having performed, satisfied and complied in all material respects with all covenants, agreements and conditions required by the Purchase Agreement to be performed, satisfied or complied with by the Company; (iii) the registration statement that includes this prospectus (and any one or more additional registration statements filed with the SEC that include Common Shares that may be issued and sold by the Company to Keystone under the Purchase Agreement) having been declared effective under the Securities Act by the SEC, and Keystone being able to utilize this prospectus (and the prospectus included in any one or more additional registration statements filed with the SEC under the Registration Rights Agreement) to resell all of the Common Shares included in this prospectus (and included in any such additional prospectuses); (iv) the SEC shall not have issued any stop order suspending the effectiveness of the registration statement that includes this prospectus (or any one or more additional registration statements filed with the SEC that include Common Shares that may be issued and sold by the Company to Keystone under the Purchase Agreement) or prohibiting or suspending the use of this prospectus (or the prospectus included in any one or more additional registration statements filed with the SEC under the Registration Rights Agreement), and the absence of any suspension of qualification or exemption from qualification of the Common Shares for offering or sale in any jurisdiction; (v) there shall not have occurred any event and there shall not exist any condition or state of facts, which makes any statement of a material fact made in the registration statement that includes this prospectus (or in any one or more additional registration statements filed with the SEC that include Common Shares that may be issued and sold by the Company to Keystone under the Purchase Agreement) untrue or which requires the making of any additions to or changes to the statements contained therein in order to state a material fact required by the Securities Act to be stated therein or necessary in order to make the statements then made therein (in the case of this prospectus or the prospectus included in any one or more additional registration statements filed with the SEC under the Registration Rights Agreement, in light of the circumstances under which they were made) not misleading; (vi) this prospectus, in final form, shall have been filed with the SEC under the Securities Act prior to Commencement, and all reports, schedules, registrations, forms, statements, information and other documents required to have been filed by the Company with the SEC pursuant to the reporting requirements of the Securities Exchange Act of 1934, as amended (the "Exchange Act"), shall have been filed with the SEC; (vii) trading in the Common Shares shall not have been suspended by the SEC or Nasdaq, the Company shall not have received any final and non-appealable notice that the listing or quotation of the Common Shares on Nasdaq shall be terminated on a date certain (unless, prior to such date, the Common Shares is listed or quoted on any other Eligible Market, as such term is defined in the Purchase Agreement), and there shall be no suspension of, or restriction on, accepting additional deposits of the Common Shares, electronic trading or book-entry services by DTC with respect to the Common Shares; (viii) the Company shall have complied with all applicable federal, state and local governmental laws, rules, regulations and ordinances in connection with the execution, delivery and performance of the Purchase Agreement and the Registration Rights Agreement; (ix) the absence of any statute, regulation, order, decree, writ, ruling or injunction by any court or governmental authority of competent jurisdiction which prohibits the consummation of or that would materially modify or delay any of the transactions contemplated by the Purchase Agreement or the Registration Rights Agreement; (x) the absence of any action, suit or proceeding before any arbitrator or any court or governmental authority seeking to restrain, prevent or change the transactions contemplated by the Purchase Agreement or the Registration Rights Agreement, or seeking material damages in connection with such transactions; (xi) all of the Common

Shares that may be issued pursuant to the Purchase Agreement shall have been approved for listing or quotation on Nasdaq (or any Eligible Market as defined in the Purchase Agreement), subject only to notice of issuance;  $\wedge$   $\wedge$   $\wedge$  no condition, occurrence, state of facts or event constituting a material adverse effect shall have occurred and be continuing;  $\wedge$   $\wedge$   $\wedge$  the absence of any bankruptcy proceeding against the Company commenced by a third party, and the Company shall not have commenced a voluntary bankruptcy proceeding, consented to the entry of an order for relief against it in an involuntary bankruptcy case, consented to the appointment of a custodian of the Company or for all or substantially all of its property in any bankruptcy proceeding, or made a general assignment for the benefit of its creditors; and  $\wedge$   $\wedge$   $\wedge$  the receipt by Keystone of the opinions, bring-down opinions and negative assurances from outside counsel to the Company in the forms mutually agreed to by the Company and Keystone prior to the date of the Purchase Agreement.  $\wedge$  25 Table of Contents Termination of the Purchase Agreement Unless earlier terminated as provided in the Purchase Agreement, the Purchase Agreement will terminate automatically on the earliest to occur of:  $\wedge$   $\wedge$   $\wedge$  the first day of the month next following the 24-month anniversary of the Commencement Date;  $\wedge$   $\wedge$   $\wedge$  the date on which Keystone shall have purchased the Total Commitment pursuant to the Purchase Agreement;  $\wedge$   $\wedge$   $\wedge$  the date on which the Common Shares shall have failed to be listed or quoted on Nasdaq or any other Eligible Market; and  $\wedge$   $\wedge$   $\wedge$  thirtieth (30th) trading day next following the date on which the Company commences a voluntary bankruptcy case or any third party commences a bankruptcy proceeding against the Company, a custodian is appointed for the Company in a bankruptcy proceeding for all or substantially all of its property, or the Company makes a general assignment for the benefit of its creditors. We have the right to terminate the Purchase Agreement at any time after Commencement, at no cost or penalty (subject to the issuance of the Commitment Shares), upon one trading day<sup>™</sup>s prior written notice to Keystone. No Short-Selling or Hedging by Keystone Keystone has agreed that neither it nor any of its affiliates shall engage in any direct or indirect short-selling or hedging of our Common Shares during any time prior to the termination of the Purchase Agreement. Prohibition on Variable Rate Transactions Subject to specified exceptions included in the Purchase Agreement, we are limited in our ability to enter into specified variable rate transactions during the term of the Purchase Agreement. Such transactions include, among others, the issuance of convertible securities with a conversion or exercise price that is based upon or varies with the trading price of our Common Shares after the date of issuance. Effect of Performance of the Purchase Agreement on our Stockholders All Common Shares registered in this offering that may be issued or sold by us to Keystone under the Purchase Agreement are expected to be freely tradable. Common Shares registered in this offering may be sold by us to Keystone over a period of up to 24 months commencing on the date of this registration statement of which this prospectus is a part becomes effective. The resale by Keystone of a significant amount of Common Shares registered in this offering at any given time, or the perception that these sales may occur, could cause the market price of our Common Shares to decline and to be highly volatile. Sales of our Common Shares to Keystone, if any, will depend upon market conditions and other factors to be determined by us. We may ultimately decide to sell to Keystone all, some or none of the additional Common Shares that may be available for us to sell pursuant to the Purchase Agreement. If and when we do sell Common Shares to Keystone, after Keystone has acquired the Common Shares, Keystone may resell all, some or none of those Common Shares at any time or from time to time in its discretion. Therefore, sales to Keystone by us under the Purchase Agreement may result in substantial dilution to the interests of other holders of our Common Shares. In addition, if we sell a substantial number of Common Shares to Keystone under the Purchase Agreement, or if investors expect that we will do so, the actual sales of Common Shares or the mere existence of our arrangement with Keystone may make it more difficult for us to sell equity or equity-related securities in the future at a time and at a price that we might otherwise wish to effect such sales. However, we have the right to control the timing and amount of any additional sales of our Common Shares to Keystone and the Purchase Agreement may be terminated by us at any time at our discretion without any cost to us.  $\wedge$  26 Table of Contents Pursuant to the terms of the Purchase Agreement, we have the right, but not the obligation, to direct Keystone to purchase up to 12,030,218 Common Shares, subject to certain limitations. We have registered only a portion of the Common Shares issuable under the Purchase Agreement and, therefore, we may seek to issue and sell to Keystone under the Purchase Agreement more Common Shares than are offered under this prospectus. If we choose to do so, we must first register for resale under the Securities Act any such additional Common Shares, which could cause additional substantial dilution to our stockholders. The number of Common Shares ultimately offered for resale under this prospectus is dependent upon the number of Common Shares we direct Keystone to purchase under the Purchase Agreement. The following table sets forth the amount of gross proceeds we would receive from Keystone from our sale of Common Shares to Keystone under the Purchase Agreement at varying purchase prices:  $\wedge$  Assumed $\wedge$  PurchasePrice $\wedge$  Per $\wedge$  Share $\wedge$  (\$) $\wedge$  (4)  $\wedge$  Number $\wedge$  of $\wedge$  RegisteredShares $\wedge$  to $\wedge$  be $\wedge$  Purchasedif $\wedge$  Full Purchase (1)  $\wedge$   $\wedge$   $\wedge$  Percentage $\wedge$  ofOutstanding $\wedge$  SharesAfter $\wedge$  Giving $\wedge$  Effect $\wedge$  tothe Issuance toKeystone (2)  $\wedge$   $\wedge$  Gross $\wedge$  Proceeds $\wedge$  from $\wedge$  theSale of Shares toKeystone Under thePurchase Agreement (\$)  $\wedge$  \$0.1600  $\wedge$   $\wedge$  11,789,614  $\wedge$   $\wedge$  19.57 % $\wedge$   $\wedge$  \$1,886,338  $\wedge$  \$0.1700  $\wedge$   $\wedge$  11,789,614  $\wedge$   $\wedge$  19.57 % $\wedge$   $\wedge$  \$2,004,234  $\wedge$  \$0.1780(3)  $\wedge$   $\wedge$  11,789,614  $\wedge$   $\wedge$  19.57 % $\wedge$   $\wedge$  \$2,098,551  $\wedge$  \$0.1900  $\wedge$   $\wedge$  11,789,614  $\wedge$   $\wedge$  19.57 % $\wedge$   $\wedge$  \$2,240,027  $\wedge$  \$0.2000  $\wedge$   $\wedge$  11,789,614  $\wedge$   $\wedge$  19.57 % $\wedge$   $\wedge$  \$2,357,923  $\wedge$  \$0.2100  $\wedge$   $\wedge$  11,789,614  $\wedge$   $\wedge$  19.57 % $\wedge$   $\wedge$  \$2,475,819  $\wedge$  \$0.2200  $\wedge$   $\wedge$  11,789,614  $\wedge$   $\wedge$  19.57 % $\wedge$   $\wedge$  \$2,593,715  $\wedge$   $\wedge$  (1) Although the Purchase Agreement provides that we may sell up to \$25 million of our Common Shares to Keystone, we are only registering 12,030,218 Common Shares for resale under the registration statement of which this prospectus forms a part, including the 240,604 Commitment Shares issued or issuable to Keystone on in consideration of Keystone<sup>™</sup>s commitment to purchase our Common Shares at our direction under the Purchase Agreement, for which we will receive no cash proceeds. Therefore, only 11,789,614 of such Common Shares represent Common Shares that we may issue and sell to Keystone for cash consideration in purchases under the Purchase Agreement from time to time, at our sole discretion, during the 24-month period commencing on the Commencement Date, which may or may not cover all the Common Shares we ultimately sell to Keystone under the Purchase Agreement, if any, depending on the purchase price per Common Share. We have included in this column only the 11,789,614 Common Shares that we may issue and sell to Keystone for cash consideration in purchases under the Purchase Agreement that are being registered for resale in the offering made by this prospectus (excluding the 240,604 Commitment Shares), without regard for the Beneficial Ownership Cap. (2) The denominator is based on 60,181,183 Common Shares outstanding as of January $\wedge$  30, 2025, adjusted to include the issuance of the number of Common Shares set forth in the adjacent column that we would have sold to Keystone, assuming the average purchase price in the first column. The numerator is based on the number of Common Shares issuable under the Purchase Agreement at the corresponding assumed average purchase price set forth in the first column. (3) The closing sale price of our Common Shares on February $\wedge$  7, 2025. SELLING SHAREHOLDER This

prospectus relates to the possible resale from time to time by Keystone Capital Partners of any or all of the Common Shares that may be issued by us to Keystone Capital Partners under the Purchase Agreement. For additional information regarding the issuance of Common Shares covered by this prospectus, see the section entitled "The Keystone Capital Transaction" above. We are registering the Common Shares pursuant to the provisions of the Registration Rights Agreement we entered into with Keystone Capital Partners on February 7, 2025 in order to permit the Selling Shareholder to offer the Common Shares for resale from time to time. Except for the 27 Table of Contents for the transactions contemplated by the Purchase Agreement and the Registration Rights Agreement, Keystone Capital Partners has not had any material relationship with us within the past three years. As used in this prospectus, the term "Selling Shareholder" means Keystone Capital Partners, LLC. The table below presents information regarding the Selling Shareholder and the Common Shares that it may offer from time to time under this prospectus. This table is prepared based on information supplied to us by the Selling Shareholder, and reflects holdings as of February 7, 2025. The number of Common Shares in the column "Maximum Number of Common Shares to be Offered Pursuant to this Prospectus" represents all of the Common Shares that the Selling Shareholder may offer under this prospectus. The Selling Shareholder may sell some, all or none of its Common Shares in this offering. We do not know how long the Selling Shareholder will hold the Common Shares before selling them, and we currently have no agreements, arrangements or understandings with the Selling Shareholder regarding the sale of any of the Common Shares. Beneficial ownership is determined in accordance with Rule 13d-3(d) promulgated by the SEC under the Exchange Act, and includes Common Shares with respect to which the Selling Shareholder has voting and investment power. The percentage of Common Shares beneficially owned by the Selling Shareholder prior to the offering shown in the table below is based on an aggregate of 0 Common Shares outstanding on February 7, 2025. Because the purchase price of the Common Shares issuable under the Purchase Agreement is determined on each Fixed Purchase Date, with respect to a Fixed Purchase, on the applicable VWAP Purchase Date, with respect to a VWAP Purchase, and on the applicable Additional VWAP Purchase Date, with respect to an Additional VWAP Purchase, the number of Common Shares that may actually be sold by the Company to Keystone Capital under the Purchase Agreement may be fewer than the number of Common Shares being offered by this prospectus. The fourth column assumes the sale of all of the Common Shares offered by the Selling Shareholder pursuant to this prospectus. A Name of Selling Shareholder A A Number of Common Shares Owned Prior to Offering A A Maximum Number of Common Shares to be Offered Pursuant to this Prospectus Number A A Number of Common Shares Owned After Offering A A A Number A A Percent(1) A A A A A Number(3) A A Percent(2) A Keystone Capital Partners, LLC(3) A A A 0 A A A \* A A A 12,030,218 A A A 12,030,218 A A A 19.96 A \* Represents beneficial ownership of less than 1% of the outstanding Common Shares. (1) Applicable percentage ownership is based on 0 Common Shares outstanding as of February 7, 2025. (2) Assumes the sale of all Common Shares being offered pursuant to this prospectus. (3) The business address of Keystone Capital Partners, LLC is 139 Fulton Street, Suite 412, New York, NY 10038. Keystone Capital Partners, LLC's principal business is that of a private investor. Ranz Group, LLC, a Delaware limited liability company, is the managing member of Keystone Capital Partners, LLC and the beneficial owner of 97% of the membership interests in Keystone Capital Partners, LLC. Fredric G. Zaino is the managing member of Ranz Group, LLC and has sole voting control and investment discretion over securities beneficially owned directly by Keystone Capital, LLC and indirectly by Ranz Group, LLC. We have been advised that none of Mr. A Zaino, Ranz Group, LLC or Keystone Capital Partners, LLC is a member of the Financial Industry Regulatory Authority, or FINRA, or an independent broker-dealer, or an affiliate or associated person of a FINRA member or independent broker-dealer. The foregoing should not be construed in and of itself as an admission by Mr. A Zaino as to beneficial ownership of the securities beneficially owned directly by Keystone Capital Partners, LLC and indirectly by Ranz Group, LLC. PLAN OF DISTRIBUTION The Common Shares offered by this prospectus are being offered by the Selling Shareholder, Keystone Capital Partners, LLC. The Common Shares may be sold or distributed from time to time by the Selling Shareholder directly to one or more purchasers or through brokers, dealers, or underwriters who may act solely as agents at market prices prevailing at the time of sale, at prices related to the prevailing market prices, at the 28 Table of Contents negotiated prices, or at fixed prices, which may be changed. The sale of our Common Shares offered by this prospectus could be effected in one or more of the following methods: A A A ordinary brokers' transactions; A A A transactions involving cross or block trades; A A A through brokers, dealers, or underwriters who may act solely as agents; A A A A A at the market into an existing market for our Common Shares; A A A in other ways not involving market makers or established business markets, including direct sales to purchasers or sales effected through agents; A A A in privately negotiated transactions; or A A A any combination of the foregoing. In order to comply with the securities laws of certain states, if applicable, the Common Shares may be sold only through registered or licensed brokers or dealers. In addition, in certain states, the Common Shares may not be sold unless they have been registered or qualified for sale in the state or an exemption from the state's registration or qualification requirement is available and complied with. None of our Common Shares issued pursuant to the Purchase Agreement will be offered for sale or sold by us or the Selling Shareholder on the TSX or to purchasers resident in Canada. Keystone Capital Partners, LLC is an underwriter within the meaning of Section 2(a)(11) of the Securities Act. Keystone Capital Partners has informed us that it intends to use one or more registered broker-dealers to effectuate all sales, if any, of our Common Shares that it has acquired and may in the future acquire from us pursuant to the Purchase Agreement. Such sales will be made at prices and at terms then prevailing or at prices related to the then current market price. Each such registered broker-dealer will be an underwriter within the meaning of Section 2(a)(11) of the Securities Act. Keystone Capital Partners has informed us that each such broker-dealer will receive commissions from Keystone Capital Partners that will not exceed customary brokerage commissions. Brokers, dealers, underwriters or agents participating in the distribution of our Common Shares offered by this prospectus may receive compensation in the form of commissions, discounts, or concessions from the purchasers, for whom the broker-dealers may act as agent, of the Common Shares sold by the Selling Shareholder through this prospectus. The compensation paid to any such particular broker-dealer by any such purchasers of our Common Shares sold by the Selling Shareholder may be less than or in excess of customary commissions. Neither we nor the Selling Shareholder can presently estimate the amount of compensation that any agent will receive from any purchasers of our Common Shares sold by the Selling Shareholder. We know of no existing arrangements between the Selling Shareholder or any other shareholder, broker, dealer, underwriter or agent relating to the sale or distribution of our Common Shares offered by this prospectus. We may from time to time file with the SEC one or more supplements to this prospectus or amendments to the registration statement of which this prospectus forms a part to amend, supplement or update information contained in this prospectus, including, if and when required under the Securities Act, to disclose certain information relating to a

particular sale of Common Shares offered by this prospectus by the Selling Shareholder, including the names of any brokers, dealers, underwriters or agents participating in the distribution of such Common Shares by the Selling Shareholder, any compensation paid by the Selling Shareholder to any such brokers, dealers, underwriters or agents, and any other required information. **29 Table of Contents** We will pay the expenses incident to the registration under the Securities Act of the offer and sale of our Common Shares covered by this prospectus by the Selling Shareholder. As consideration for its irrevocable commitment to purchase our Common Shares under the Purchase Agreement, we have issued to Keystone Capital Partners 72,181 Common Shares as the Initial Commitment Shares in accordance with the Purchase Agreement and have agreed to issue to Keystone Capital Partners an additional 168,423 Common Shares as the Back-End Commitment Shares. We will also pay to Keystone Capital Partners \$25,000 in cash as reimbursement for the reasonable, out-of-pocket expenses incurred by Keystone Capital Partners, including the legal fees and disbursements of Keystone Capital Partners' legal counsel, in connection with its due diligence investigation of the Company and in connection with the preparation, negotiation and execution of the Purchase Agreement. We also have agreed to indemnify Keystone Capital Partners and certain other persons against certain liabilities in connection with the offering of our Common Shares offered hereby, including liabilities arising under the Securities Act or, if such indemnity is unavailable, to contribute amounts required to be paid in respect of such liabilities. Keystone Capital Partners has agreed to indemnify us against liabilities under the Securities Act that may arise from certain written information furnished to us by Keystone Capital Partners specifically for use in this prospectus or, if such indemnity is unavailable, to contribute amounts required to be paid in respect of such liabilities. Insofar as indemnification for liabilities arising under the Securities Act may be permitted to our directors, officers, and controlling persons, we have been advised that in the opinion of the SEC this indemnification is against public policy as expressed in the Securities Act and is therefore, unenforceable. We estimate that the total expenses for the offering will be approximately \$145,000. Keystone Capital Partners has represented to us that at no time prior to the date of the Purchase Agreement has Keystone Capital Partners or its agents, representatives or affiliates engaged in or effected, in any manner whatsoever, directly or indirectly, any short sale (as such term is defined in Rule 200 of Regulation SHO of the Exchange Act) of our Common Shares or any hedging transaction, which establishes a net short position with respect to our Common Shares. Keystone Capital Partners has agreed that during the term of the Purchase Agreement, neither Keystone Capital Partners, nor any of its agents, representatives or affiliates will enter into or effect, directly or indirectly, any of the foregoing transactions. We have advised the Selling Shareholder that it is required to comply with Regulation M promulgated under the Exchange Act. With certain exceptions, Regulation M precludes the Selling Shareholder, any affiliated purchasers, and any broker-dealer or other person who participates in the distribution from bidding for or purchasing, or attempting to induce any person to bid for or purchase any security which is the subject of the distribution until the entire distribution is complete. Regulation M also prohibits any bids or purchases made in order to stabilize the price of a security in connection with the distribution of that security. All of the foregoing may affect the marketability of the securities offered by this prospectus. This offering will terminate on the date that all of our Common Shares offered by this prospectus have been sold by the Selling Shareholder. Our Common Shares are currently listed on Nasdaq under the symbol "APTO" and on the TSX under the symbol "APS".

**MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS**  
Our discussion and analysis of financial condition and results of operations is incorporated by reference from Part II, Item 7 of the Company's Annual Report on Form 10-K (as amended) as filed with the SEC on March 26, 2025 and from Part II, Item 2 of the Company's Quarterly Reports on Form 10-Q as filed with the SEC on March 31, 2024, June 30, 2024, and September 30, 2024 (see "Incorporation of Certain Information by Reference"). **30 Table of Contents BUSINESS** The description of our business is incorporated by reference from Part I, Item 1 of the Company's Annual Report on Form 10-K (as amended) as filed with the SEC on March 26, 2024 (see "Incorporation of Certain Information by Reference"). **DESCRIPTION OF OUR COMMON SHARES AND SECURITIES WE ARE OFFERING** Offered Shares We are offering 12,030,218 common shares. Description of Securities The following description of our common shares, no par value per share, is a summary and does not purport to be complete. It is subject to and qualified in its entirety by reference to our Articles of Incorporation, Arrangement and Amendment last amended on June 12, 2015 (the "Articles") and our Amended By-Law No. 2 (the "Bylaws"), each of which is incorporated by reference as an exhibit to the Annual Report on Form 10-K. We encourage you to read our Articles and our Bylaws for additional information. Authorized Capital Our authorized share capital consists of an unlimited number of common shares. Voting Rights Holders of common shares will be entitled to receive notice of and to attend all meetings of the shareholders. Holders of common shares are entitled to one vote per share on all matters voted on by the shareholders, including the election of directors. Our common shares do not have cumulative voting rights. Each director is elected by a plurality of the votes cast. However, in an uncontested election, if a nominee for director receives a greater number of votes "withheld" from his or her election than votes "for" such election, the nominee will be considered not to have received the support of the shareholders, even though duly elected as a matter of corporate law. Such a nominee will be expected to provide forthwith his or her resignation to the board, effective on acceptance by the board. Unless special circumstances apply, the board will accept the resignation. Within 90 days following the applicable meeting of the shareholders, the board will determine whether to accept or reject the resignation offer that has been submitted. Following the board's decision on the resignation, the board will promptly disclose, via press release, its decision (including the reasons for rejecting the resignation offer, if applicable). Except for the election of directors, or as otherwise required by the Articles, the Bylaws or applicable laws and regulations, all questions properly before a meeting of shareholders will be decided by a majority of the votes cast on the question. **Dividend Rights and Dividend Policy** The holders of common shares are entitled, at the discretion of our board of directors, to receive out of any or all of our assets properly available for the payment of dividends, any dividend declared by the board of directors and payable by us on our common shares. Any dividend unclaimed after a period of six years from the date on which the same has been declared to be payable shall be forfeited and shall revert to us. We and our subsidiaries are, and may become, parties to agreements pursuant to which we borrow money, and certain covenants in these agreements may limit our ability to pay dividends or other distributions with respect to the common shares or to repurchase common shares. **31 Table of Contents** We have not paid any dividends since our incorporation. At the discretion of our board of directors, we will consider paying dividends in the future as our operational circumstances may permit, having regard to, among other things, our earnings, cash flow and financial requirements. It is the current policy of our board of directors to retain all earnings to finance our business plan. **Liquidation Rights** The holders of common shares will participate on a pro rata basis in any distribution of our remaining property upon our liquidation, dissolution or winding-up or any other return of capital or distribution of our

assets among our shareholders for the purpose of winding up our affairs. Other Rights and Preferences Our common shares have no sinking fund or redemption provisions or preemptive, conversion or exchange rights. Fully Paid Shares Our outstanding common shares are, and any newly issued common shares will be, fully paid and non-assessable.

**DISCLOSURE OF COMMISSION POSITION ON INDEMNIFICATION FOR SECURITIES ACT LIABILITIES** Insofar as indemnification for liabilities arising under the Securities Act may be permitted to our directors, officers and controlling persons pursuant to the foregoing provisions, we have been informed that in the opinion of the SEC such indemnification is against public policy as expressed in the Securities Act and is, therefore, unenforceable.

**LEGAL MATTERS** The validity of the securities being offered hereby is being passed upon for us by McCarthy Tétrault LLP, Toronto, Ontario, with respect to matters of Canadian law and Dorsey & Whitney LLP, Vancouver, British Columbia and Denver, Colorado with respect to matters of U.S. law.

**EXPERTS** The consolidated financial statements of Aptose Biosciences Inc. as of December 31, 2023 and 2022 and for the years then ended have been incorporated by reference herein and in the registration statement in reliance upon the report of KPMG LLP, independent registered public accounting firm, incorporated by reference herein, and upon the authority of said firm as experts in accounting and auditing. The audit report covering the December 31, 2023 consolidated financial statements contains an explanatory paragraph that states that the Company's recurring losses from operations and net capital deficiency raise substantial doubt about the entity's ability to continue as a going concern. The consolidated financial statements do not include any adjustments that might result from the outcome of that uncertainty.

**32 Table of Contents WHERE YOU CAN FIND MORE INFORMATION** We are subject to the information requirements of the Securities Exchange Act of 1934 and, accordingly, we file reports with and furnish other information to the SEC. This prospectus forms part of a registration statement we have filed with the SEC relating to, among other things, the Offered Shares. As permitted by SEC rules, this prospectus does not contain all of the information contained in the registration statement that we filed.

For further information regarding us and the securities covered by this prospectus, you may desire to review the full registration statement, including its exhibits. The registration statement, including its exhibits, as well as the documents that we file with the SEC, may be inspected and copied at the public reference facilities maintained by the SEC at 100 F Street, N.E., Room 1580, Washington, D.C. 20549. You may obtain information on the operation of the public reference room by calling 1-800-SEC-0330. Copies of such materials are also available by mail from the Public Reference Branch of the SEC at 100 F Street, N.E., Washington, D.C. 20549 at prescribed rates. In addition, the SEC maintains a website (<http://www.sec.gov>) from which interested persons can electronically access the registration statement, including the exhibits to the registration statement.

**INCORPORATION OF CERTAIN INFORMATION BY REFERENCE** The SEC allows us to incorporate by reference information we file with the SEC. This means that we can disclose important information to you by referring you to those documents. We incorporate by reference into this prospectus the documents listed below:

Annual Report on Form 10-K for the fiscal year ended December 31, 2023 filed with the SEC on March 26, 2024, as amended and filed with the SEC on April 29, 2024; A Quarterly Report on Form 10-Q filed with the SEC on May 14, 2024, August 8, 2024, and November 12, 2024; A A Our definitive proxy statements on Schedule 14A filed on May 14, 2024, July 17, 2024, and December 30, 2024; A A Our Current Reports on Form 8-K filed with the SEC on January 30, 2024, March 1, 2024, April 5, 2024, April 26, 2024, May 1, 2024, May 31, 2024, June 3, 2024, June 20, 2024, July 19, 2024, August 30, 2024, September 6, 2024, October 4, 2024, November 25, 2024, January 13, 2025, January 21, 2025, January 28, 2025, February 3, 2025, February 13, 2025; and A A The description of our common shares set forth under the heading "Additional Information" "Common Shares" contained in our

Annual Report on Form 20-F for the fiscal year end May 31, 2014, filed with the SEC on July 30, 2014, and incorporated by reference into our Registration Statement on Form 8-A, as filed with the SEC on October 21, 2014, including any amendment or report to such Registration Statement on Form 8-A filed for the purpose of amending such description. In addition, all documents filed by us under Sections 13(a), 13(c), 14 or 15(d) of the Securities Exchange Act of 1934, after the date of this prospectus but before the termination of the offering of the securities covered by this prospectus, are hereby incorporated by reference into this prospectus. We have not authorized anyone to provide you with any different or additional information other than that contained in or incorporated by reference into this prospectus. We take no responsibility for, and can provide no assurance as to the reliability of, any information that others may provide. Any statement contained in a document incorporated or deemed to be incorporated by reference into this prospectus will be deemed to be modified or superseded for purposes of this prospectus to the extent that a statement contained in this prospectus or any other subsequently filed document that is deemed to be incorporated by reference into this prospectus modifies or supersedes the statement. Any statement so modified or superseded will not be deemed, except as so modified or superseded, to constitute a part of this prospectus.

**33 Table of Contents** The documents incorporated by reference into this prospectus are available from us upon request. We will provide a copy of any and all of the information that is incorporated by reference into this prospectus to any person, including a beneficial owner, to whom a prospectus is delivered, without charge, upon written or oral request. If exhibits to the documents incorporated by reference into this prospectus are not themselves specifically incorporated by reference in this prospectus, then the exhibits will not be provided. Requests for any of these documents should be directed to: Investor Relations Aptose Biosciences Inc. 66 Wellington Street West, Suite 5300 TD Bank Tower, Box 48 Toronto, Ontario M5K 1E6 Canada

**34 Table of Contents** A A **PROSPECTUS** Aptose Biosciences Inc. Offering of 12,030,218 Common Shares A f1f2f3f4f5f6f7f8f9f10f11f12f13f14f15f16f17f18f19f20f21f22f23f24f25f26f27f28f29f30f31f32f33f34f35f36f37f38f39f40f41f42f43f44f45f46f47f48f49f50f51f52f53f54f55f56f57f58f59f60f61f62f63f64f65f66f67f68f69f70f71f72f73f74f75f76f77f78f79f80f81f82f83f84f85f86f87f88f89f90f91f92f93f94f95f96f97f98f99f100f101f102f103f104f105f106f107f108f109f110f111f112f113f114f115f116f117f118f119f120f121f122f123f124f125f126f127f128f129f130f131f132f133f134f135f136f137f138f139f140f141f142f143f144f145f146f147f148f149f150f151f152f153f154f155f156f157f158f159f160f161f162f163f164f165f166f167f168f169f170f171f172f173f174f175f176f177f178f179f180f181f182f183f184f185f186f187f188f189f190f191f192f193f194f195f196f197f198f199f200f201f202f203f204f205f206f207f208f209f2010f2011f2012f2013f2014f2015f2016f2017f2018f2019f2020f2021f2022f2023f2024f2025f2026f2027f2028f2029f20200f20201f20202f20203f20204f20205f20206f20207f20208f20209f202010f202011f202012f202013f202014f202015f202016f202017f202018f202019f202020f202021f202022f202023f202024f202025f202026f202027f202028f202029f202030f202031f202032f202033f202034f202035f202036f202037f202038f202039f2020310f2020311f2020312f2020313f2020314f2020315f2020316f2020317f2020318f2020319f20203110f20203111f20203112f20203113f20203114f20203115f20203116f20203117f20203118f20203119f202031110f202031111f202031112f202031113f202031114f202031115f202031116f202031117f202031118f202031119f2020311110f2020311111f2020311112f2020311113f2020311114f2020311115f2020311116f2020311117f2020311118f2020311119f20203111110f20203111111f20203111112f20203111113f20203111114f20203111115f20203111116f20203111117f20203111118f20203111119f202031111110f202031111111f202031111112f202031111113f202031111114f202031111115f202031111116f202031111117f202031111118f202031111119f2020311111110f2020311111111f2020311111112f2020311111113f2020311111114f2020311111115f2020311111116f2020311111117f2020311111118f2020311111119f20203111111110f20203111111111f20203111111112f20203111111113f20203111111114f20203111111115f20203111111116f20203111111117f20203111111118f20203111111119f202031111111110f202031111111111f202031111111112f202031111111113f202031111111114f202031111111115f202031111111116f202031111111117f202031111111118f202031111111119f2020311111111110f2020311111111111f2020311111111112f2020311111111113f2020311111111114f2020311111111115f2020311111111116f2020311111111117f2020311111111118f2020311111111119f20203111111111110f20203111111111111f20203111111111112f20203111111111113f20203111111111114f20203111111111115f20203111111111116f20203111111111117f20203111111111118f20203111111111119f202031111111111110f202031111111111111f202031111111111112f202031111111111113f202031111111111114f202031111111111115f202031111111111116f202031111111111117f202031111111111118f202031111111111119f2020311111111111110f2020311111111111111f2020311111111111112f2020311111111111113f2020311111111111114f2020311111111111115f2020311111111111116f2020311111111111117f2020311111111111118f2020311111111111119f20203111111111111110f20203111111111111111f20203111111111111112f20203111111111111113f20203111111111111114f20203111111111111115f20203111111111111116f20203111111111111117f20203111111111111118f20203111111111111119f202031111111111111110f202031111111111111111f202031111111111111112f202031111111111111113f202031111111111111114f202031111111111111115f202031111111111111116f202031111111111111117f202031111111111111118f202031111111111111119f2020311111111111111110f2020311111111111111111f2020311111111111111112f2020311111111111111113f2020311111111111111114f2020311111111111111115f2020311111111111111116f2020311111111111111117f2020311111111111111118f2020311111111111111119f20203111111111111111110f20203111111111111111111f20203111111111111111112f20203111111111111111113f20203111111111111111114f20203111111111111111115f20203111111111111111116f20203111111111111111117f20203111111111111111118f20203111111111111111119f202031111111111111111110f202031111111111111111111f202031111111111111111112f202031111111111111111113f202031111111111111111114f202031111111111111111115f202031111111111111111116f202031111111111111111117f202031111111111111111118f202031111111111111111119f2020311111111111111111110f2020311111111111111111111f2020311111111111111111112f2020311111111111111111113f2020311111111111111111114f2020311111111111111111115f2020311111111111111111116f2020311111111111111111117f2020311111111111111111118f2020311111111111111111119f20203111111111111111111110f20203111111111111111111111f20203111111111111111111112f20203111111111111111111113f20203111111111111111111114f20203111111111111111111115f20203111111111111111111116f20203111111111111111111117f20203111111111111111111118f20203111111111111111111119f202031111111111111111111110f202031111111111111111111111f202031111111111111111111112f202031111111111111111111113f202031111111111111111111114f202031111111111111111111115f202031111111111111111111116f202031111111111111111111117f202031111111111111111111118f202031111111111111111111119f2020311111111111111111111110f2020311111111111111111111111f2020311111111111111111111112f2020311111111111111111111113f20203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CBCA also provides that the Company may with the approval of a court, indemnify such an individual or advance moneys against all costs, charges and expenses reasonably incurred by the individual in connection with an action by or on behalf of the Company or other entity to procure a judgment in its favour, to which the individual is made a party because of the individual's association with the Company or other entity at the Company's request. However, indemnification under any of the foregoing circumstances is prohibited under the CBCA unless the individual: (i) acted honestly and in good faith with a view to the Company's best interests, or the best interests of the other entity for which the individual acted as director or officer or in a similar capacity at the Company's request; and (ii) in the case of a criminal or administrative action or proceeding that is enforced by a monetary penalty, the individual had reasonable grounds for believing that his or her conduct was lawful. The Company's by-law No. 2 provides that the Company will indemnify its directors or officers, former directors or officers or other individuals who act or have acted at the Company's request as a director or officer, or in a similar capacity, of another entity, and his or her heirs and legal representatives to the extent permitted by the CBCA. The Company's by-law No. 2 further provides that, except as otherwise required by the CBCA, the Company may from time to time indemnify and save harmless any person who was or is a party or is threatened by a Table of Contents to be made a party to any threatened, pending or completed action, suit or proceeding, whether civil, criminal, administrative or investigative (other than an action by or in the right of the Company) by reason of the fact that he or she is or was an employee or agent of the Company, or is or was serving at the request of the Company as an employee, agent of or participant in another entity against expenses (including legal fees), judgments, fines and any amount actually and reasonably incurred by him or her in connection with such action, suit or proceeding if he or she acted honestly and in good faith with a view to the best interests of the Company or, as the case may be, to the best interests of the other entity for which he or she served at the Company's request and, with respect to any criminal or administrative action or proceeding that is enforced by a monetary penalty, had reasonable grounds for believing that his or her conduct was lawful. The termination of any action, suit or proceeding by judgment, order, settlement or conviction will not, of itself, create a presumption that the person did not act honestly and in good faith with a view to the best interests of the Company or other entity and, with respect to any criminal or administrative action or proceeding that is enforced by a monetary penalty, had no reasonable grounds for believing that his or her conduct was lawful. The Company has entered into indemnity agreements with its directors and certain officers pursuant to which it has agreed to indemnify its officers and directors for: (i) all costs, charges and expenses, including an amount paid to settle an action or satisfy a judgment, reasonably incurred by them in respect of any civil, criminal or administrative action or proceeding to which they are made a party by reason of being or having been a director and/or officer of the Company, if (a) they acted honestly and in good faith with a view to the best interests of the Company, and (b) in the case of a criminal or administrative action or proceeding that is enforced by a monetary penalty, they had reasonable grounds for believing that their conduct was lawful. (ii) all costs, charges and expenses reasonably incurred by them in connection with any action by or on behalf of the Company to procure a judgment in the Company's favour to which they are made a party by reason of being or having been a director and/or officer of the Company. (iii) all costs, charges and expenses reasonably incurred by them in connection with the defense of any civil, criminal or administrative proceeding to which they are made a party by reason of being or having been a director and/or officer of the Company if they have been substantially successful on the merits in their defense of the action or proceeding and they fulfill the conditions set forth in the two foregoing clauses (i) and (ii) above. Insofar as indemnification for liabilities arising under the Securities Act of 1933 may be permitted to directors, officers or persons controlling the Company pursuant to the foregoing provisions, the Company has been informed that in the opinion of the Securities and Exchange Commission such indemnification is against public policy as expressed in the Securities Act of 1933 and is therefore unenforceable.

Item 15. Recent Sales of Unregistered Securities. The Company sold the securities described below within the past three years which were not registered under the Securities Act. On December 9, 2022, the Company entered into an equity distribution agreement pursuant to which the Company may, from time to time, sell Common Shares having an aggregate offering value of up to \$50 million through Jones Trading Institutional Services LLC (the "Jones Trading") on Nasdaq (the "2022 ATM Facility"). During the current year up to May 30, 2024, the date on which the Company terminated the 2022 ATM Facility, the Company issued 81,591 Common Shares under this 2022 ATM Facility at an average price of \$1.22 per share for gross proceeds of \$100 thousand (\$97 thousand net of share issuance costs). On May 30, 2024, the Company terminated the 2022 At-The-Market Facility. Since inception to May 30, 2024, the date the Company terminated the 2022 ATM Facility, the Company raised a total of \$2.1 million of gross proceeds (\$2.0 million net of share issuance costs) under the 2022 ATM Facility. Costs associated with the proceeds consisted of a 3% cash commission. II-2 Table of Contents On May 25, 2023, the Company entered into Purchase Agreement with Keystone Capital Partners, LLC (the "Keystone"), pursuant to which Keystone has committed to purchase from the Company, at the Company's direction, up to \$25 million common shares, subject to the terms and conditions specified in such purchase agreement. Pursuant to the Purchase Agreement, the Company will issue to Keystone 7,547 Initial Commitment Shares on the Commencement Date as consideration for its irrevocable commitment to purchase the common shares thereunder, subject the terms and conditions contained therein. In the nine months ended September 30, 2023, the Company's issuance of common shares to Keystone comprised 328,438 common shares. The securities were issued pursuant to an exemption from registration provided for under Section 4(a)(2) of the Securities Act. The Company relied on this exemption from registration based in part on representations made by the investor. On September 6, 2023, the Company entered into a subscription agreement (the "Subscription Agreement") with Hanmi Pharmaceutical Co., Ltd., a corporation formed under the laws of the Republic of Korea (the "Hanmi Pharmaceutical"), pursuant to which the Company agreed to sell and issue to Hanmi Pharmaceutical and Hanmi Pharmaceutical agreed to purchase from the Company up to \$7.0 million of our common shares, at a purchase price per common share of \$4.448 (the "Purchase Price"), which represents a premium to the Nasdaq's Minimum Price as defined under Rule 5635(d)(1)(A) under Nasdaq's Listing Rules of \$4.04 per common share for aggregate gross proceeds to the Company of up to \$7.0 million (such transaction, the "Hanmi Investment"). Hanmi Pharmaceutical is a current shareholder of the Company and holds, as of the date of this current report, approximately 884,152 common shares which represents approximately 12.07% of the Company's issued and outstanding common shares on a non-diluted basis. The Hanmi Investment was structured in two tranches. The first tranche of \$3.0 million was paid upon the signing of the Subscription Agreement for the issuance of 668,449 common shares at the Purchase Price. The second tranche of \$4.0 million (the "Second Tranche") will be priced at a premium to the Nasdaq's Minimum Price based on a formula set forth in the Subscription Agreement and will be paid upon the Company achieving certain milestones. The securities were issued pursuant to an exemption from

registration provided for under Section 4(a)(2) of the Securities Act. The Company relied on this exemption from registration based in part on representations made by the investor. On January 31, 2024, the Company announced the closing of a \$9.7 million public offering (the "Public Offering") and a \$4 million private placement (the "Private Placement") with Hanmi. The Public Offering comprised 5,649,122 Common Shares and warrants at a combined offering price of \$1.71. This included 736,842 Common Shares and warrants pursuant to a full exercise by the underwriter of its over-allotment option. The Private Placement comprised 2,105,263 Common Shares sold at a price of \$1.90, representing an 11% premium over the price of the Common Shares issued as part of the Public Offering. Nasdaq subsequently issued a letter to the Company regarding the value and the date of the Private Placement, as discussed in this note, below. Financing costs of approximately \$1.4 million included underwriting costs of 7% and approximately \$0.4 million in professional fees. The Company also issued Hanmi warrants to purchase Common Shares at an exercise price of \$1.71 per Share. On June 3, 2024, the Company closed a registered direct offering priced at-the-market under Nasdaq rules of 1,800,000 Common Shares at a purchase price of \$1.15 per share and 2,055,000 pre-funded warrants at a purchase price of \$1.149 per pre-funded warrant. Additionally, in a concurrent private placement, Aptose issued unregistered series A warrants to purchase up to 3,855,000 Common Shares and series B warrants to purchase up to 3,855,000 Common Shares, each at an exercise price of \$1.15 per share. The series A and series B unregistered warrants became exercisable beginning on the effective date of shareholder approval of the issuance of the shares issuable upon exercise of the warrants which was obtained on September 5, 2024. The series A warrants will expire five years from September 5, 2024 and the series B warrants will expire eighteen months from September 5, 2024. The gross proceeds to the Company from the offering was approximately \$4.43 million, before deducting the placement agent's fees and other offering expenses. Financing costs of approximately \$408 thousand included underwriting costs of 7% and professional fees. In addition, the underwriter received 192,750 warrants, each at an exercise price of \$1.44. The unregistered warrants are exercisable on September 5, 2024 and will expire five years from September 5, 2024. **II-3 Table of Contents On February 7, 2025**, the Company entered into Purchase Agreement with Keystone Capital Partners, LLC ("Keystone"), pursuant to which Keystone has committed to purchase from the Company, at the Company's direction, up to \$25 million common shares, subject to the terms and conditions specified in such purchase agreement. Pursuant to the Purchase Agreement, the Company issued to Keystone 72,191 Initial Commitment Shares concurrently with the Company's execution of the Purchase Agreement as consideration for its irrevocable commitment to purchase the common shares thereunder, subject the terms and conditions contained therein. The securities were issued pursuant to an exemption from registration provided for under Section 4(a)(2) of the Securities Act. The Company relied on this exemption from registration based in part on representations made by the investor. **Item 16. Exhibits and Financial Statement Schedules.** **(a)** See the Exhibit Index on the page immediately preceding the signature page hereto for a list of exhibits filed as part of this registration statement on Form S-1, which Exhibit Index is incorporated herein by reference. **(b)** No financial statement schedules are provided because the information called for is not required or is shown either in the financial statements or the notes thereto. **Item 17. Undertakings.** The undersigned registrant hereby undertakes: (1) To file, during any period in which offers or sales are being made, a post-effective amendment to this registration statement: (i) To include any prospectus required by section 10(a)(3) of the Securities Act; (ii) To reflect in the prospectus any facts or events arising after the effective date of the registration statement (or the most recent post-effective amendment thereof) which, individually or in the aggregate, represent a fundamental change in the information set forth in the registration statement. Notwithstanding the foregoing, any increase or decrease in volume of securities offered (if the total dollar value of securities offered would not exceed that which was registered) and any deviation from the low or high end of the estimated maximum offering range may be reflected in the form of prospectus filed with the Securities and Exchange Commission pursuant to Rule 424(b) if, in the aggregate, the changes in volume and price represent no more than a 20% percent change in the maximum aggregate offering price set forth in the "Calculation of Registration Fee" table in the effective registration statement; and (iii) To include any material information with respect to the plan of distribution not previously disclosed in the registration statement or any material change to such information in the registration statement.; provided, however, that paragraphs (1)(i), (1)(ii) and (1)(iii) above do not apply if the information required to be included in a post-effective amendment by those paragraphs is contained in reports filed with or furnished to the Securities and Exchange Commission by the Company pursuant to Section 13 or Section 15(d) of the Securities Exchange Act of 1934 that are incorporated by reference in the registration statement, or is contained in a form of prospectus filed pursuant to Rule 424(b) that is part of the registration statement. (2) That, for the purpose of determining any liability under the Securities Act, each such post-effective amendment shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof. (3) To remove from registration by means of a post-effective amendment any of the securities being registered which remain unsold at the termination of the offering. **II-4 Table of Contents** (4) That, for the purpose of determining liability under the Securities Act to any purchaser: (A) Each prospectus filed by the Company pursuant to Rule 424(b)(3) shall be deemed to be part of the registration statement as of the date the filed prospectus was deemed part of and included in the registration statement; and (B) Each prospectus required to be filed pursuant to Rule 424(b)(2), (b)(5) or (b)(7) as part of a registration statement in reliance on Rule 430B relating to an offering made pursuant to Rule 415(a)(1)(i), (vii), or (x) for the purpose of providing the information required by Section 10(a) of the Securities Act shall be deemed to be part of and included in the registration statement as of the earlier of the date such form of prospectus is first used after effectiveness or the date of the first contract of sale of securities in the offering described in the prospectus. As provided in Rule 430B, for liability purposes of the issuer and any person that is at that date an underwriter, such date shall be deemed to be a new effective date of the registration statement relating to the securities in the registration statement to which that prospectus relates, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof. Provided, however, that no statement made in a registration statement or prospectus that is part of the registration statement or made in a document incorporated or deemed incorporated by reference into the registration statement or prospectus that is part of the registration statement will, as to a purchaser with a time of contract of sale prior to such effective date, supersede or modify any statement that was made in the registration statement or prospectus that was part of the registration statement or made in any such document immediately prior to such effective date. (5) That, for purposes of determining any liability under the Securities Act, each filing of the Company's annual report pursuant to Section 13(a) or 15(d) of the Exchange Act (and, where applicable, each filing of an employee benefit plan's annual report pursuant to Section 15(d) of the Exchange Act) that is incorporated by reference in the registration statement shall be deemed to be a new registration statement relating to

the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof. (6) Insofar as indemnification for liabilities arising under the Securities Act may be permitted to directors, officers and controlling persons of the Company pursuant to any charter provision, by law or otherwise, the Company has been advised that in the opinion of the Securities and Exchange Commission such indemnification is against public policy as expressed in the Securities Act and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than payment by the Company of expenses incurred or paid by a director, officer or controlling person of the Company in the successful defense of any action, suit or proceeding) is asserted by such director, officer or controlling person in connection with the securities being registered, the Company will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question whether such indemnification by it is against public policy as expressed in the Securities Act and will be governed by the final adjudication of such issue. **II-5 Table of Contents EXHIBIT INDEX** The following documents are being filed with the Commission as exhibits to this registration statement on Form S-1.

ExhibitNumber **3.1** **Description of Document** **3.1** **Articles of Incorporation, Arrangement and Amendment** (incorporated herein by reference to Exhibit 99.3 to the Company's Current Report on Form 6-K filed with the SEC on June 12, 2015) **3.2** **By-law #2** of the Company (incorporated herein by reference to Exhibit 99.2 to the Company's Current Report on Form 6-K filed with the SEC on June 12, 2015) **3.3** **Certificate of Amendment** (incorporated herein by reference to Exhibit 3.1 to the Company's Current Report on Form 8-K filed with the SEC on June 5, 2023) **4.1** **Description of Securities** (incorporated by reference to Exhibit 4.1 to the Company's Annual report on Form 10-K filed with the SEC on March 22, 2022) **4.2** **Form of Common Warrant** (incorporated herein by reference to Exhibit 4.2 to the Company's Registration Statement on Form S-1/A filed October 31, 2024) **4.3** **Form of Pre-Funded Warrant** (incorporated herein by reference to Exhibit 4.3 to the Company's Registration Statement on Form S-1/A filed October 31, 2024) **4.4** **Form of Placement Agent Warrant** (incorporated herein by reference to Exhibit 4.4 to the Company's Registration Statement on Form S-1/A filed October 31, 2024) **5.1\*** **Opinion of McCarthy Tétrault LLP** **#10.1** **Indemnification Agreement** dated July 10, 2007 between Lorus Therapeutics Inc. and the Company (incorporated herein by reference to Exhibit 99.1 to the Company's Current Report on Form 6-K filed with the SEC on September 4, 2007) **#10.2+** **#10.2** **Amended and Restated Executive Employment Agreement** between the Company and Dr. William G. Rice dated August 19, 2014 (incorporated herein by reference to Exhibit 4.9A to the Company's Annual Report on Form 20-F filed with the SEC on March 4, 2015) **#10.3+** **Share Option Plan** as amended May 5, 2015 (incorporated herein by reference to Exhibit 99.2 to the Company's Current Report on Form 6-K filed with the SEC on June 12, 2015) **#10.4+** **Stock Incentive Plan** as adopted May 5, 2015 (incorporated herein by reference to Exhibit 99.1 to the Company's Current Report on Form 6-K filed with the SEC on June 12, 2015) **#10.5+** **Form of Executive Employment Agreement**, dated December 4, 2019, between the Company and Dr. Rafael Bejar (incorporated herein by reference to Exhibit 10.7 to the Company's Annual Report filed on Form 10-K filed with the SEC on March 10, 2020) **#10.6^** **License agreement** dated June 13, 2018 by and between the Company and CrystalGenomics, Inc. (incorporated herein by reference to Exhibit 1.1 to the Company's Current Report on Form 6-K filed with the SEC filed on June 22, 2018) **#10.7^** **Option and License Agreement** between the Company and CrystalGenomics, Inc. dated March 21, 2016 (incorporated herein by reference on Form 10-KA/3 filed with the SEC on April 22, 2019) **#10.8^** **Amendment to Option and License Agreement** between the Company and CrystalGenomics, Inc., dated April 26, 2016 (incorporated herein by reference to Exhibit 99.2 to the Company's Current Report on Form 6-K filed with the SEC on June 8, 2016) **II-6 Table of Contents** **ExhibitNumber** **10.9^** **Description of Document** **#10.9** **Second Amendment to Option and License Agreement** between the Company and CrystalGenomics, Inc., dated May 13, 2016 (incorporated herein by reference to Exhibit 99.3 to the Company's Current Report on Form 6-K filed with the SEC on June 8, 2016) **#10.10^** **Third Amendment to Option and License Agreement** between the Company and CrystalGenomics, Inc., dated May 19, 2016 (incorporated herein by reference to Exhibit 99.4 to the Company's Current Report on Form 6-K filed with the SEC on June 8, 2016) **#10.11^** **Fourth Amendment to Option and License Agreement** between the Company and CrystalGenomics, Inc., dated June 1, 2016 (incorporated herein by reference to Exhibit 99.5 to the Company's Current Report on Form 6-K filed with the SEC on June 8, 2016) **#10.12^** **License Agreement** dated as of March 6, 2018 by and between the Company and Ohm Oncology Inc. (incorporated herein by reference to Exhibit 99.2 on Form 6-K filed with the SEC filed on March 8, 2018) **#10.13+** **Aptose Biosciences Inc. 2021 Employee Stock Purchase Plan** (incorporated by reference to the Definitive Proxy statement on Schedule 14A filed with the SEC on April 1, 2021) (File no. 1-32001) **#10.14+** **Aptose Biosciences Inc. 2021 Employee Stock Incentive Plan** (incorporated by reference to the Definitive Proxy statement on Schedule 14A filed with the SEC on April 1, 2021) (File no. 1-32001) **#10.15^** **Exclusive License Agreement**, dated November 4, 2021, by and between Hanmi Pharmaceutical Co. Ltd. and Aptose Biosciences Inc. (incorporated herein by reference to Exhibit 10.1 to the Company's Current Report filed on Form 8-K on November 4, 2021) **#10.16** **Employment Agreement** dated June 3, 2019 between Aptose Biosciences Inc. and Philippe Ledru (incorporated herein by reference to Exhibit 10.1 to the Company's Current Report filed on Form 8-K on April 11, 2022) **#10.17** **Employment Agreement**, dated June 27, 2022, between Aptose Biosciences Inc. and Fletcher Payne (incorporated herein by reference to Exhibit 10.1 to the Company's Current Report filed on Form 8-K on June 28, 2022) **#10.18** **Equity Distribution Agreement**, dated December 9, 2022, among Aptose Biosciences Inc. and JonesTrading Institutional Services LLC (incorporated herein by reference to Exhibit 10.1 to the Company's Current Report filed on Form 8-K on December 12, 2022) **#10.19** **Registration Rights Agreement**, dated as of May 25, 2023, by and between the Company and Keystone Capital Partners, LLC (incorporated herein by reference to Exhibit 10.2 to the Company's Current Report on Form 8-K filed with the SEC on May 26, 2023) **#10.20** **Common Share Purchase Agreement**, dated as of May 25, 2023, by and between the Company and Keystone Capital Partners, LLC (incorporated herein by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed with the SEC on May 26, 2023) **#10.21** **Subscription Agreement**, dated September 6, 2023, by and between the Company and Hanmi Pharmaceutical Co., Ltd. (incorporated herein by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed with the SEC on September 12, 2023) **#10.22** **Investor Rights Agreement**, dated September 6, 2023, by and between the Company and Hanmi Pharmaceutical Co., Ltd. (incorporated herein by reference to Exhibit 10.2 to the Company's Current Report on Form 8-K filed with the SEC on September 12, 2023) **II-7 Table of Contents** **ExhibitNumber** **A** **Description of Document** **#10.23** **Facility Agreement** among the Company and Hanmi Pharmaceutical Co., Ltd. dated August 27, 2024 (incorporated herein by reference to Exhibit 10.1 to the Company's Quarterly Report on

FormÂ 10-Q filed NovemberÂ 12, 2024) â€‡10.24 Â Â Placement Agency Agreement, dated as of NovemberÂ 21, 2024, by and among Aptose Biosciences Inc. and A.G.P./Alliance Global Partners, as placement agent (incorporated herein by reference to ExhibitÂ 10.1 to the Companyâ€™s Current Report on FormÂ 8-K filed NovemberÂ 25, 2024) â€‡10.25 Â Â Form of Securities Purchase Agreement (incorporated herein by reference to ExhibitÂ 10.24 to the Companyâ€™s Registration Statement on FormÂ S-1/A filed OctoberÂ 31, 2024) â€‡10.26 Â Â Sales Agreement, dated as of FebruaryÂ 3, 2025, by and among Aptose Biosciences Inc. and A.G.P./Alliance Global Partners, as sales agent (incorporated herein by reference to ExhibitÂ 10.1 to the Companyâ€™s Current Report on FormÂ 8-K filed FebruaryÂ 3, 2025) â€‡10.27\* Â Â Common Share Purchase Agreement, dated FebruaryÂ 7, 2025, between Aptose Biosciences Inc. and Keystone Capital Partners, LLC (incorporated by reference herein to Exhibit 10.1 to the Companyâ€™s Current Report filed on Form 8-K on FebruaryÂ 12, 2025) â€‡10.28\* Â Â Registration Rights Agreement, dated FebruaryÂ 7, 2025, between Aptose Biosciences Inc. and Keystone Capital Partners, LLC (incorporated by reference herein to Exhibit 10.2 to the Companyâ€™s Current Report filed on Form 8-K on FebruaryÂ 12, 2025) â€‡21.1 Â Â List of Subsidiaries (incorporated herein by reference to Exhibit 21.1 to the Companyâ€™s Current Report filed on Form 10-K on MarchÂ 24, 2023) â€‡23.1\* Â Â Consent of Independent Registered Public Accounting Firm (KPMG) â€‡23.2\* Â Â Consent of McCarthy TÂ©trault LLP (included in Exhibit 5.1) â€‡24.1\* Â Â Powers of Attorney (included on signature page) 107\* Â Â Filing Fees Â + Indicates management contract or compensatory plan \* Filed herewith Â II-8 Table of Contents SIGNATURES Pursuant to the requirements of the Securities Act of 1933, the Company certifies that it has reasonable grounds to believe that it meets all of the requirements for filing on Form S-1 and has duly caused this registration statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of Toronto, Ontario, Canada on February 13, 2025. Â Aptose Biosciences Inc. By: Â /s/ Fletcher Payne Â Fletcher Payne Â Senior Vice President and Chief Financial Officer POWER OF ATTORNEY KNOW ALL PERSONS BY THESE PRESENTS, that each person whose signature appears below hereby constitutes and appoints William G. Rice and Fletcher Payne, and each of them, either of whom may act without the joinder of the other, as his or her true and lawful agent, proxy and attorney-in-fact, with full power of substitution and resubstitution, for him or her and in his or her name, place and stead, in any and all capacities, to (i)Â act on, sign and file with the Securities and Exchange Commission any and all amendments (including post-effective amendments) to this registration statement together with all schedules and exhibits thereto and any subsequent registration statement filed pursuant to Rule 462(b) under the Securities Act of 1933, as amended, together with all schedules and exhibits thereto, (ii)Â act on, sign and file such certificates, instruments, agreements and other documents as may be necessary or appropriate in connection therewith, (iii)Â act on and file any supplement to any prospectus included in this registration statement or any such amendment or any subsequent registration statement filed pursuant to Rule 462(b) under the Securities Act of 1933, as amended, and (iv)Â take any and all actions which may be necessary or appropriate to be done, as fully for all intents and purposes as he might or could do in person, hereby approving, ratifying and confirming all that such agent, proxy and attorney-in-fact or any of his substitutes may lawfully do or cause to be done by virtue thereof. Pursuant to the requirements of the Securities Act of 1933, this registration statement has been signed by the following persons in the capacities and on the dates indicated. Â Name Â Â Positions Â Date /s/ William G. Rice William G. Rice Â Â President, Chief Executive Officer and Chairman of the Board of Directors (Principal Executive Officer) Â February 13, 2025 /s/ Fletcher Payne Fletcher Payne Â Â Senior Vice President and Chief Financial Officer (Principal Financial and Accounting Officer) Â February 13, 2025 /s/ Denis Burger Denis Burger Â Â Director Â February 13, 2025 /s/ Carol Ashe Carol Ashe Â Â Director Â February 13, 2025 Â II-1 Table of Contents /s/ Dr.Â ErichÂ M. Platzer Dr.Â ErichÂ M. Platzer Â Â Director Â February 13, 2025 /s/ Dr.Â BerndÂ R. Seizinger Dr.Â BerndÂ R. Seizinger Â Â Director Â February 13, 2025 /s/ Dr.Â Mark Vincent Dr.Â Mark Vincent Â Â Director Â February 13, 2025 /s/ Warren Whitehead Warren Whitehead Â Â Director Â February 13, 2025 AUTHORIZED REPRESENTATIVE Pursuant to the requirements of SectionÂ 6(a) of the Securities Act of 1933, the undersigned has signed this registration statement, solely in the capacity of the duly authorized representative of Aptose Biosciences Inc. in the United States, on this 13 day of February, 2025. Â APTOSE BIOSCIENCES U.S. INC. By: Â /s/ Fletcher Payne Â Name: Â Fletcher Payne Â Title: Â Senior Vice President and Chief Financial Officer Â II-2 EX-5.1 2 d910194dex51.htm EX-5.1 EX-5.1 Exhibit 5.1 Â Â Â Â McCarthy TÂ©trault LLP Suite 5300, TD Bank Tower Box 48, 66 Wellington Street West Toronto (Ontario) M5K 1E6 Canada Tel: â‰%416-362-1812 Fax: 416-868-0673 Â Â Â February 13, 2025 Aptose Biosciences Inc. 66 Wellington Street West Suite 5300, TD Bank Tower, Box 48 Toronto, Ontario, M5K 1E6 Dear Sir/Mesdames: We have acted as Canadian counsel to Aptose Biosciences Inc. (theÂ â€œCompanyâ€) in connection with the preparation and filing with the United States Securities and Exchange Commission (theÂ â€œCommissionâ€) under the United States Securities Act of 1933, as amended (theÂ â€œSecurities Actâ€), of the Companyâ€™s Registration Statement on Form S-1 dated February 13, 2025 (theÂ â€œRegistration Statementâ€), relating to the resale from time to time by Keystone Capital Partners, LLC (theÂ â€œSelling Shareholderâ€) of up to an aggregate of 12,030,218Â common shares of the Company (theÂ â€œCommon Sharesâ€) pursuant to a common share purchase agreement entered into between the Company and the Selling Shareholder dated as of FebruaryÂ 7, 2025 (theÂ â€œPurchase Agreementâ€), which includes (i)Â 11,789,615Â Common Shares that the Company may sell to the Selling Shareholder, from time to time, at the Companyâ€™s sole discretion, pursuant to the Purchase Agreement (theÂ â€œPlacement Sharesâ€), (ii)Â 72,181 Common Shares will be issued to the Selling Shareholder on the Commencement Date (as defined in the Purchase Agreement) as consideration for its commitment to purchase Common Shares under the Purchase Agreement (theÂ â€œInitial Commitment Sharesâ€), and (iii)Â 168,423 Common Shares to be issued to the Selling Shareholder as consideration for its commitment to purchase Common Shares under the Purchase Agreement (theÂ â€œBack End Commitment Sharesâ€). Scope of Review, Assumptions and Qualifications As counsel, we have made such investigations and examined the originals, or duplicate, certified, conformed, facsimiled or photostatic copies of such corporate records, agreements, documents and other instruments and have made such other investigations as we have considered necessary or relevant for the purposes of this opinion, including: Â Â (a) the Registration Statement, including the prospectus contained therein; Â Â (b) the Purchase Agreement; Â Â (c) the registration rights agreement dated as of FebruaryÂ 7, 2025 between the Company and the Selling Shareholder (theÂ â€œRegistration Rights Agreementâ€); Â Â (d) the articles and by-laws of the Company; Â Â page 2 Â Â (e) a certificate of compliance dated February 13, 2025 issued in respect of the Company pursuant to the Canada Business Corporations Act (theÂ â€œCertificate of Complianceâ€); and Â Â (f) a certificate of Fletcher Payne, the Senior Vice President, Chief Financial Officer and Chief Business Officer of the Company, as to certain factual matters dated the date hereof. The Purchase Agreement and the Registration Rights Agreement are collectively referred to herein as theÂ â€œTransaction

Documents. We have also examined originals or copies, certified or otherwise identified to our satisfaction, of such records of the Company and such agreements, certificates of public officials, certificates of officers, or other representatives of the Company, and such other documents as we have deemed necessary or appropriate as a basis for the opinion set forth herein. In our examination, we have assumed the legal capacity of all natural persons, the genuineness of all signatures, the authenticity of all documents submitted to us as originals, the conformity to original documents of all documents submitted to us as certified, conformed, photostatic, electronic, or facsimile copies and the authenticity of the originals of such documents. In making our examination of executed documents or documents which may be executed, we have assumed that the parties thereto, other than the Company, had or will have the power, corporate or other, to enter into and perform all obligations thereunder and have also assumed the due authorization by all requisite action, corporate or other, and execution and delivery by such parties, of such documents and that such documents constitute or will constitute valid and binding obligations of the parties thereto. We have also assumed that the Certificate of Compliance will continue to be accurate as at the date of issuance of any Back End Commitment Shares or Placement Shares. In connection with our opinions expressed below, we have assumed that, at or prior to the time of the delivery of any such Back End Commitment Shares or Placement Shares, the authorization to issue the Back End Commitment Shares and the Placement Shares pursuant to the Purchase Agreement will not have been modified or rescinded by the Board of Directors of the Company and there will not have occurred any change in law affecting the validity or enforceability of such issuance of Back End Commitment Shares or Placement Shares. We have also assumed that neither the issuance and delivery of the Back End Commitment Shares or Placement Shares, nor the compliance by the Company with the terms of the Purchase Agreement, will violate any applicable federal, provincial or state law or will result in a violation of any provision of any instrument or agreement then binding upon the Company or any restriction imposed by any court or governmental body having jurisdiction over the Company. The opinions expressed herein are limited to the federal laws of Canada applicable therein (the "Applicable Law"). Opinion Based upon and subject to the foregoing, we are of the opinion that: 1. The Initial Commitment Shares when issued and delivered in the manner stated in, and in accordance with the terms of the Purchase Agreement, will be validly issued as fully paid and non-assessable common shares of the Company. 2. The Back End Commitment Shares, when issued and delivered in the manner stated in, and in accordance with the terms of the Purchase Agreement, will be validly issued as fully paid and non-assessable common shares of the Company. 3. The Placement Shares, when issued, sold and delivered in the manner and for the consideration stated in the Purchase Agreement, and upon payment of the consideration provided therein to the Company, will be validly issued as fully paid and non-assessable common shares of the Company. We hereby consent to the filing of this opinion with the Commission as an exhibit to the Registration Statement. We also consent to the reference to our firm under the heading "Legal Matters" in the prospectus contained in the Registration Statement. In giving this consent, we do not thereby admit that we are in the category of persons whose consent is required under the Securities Act or the rules and regulations promulgated thereunder. This opinion is expressed as of the date hereof unless otherwise expressly stated, and we disclaim any undertaking to advise you of any subsequent changes of the facts stated or assumed herein or any subsequent changes in Applicable Law. Yours truly, (s) McCarthy Tétrault LLP EX-10.27 3 d910194dex1027.htm EX-10.27 EX-10.27 Exhibit 10.27 COMMON SHARE PURCHASE AGREEMENT Dated as of February 7, 2025 by and among APTOSE BIOSCIENCES INC., And KEYSTONE CAPITAL PARTNERS, LLC TABLE OF CONTENTS Page ARTICLE I PURCHASE AND SALE OF COMMON SHARES 1.1. 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**ARTICLE I PURCHASE AND SALE OF COMMON SHARES**

**Section 1.1. Purchase and Sale of Stock.** Upon the terms and subject to the conditions of this Agreement, during the Investment Period, the Company, in its sole discretion, shall have the right, but not the obligation, to issue and sell to the Investor, and the Investor shall purchase from the Company, up to the lesser of (a) \$25,000,000 and (b) 19.99% of the Company's outstanding shares of Common Shares as of the date of this Agreement, including the Commitment Shares (the "Total Purchase Commitment"), unless (i) shareholder approval is obtained to issue more than such 19.99% or (ii) the Average Price is equal to or exceeds the Minimum Price, to the extent applicable under Section 2.4, by the delivery to the Investor of Fixed Purchase Notices, VWAP Purchase Notices, or Additional VWAP Purchase Notices, as provided in Article II. Notwithstanding anything to the contrary in this Agreement, the Investor acknowledges and agrees that any resale or solicitation for resale of Securities by the Investor pursuant to this Agreement shall be made solely in the United States and no resale of Securities will be carried out by the Investor in Canada or on the Toronto Stock Exchange (the "TSX").

**Section 1.2. Closing Date; Settlement Dates.** This Agreement shall become effective and binding (the "Closing") upon (a) the delivery by the Company to its Transfer Agent of irrevocable instructions to issue the Initial Commitment Shares to the Investor or its designees as provided in Sections 6.1 and 9.1(ii), (b) the delivery of counterpart signature pages of this Agreement and the Registration Rights Agreement executed by each of the parties hereto and thereto, and (c) the delivery of all other documents, instruments and writings required to be delivered at the Closing, in each case as provided in Section 6.1, to the offices of Pryor Cashman LLP, 7 Times Square, New York, NY 10036, at 1:00 p.m., New York City time, on the Closing Date, or such other time and place as the parties hereto shall agree. In consideration of, and in express reliance upon, the representations, warranties and covenants contained in, and upon the terms and subject to the conditions of, this Agreement, during the Investment Period, the Company, at its sole option and discretion, may issue and sell to the Investor, and, if the Company elects to so issue and sell, the Investor shall purchase from the Company, the Shares in respect of each Fixed Purchase, VWAP Purchase and Additional VWAP Purchase (each, a "Settlement"). The payment for the Shares in respect of each Fixed Purchase, VWAP Purchase and Additional VWAP Purchase shall occur (i) on the second (2nd) Trading Day following the applicable Fixed Purchase Date, VWAP Purchase Date and Additional VWAP Purchase Date, and (ii) in accordance with Article II hereof; provided, that all of the conditions precedent in Article VI shall have been fulfilled at the applicable times set forth in Article VI. The Company shall issue such Shares as directed by the Investor on (i) the same Trading Day that payment for such Fixed Purchase, VWAP Purchase, or Additional VWAP Purchase, as applicable, is received if such payment is received by 2:00 p.m., New York City time, or (ii) the next Trading Day if payment for such Fixed Purchase, VWAP Purchase, or Additional VWAP Purchase, as applicable, is received after 2:00 p.m., New York City time (each of such date, the "Share Settlement Date"). If the Company or the Transfer Agent shall fail for any reason, other than a failure of the Investor or its Broker-Dealer to set up a DWAC and required instructions, to electronically transfer any Shares as DWAC Shares in respect of a Fixed Purchase, a VWAP Purchase, and an Additional VWAP Purchase on the Share Settlement Date in compliance with this Section 1.2, and if on or after the Trading Day immediately following such Share Settlement Date the Investor purchases (in an open market transaction or otherwise) Common Shares to deliver in satisfaction of a sale by the Investor of such Shares that the Investor anticipated receiving from the Company in respect of such Fixed Purchase, VWAP Purchase, or Additional VWAP Purchase (as applicable), then the Company shall, within two (2) Trading Days after the Investor's request, either (1) pay cash to the Investor in an amount equal to the Investor's total purchase price (including brokerage commissions, if any) for the Common Shares so purchased (the

â€œCover Priceâ€), at which point the Companyâ€™s obligation to deliver such Shares as DWAC Shares shall terminate, or (ii)Â promptly honor its obligation to deliver to the Investor such Shares as DWAC Shares and pay cash to the Investor in an amount equal to the excess (if any) of the Cover Price over the total purchase price paid by the Investor pursuant to this Agreement for all of the Shares to be purchased by the Investor in connection with such Fixed Purchase or VWAP Purchase (as applicable). The Company shall not issue any fraction of a Common Share upon any Fixed Purchase, VWAP Purchase or Additional VWAP Purchase. If the issuance would result in the issuance of a fraction of a Common Share, the Company shall round such fraction of a Common Share up or down to the nearest whole share. All payments made under this Agreement shall be made in lawful money of the United States of America or wire transfer of immediately available funds to such account as the Company may from time to time designate by written notice in accordance with the provisions of this Agreement. Whenever any amount expressed to be due by the terms of this Agreement is due on any day that is not a Trading Day, the same shall instead be due on the next succeeding day that is a Trading Day. SectionÂ 1.3. Initial Public Announcements and Required Filings. The Company shall, within the time period required under the Exchange Act, file with the Commission a Current Report on Form 8-K describing the material terms of the transactions contemplated by the Transaction Documents, including, without limitation, the issuance of the Commitment Shares to the Investor, and attaching as exhibits thereto copies of each of this Agreement, the Registration Rights Agreement and, if applicable, any press release issued by the Company disclosing the execution of this Agreement by the Company (including all exhibits thereto, the â€œCurrent Reportâ€). The Company shall provide the Investor a reasonable opportunity to comment on a draft of the Current Report prior to filing the Current Report with the Commission and shall give due consideration to all such comments. From and after the filing of the Current Report with the Commission, the Company shall have publicly disclosed all material, nonpublic information delivered to the Investor (or the Investorâ€™s representatives or agents) by the Company, any of its Subsidiaries, or any of their respective officers, directors, employees, agents or representatives (if any) in connection with the transactions contemplated by the Transaction Documents. The Investor covenants that until such time as the transactions contemplated by this Agreement are publicly disclosed by the Company as described in this SectionÂ 1.3, the Investor shall maintain the confidentiality of all disclosures made to it in connection with the transactions contemplated by the Transaction Documents (including the existence and terms of the transactions), except that the Investor may disclose the terms of such transactions to its financial, accounting, legal and other advisors (provided that the Investor directs such Persons to maintain the confidentiality of such information). The Company shall use its commercially reasonable efforts to prepare and, as soon as practicable, but in no event later than the applicable Filing Deadline, file with the Commission the Registration Statement covering only the resale by the Investor of the Registrable Securities in accordance with the Securities Act and the Registration Rights Agreement. At or before 8:30 a.m. (New York City time) on the Trading Day immediately following the Effective Date of the New Registration Statement (or any post-effective amendment thereto), the Company shall use its commercially reasonable efforts to file with the Commission in accordance with Rule 424(b) under the Securities Act the final Prospectus to be used in connection with sales pursuant to such Registration Statement (or post-effective amendment thereto). Â 2 ARTICLE II PURCHASE TERMS Subject to the satisfaction or (to the extent permitted by applicable law) waiver of the conditions set forth in this Agreement, the parties agree (unless otherwise mutually agreed upon by the parties in writing) as follows: SectionÂ 2.1. Fixed Purchases. Upon the initial satisfaction of all of the conditions set forth in set forth in SectionÂ 6.2, (the â€œCommencementâ€ and the date of initial satisfaction of all of such conditions, the â€œCommencement Dateâ€) and from time to time thereafter, subject to the satisfaction of all of the conditions set forth in SectionÂ 6.3, and on any business day selected by the Company where the Closing Sale Price on the applicable national market, or quotation service, is equal to or greater than \$0.05, the Company shall have the right, but not the obligation, to direct the Investor, by its delivery to the Investor of a Fixed Purchase Notice, to purchase a Fixed Purchase Share Amount, not to exceed the applicable Fixed Purchase Maximum Amount (calculated as of the applicable Fixed Purchase Date), at the applicable Fixed Purchase Price therefor on the applicable Fixed Purchase Date in accordance with this Agreement (each such purchase a â€œFixed Purchaseâ€); provided, however, that the Investorâ€™s committed obligation under any single Fixed Purchase shall not exceed \$50,000 (provided that all Common Shares in respect of all prior Fixed Purchases, VWAP Purchases and Additional VWAP Purchases shall have been delivered to the Investor via Deposit/Withdrawal at Custodian (â€œDWACâ€)). The Investor is obligated to accept each Fixed Purchase Notice prepared and delivered by the Company in accordance with the terms of and subject to the satisfaction of the conditions contained in this Agreement. If the Company delivers any Fixed Purchase Notice directing the Investor to purchase a Fixed Purchase Share Amount in excess of the applicable Fixed Purchase Maximum Amount (calculated as of the applicable Fixed Purchase Date), such Fixed Purchase Notice shall be void ab initio to the extent of the amount by which the Fixed Purchase Share Amount set forth in such Fixed Purchase Notice exceeds such applicable Fixed Purchase Maximum Amount, and the Investor shall have no obligation to purchase such excess Shares in respect of such Fixed Purchase Notice; provided, however, that the Investor shall remain obligated to purchase the applicable Fixed Purchase Maximum Amount in such Fixed Purchase. The Company may deliver a Fixed Purchase Notice, in the Form attached hereto as Annex 2.1, to the Investor as often as every Trading Day, so long as (i)Â the Closing Sale Price of the Common Shares on such Trading Day is not less than \$0.05 and (ii)Â all Shares subject to all prior Fixed Purchase Notices, VWAP Purchase Notices and Additional VWAP Purchase Notices (as applicable) have theretofore been received by the Investor as DWAC Shares. Since delivery of a Fixed Purchase Notice is made by the Company after market close on the applicable Fixed Purchase Date, the Fixed Purchase Price is determined and fixed at the time the Company delivers the Fixed Purchase Notice to the Investor. At or prior to 5:30 p.m., New York City time, on the Fixed Purchase Date, the Investor shall provide to the Company a written confirmation of such Fixed Purchase setting forth the applicable Fixed Purchase Share Amount and Fixed Purchase Price for such Fixed Purchase (each, a â€œFixed Purchase Confirmationâ€). SectionÂ 2.2. VWAP Purchases. Upon the initial satisfaction of all of the conditions set forth in set forth in SectionÂ 6.2, on the Commencement Date and from time to time thereafter, and on any business day selected by the Company where the Closing Sale Price on the applicable national market, or quotation service is equal to or greater than \$0.05, subject to the satisfaction of all of the conditions set forth in SectionÂ 6.3, in addition to purchases of Shares as described in SectionÂ 2.1, the Company shall also have the right, but not the obligation, to direct the Investor, by its delivery to the Investor of a VWAP Purchase Notice, to purchase the applicable VWAP Purchase Share Amount, not to exceed the applicable VWAP Purchase Maximum Amount, at the applicable VWAP Purchase Price therefor on the applicable VWAP Purchase Date in accordance with this Agreement (each such purchase, a â€œVWAP Purchaseâ€); provided, however, that the Investorâ€™s aggregate committed obligation under a VWAP Purchase and all Additional VWAP Purchases shall not exceed \$1,000,000 in the aggregate for such VWAP Purchase.

Purchase and all such Additional VWAP Purchases, collectively. The Company may deliver VWAP Purchase Notice, in the Form attached hereto as Annex 2.2, to the Investor only (i) on a Trading Day on which the Company also properly submitted a Fixed Purchase Notice providing for a Fixed Purchase of an amount of Shares not less than the applicable Fixed Purchase Maximum Amount (calculated as of the applicable Fixed Purchase Date) and (ii) if all Shares subject to all prior Fixed Purchase Notices, VWAP Purchase Notices, and Additional VWAP Purchase Notices (as applicable) have theretofore been received by the Investor as DWAC Shares. The Investor is obligated to accept each VWAP Purchase Notice prepared and delivered by the Company in accordance with the terms of and subject to the satisfaction of the conditions contained in this Agreement. If the Company delivers any VWAP Purchase Notice directing the Investor to purchase a VWAP Purchase Share Amount in excess of the applicable VWAP Purchase Maximum Amount that the Company is then permitted to include in such VWAP Purchase Notice, such VWAP Purchase Notice shall be void ab initio to the extent of the amount by which the VWAP Purchase Share Amount set forth in such VWAP Purchase Notice exceeds such applicable VWAP Purchase Maximum Amount, and the Investor shall have no obligation to purchase such excess Shares in respect of such VWAP Purchase Notice; provided, however, that the Investor shall remain obligated to purchase the applicable VWAP Purchase Maximum Amount in such VWAP Purchase. At or prior to 9:30 a.m., New York City time, on the Trading Day immediately following the VWAP Purchase Date for each VWAP Purchase, the Investor shall provide to the Company a written confirmation of such VWAP Purchase setting forth the applicable VWAP Purchase Share Amount and VWAP Purchase Price for such VWAP Purchase (each, a "VWAP Purchase Confirmation").

3 Section 2.3. Additional VWAP Purchases. Upon the initial satisfaction of all of the conditions set forth in set forth in Section 6.3 on the Commencement Date and from time to time thereafter, subject to the satisfaction of all of the conditions set forth in Section 6.3, in addition to purchases of Shares as described in Section 2.1 and Section 2.2, the Company shall also have the right, but not the obligation, to direct the Investor, by its delivery to the Investor of an Additional VWAP Purchase Notice, to purchase the applicable Additional VWAP Purchase Share Amount, not to exceed the applicable Additional VWAP Purchase Maximum Amount, at the applicable Additional VWAP Purchase Price therefor on the applicable Additional VWAP Purchase Date in accordance with this Agreement (each such purchase, an "Additional VWAP Purchase"); provided, however, that the Investor's aggregate committed obligation under a VWAP Purchase and all Additional VWAP Purchases, the applicable Additional VWAP Purchase Date therefor is the same Trading Day as the applicable VWAP Purchase Date for such VWAP Purchase, shall not exceed \$1,000,000 in the aggregate for such VWAP Purchase and all such Additional VWAP Purchases, collectively. The Company may deliver an Additional VWAP Purchase Notice, in the Form attached hereto as Annex 2.3, to the Investor only (i) on a Trading Day that is also the VWAP Purchase Date for a VWAP Purchase with respect to which the Company properly submitted to the Investor a VWAP Purchase Notice in accordance with this Agreement on the applicable Fixed Purchase Date for a Fixed Purchase of an amount of Shares not less than the applicable Fixed Purchase Maximum Amount (calculated as of the applicable Fixed Purchase Date) and (ii) if all Shares subject to all prior Fixed Purchase Notices, VWAP Purchase Notices, and Additional VWAP Purchase Notices, including, without limitation, all prior VWAP Purchases and Additional VWAP Purchases effected on the same Trading Day as the Additional VWAP Purchase Date on which the applicable Additional VWAP Purchase is to be effected, as applicable, have theretofore been received by the Investor as DWAC Shares. The Investor is obligated to accept each Additional VWAP Purchase Notice prepared and delivered by the Company in accordance with the terms of and subject to the satisfaction of the conditions contained in this Agreement. If the Company delivers any Additional VWAP Purchase Notice directing the Investor to purchase an Additional VWAP Purchase Share Amount in excess of the applicable Additional VWAP Purchase Maximum Amount that the Company is then permitted to include in such Additional VWAP Purchase Notice, such Additional VWAP Purchase Notice shall be void ab initio to the extent of the amount by which the Additional VWAP Purchase Share Amount set forth in such Additional VWAP Purchase Notice exceeds such applicable Additional VWAP Purchase Maximum Amount, and the Investor shall have no obligation to purchase such excess Shares in respect of such Additional VWAP Purchase Notice; provided, however, that the Investor shall remain obligated to purchase the applicable Additional VWAP Purchase Maximum Amount in such Additional VWAP Purchase. At or prior to 9:30 a.m., New York City time, on the Trading Day immediately following the Additional VWAP Purchase Date for each Additional VWAP Purchase, the Investor shall provide to the Company a written confirmation of such Additional VWAP Purchase setting forth the applicable Additional VWAP Purchase Share Amount and Additional VWAP Purchase Price for such Additional VWAP Purchase (each, an "Additional VWAP Purchase Confirmation").

Section 2.4. Compliance with Rules of Trading Market. (a) Share Issuance Restriction. The Company shall not issue or sell any Common Shares pursuant to this Agreement, and the Investor shall not purchase or acquire any Common Shares pursuant to this Agreement, to the extent that after giving effect thereto, the aggregate number of Common Shares that would be issued pursuant to this Agreement and the transactions contemplated hereby, including the Commitment Shares, would exceed 12,030,218 (representing 19.99% of the Common Shares issued and outstanding immediately prior to the execution of this Agreement), which number of shares shall be reduced, on a share-for-share basis, by the number of Common Shares issued or issuable pursuant to any transaction or series of transactions that may be aggregated with the transactions contemplated by this Agreement under applicable rules of the Trading Market (such maximum number of Common Shares issuable by the Company under this Agreement, the "Aggregate Limit").

(b) General. The Company shall not issue or sell any Common Shares pursuant to this Agreement if such issuance or sale would reasonably be expected to result in (A) a violation of the Securities Act or (B) a breach of the rules of the Trading Market. The provisions of this Section 2.4 shall be implemented in a manner otherwise than in strict conformity with the terms of this Section 2.4 only if necessary to ensure compliance with the Securities Act and the applicable rules of the Trading Market.

Section 2.5. Beneficial Ownership Limitation. Notwithstanding anything to the contrary contained in this Agreement, the Company shall not issue or sell, and the Investor shall not purchase or acquire, any Common Shares under this Agreement which, when aggregated with all other Common Shares then beneficially owned by the Investor and its Affiliates (as calculated pursuant to Section 13(d) of the Exchange Act and Rule 13d-3 promulgated thereunder), would result in the beneficial ownership by the Investor of more than 4.99% of the outstanding Common Shares or if such shares proposed to be issued and sold would materially affect control of the company pursuant to the rules of the TSX (the "Beneficial Ownership Limitation"). Upon the written or oral request of the Investor, the Company shall promptly (but not later than the next business day on which the Transfer Agent is open for business) confirm orally or in writing to the Investor the number of Common Shares outstanding as of the most recent date for which the Transfer Agent has such information. The Investor and the Company shall each cooperate in good faith in the determinations required under this Section 2.5 and the application of this Section 2.5. The Investor's written certification to the Company of the applicability of the Beneficial Ownership Limitation, and the

resulting effect thereof hereunder at any time, shall be conclusive with respect to the applicability thereof and such result absent manifest error. The provisions of this Section 2.5 shall be construed and implemented in a manner otherwise than in strict conformity with the terms of this Section 2.5 to the extent necessary to properly give effect to the limitations contained in this Section 2.5. Section 2.6. Commitment Shares. In consideration for the Investor's execution and delivery of this Agreement, concurrently with the execution and delivery of this Agreement on the Closing Date, the Company shall deliver irrevocable instructions to its Transfer Agent to issue to the Investor or its designee(s) the Initial Commitment Shares, in the form of a certificate or book-entry statement, in the name of the Investor or its designee (in which case such designee name shall have been provided to the Company prior to the Closing Date) not later than 4:00 p.m. (New York City time) on the Closing Date, and prior to the delivery of the initial Fixed Purchase Notice. The Commitment Shares, including the Back End Commitment Shares, shall be included in the Registration Statement. Additionally, in further consideration for the Investor's execution and delivery of this Agreement, the Company shall deliver (i) on the ninetieth (90th) calendar day following the Commencement Date, irrevocable instructions to its Transfer Agent to issue to the Investor or its designee(s) the First Back End Commitment Shares, (ii) on the one hundred and eightieth (180th) calendar day following the Commencement Date, irrevocable instructions to its Transfer Agent to issue to the Investor or its designee(s) the Second Back End Commitment Shares, as applicable, as DWAC Shares, such that each of the First Back End Commitment Share and Second Back End Commitment Shares are credited to the Investor's or its designee's specified DWAC account with DTC under its FAST Program not later than 4:00 p.m. (New York City time) on their respective due date. For the avoidance of doubt, all of the Commitment Shares, including the Back End Commitment Shares, shall be fully earned as of the Closing Date, regardless of whether any Fixed Purchases or VWAP Purchases are effected hereunder and regardless of any subsequent termination of this Agreement. Section 2.7. Personal Information Forms. Notwithstanding anything to the contrary contained in this Agreement, the Company shall not issue or sell, and the Investor shall not purchase or acquire, any Common Shares under this Agreement which, when aggregated with all other Common Shares then beneficially owned by the Investor and its Affiliates, would result in the beneficial ownership by the Investor of more than 4.99% of the then issued and outstanding Common Shares unless and until a personal information form is filed and precleared by the TSX in accordance with its rules. Accordingly, this Agreement may not result in the Investor or any of its affiliates becoming an insider of the Company (as such term is defined under the rules of the TSX) unless and until a personal information form is filed and precleared by the TSX in accordance with its rules.

**ARTICLE III**

**REPRESENTATIONS, WARRANTIES AND COVENANTS OF THE INVESTOR**

The Investor hereby makes the following representations, warranties and covenants to the Company:

Section 3.1. Organization and Standing of the Investor. The Investor is a limited liability company duly organized, validly existing and in good standing under the laws of the State of Delaware.

Section 3.2. Authorization and Power. The Investor has the requisite limited liability company power and authority to enter into and perform its obligations under this Agreement and the Registration Rights Agreement and to purchase or acquire the Securities in accordance with the terms hereof. The execution, delivery and performance by the Investor of this Agreement and the Registration Rights Agreement and the consummation by it of the transactions contemplated hereby and thereby have been duly authorized by all necessary limited liability company action, and no further consent or authorization of the Investor, its Board of Directors or its members is required. Each of this Agreement and the Registration Rights Agreement has been duly executed and delivered by the Investor and constitutes a valid and binding obligation of the Investor enforceable against it in accordance with its terms, except as such enforceability may be limited by applicable bankruptcy, insolvency, reorganization, moratorium, liquidation, conservatorship, receivership, or similar laws relating to, or affecting generally the enforcement of, creditor's rights and remedies or by other equitable principles of general application (including any limitation of equitable remedies).

Section 3.3. No Conflicts. The execution, delivery and performance by the Investor of this Agreement and the Registration Rights Agreement and the consummation by the Investor of the transactions contemplated hereby and thereby do not and shall not (i) result in a violation of such Investor's certificate of formation, limited liability company agreement or other applicable organizational instruments, (ii) conflict with, constitute a default (or an event which, with notice or lapse of time or both, would become a default) under, or give rise to any rights of termination, amendment, acceleration or cancellation of, any material agreement, mortgage, deed of trust, indenture, note, bond, license, lease agreement, instrument or obligation to which the Investor is a party or is bound, (iii) create or impose any lien, charge or encumbrance on any property of the Investor under any agreement or any commitment to which the Investor is party or under which the Investor is bound or under which any of its properties or assets are bound, or (iv) result in a violation of any federal, state, local or foreign statute, rule, or regulation, or any order, judgment or decree of any court or governmental agency applicable to the Investor or by which any of its properties or assets are bound or affected, except, in the case of clauses (ii), (iii) and (iv), for such conflicts, defaults, terminations, amendments, acceleration, cancellations and violations as would not, individually or in the aggregate, prohibit or otherwise interfere with, in any material respect, the ability of the Investor to enter into and perform its obligations under this Agreement and the Registration Rights Agreement. The Investor is not required under any applicable federal, state, local or foreign law, rule or regulation to obtain any consent, authorization or order of, or make any filing or registration with, any court or governmental agency in order for it to execute, deliver or perform any of its obligations under this Agreement and the Registration Rights Agreement or to purchase or acquire the Securities in accordance with the terms hereof; provided, however, that for purposes of the representation made in this sentence, the Investor is assuming and relying upon the accuracy of the relevant representations and warranties and the compliance with the relevant covenants and agreements of the Company in the Transaction Documents to which it is a party.

Section 3.4. Investment Purpose. The Investor is acquiring the Securities for its own account, for investment purposes and not with a view towards, or for resale in connection with, the public sale or distribution thereof, except pursuant to sales registered under or exempt from the registration requirements of the Securities Act; provided, however, that by making the representations herein, the Investor does not agree, or make any representation or warranty, to hold any of the Securities for any minimum or other specific term and reserves the right to dispose of the Securities at any time in accordance with, or pursuant to, a registration statement filed pursuant to the Registration Rights Agreement or an applicable exemption under the Securities Act. The Investor does not presently have any agreement or understanding, directly or indirectly, with any Person to sell or distribute any of the Securities.

Section 3.5. Accredited Investor Status. The Investor is an accredited investor as that term is defined in Rule 501(a) of Regulation D.

Section 3.6. Reliance on Exemptions. The Investor understands that the Securities are being offered and sold to it in reliance on specific exemptions from the registration requirements of U.S. federal and state securities laws and that the Company is relying upon the truth and accuracy of, and the Investor's compliance with,

the representations, warranties, agreements, acknowledgments and understandings of the Investor set forth herein in order to determine the availability of such exemptions and the eligibility of the Investor to acquire the Securities. **6** Section 3.7. Information. All materials relating to the business, financial condition, management and operations of the Company and materials relating to the offer and sale of the Securities which have been requested by the Investor have been furnished or otherwise made available to the Investor or its advisors, including, without limitation, the Commission Documents. The Investor understands that its investment in the Securities involves a high degree of risk. The Investor is able to bear the economic risk of an investment in the Securities and has such knowledge and experience in financial and business matters that it is capable of evaluating the merits and risks of a proposed investment in the Securities. The Investor and its advisors have been afforded the opportunity to ask questions of and receive answers from representatives of the Company concerning the financial condition and business of the Company and other matters relating to an investment in the Securities. Neither such inquiries nor any other due diligence investigations conducted by the Investor or its advisors, if any, or its representatives shall modify, amend or affect the Investor's right to rely on the Company's representations and warranties contained in this Agreement or in any other Transaction Document to which the Company is a party or the Investor's right to rely on any other document or instrument executed and/or delivered in connection with this Agreement or the consummation of the transaction contemplated hereby (including, without limitation, the opinions of the Company's counsel delivered pursuant to Section 6.2(xvi)). The Investor has sought such accounting, legal and tax advice as it has considered necessary to make an informed investment decision with respect to its acquisition of the Securities. The Investor understands that it (and not the Company) shall be responsible for its own tax liabilities that may arise as a result of this investment or the transactions contemplated by this Agreement. Section 3.8. No Governmental Review. The Investor understands that no United States federal or state agency or any other government or governmental agency has passed on or made any recommendation or endorsement of the Securities or the fairness or suitability of the investment in the Securities nor have such authorities passed upon or endorsed the merits of the offering of the Securities. Section 3.9. No General Solicitation. The Investor is not purchasing or acquiring the Securities as a result of any form of general solicitation or general advertising (within the meaning of Regulation D) in connection with the offer or sale of the Securities. Section 3.10. Not an Affiliate. The Investor is not an officer, director or an Affiliate of the Company. As of the date of this Agreement, the Investor does not beneficially own any Common Shares or securities exercisable for or convertible into Common Shares, and during the Restricted Period, Investor will not acquire beneficial ownership of any securities of the Company (including Common Shares or securities exercisable for or convertible into Common Shares) other than pursuant to this Agreement; provided, however, that nothing in this Agreement shall prohibit or be deemed to prohibit the Investor from purchasing, in an open market transaction or otherwise, Common Shares necessary to make delivery by the Investor in satisfaction of a sale by the Investor of Shares that the Investor anticipated receiving from the Company in connection with the settlement of a Fixed Purchase, VWAP Purchase or Additional VWAP Purchase, as applicable, if the Company or the Transfer Agent shall have failed for any reason to electronically transfer all of the Shares subject to such Fixed Purchase, VWAP Purchase or Additional VWAP Purchase, as applicable, to the Investor by crediting the Investor's or its designated Broker-Dealer's account at DTC through its DWAC delivery system, at or prior to the applicable time required by and otherwise in compliance with Section 1.2 of this Agreement. Section 3.11. No Prior Short Sales. At no time prior to the date of this Agreement has any of the Investor, its agents, representatives or Affiliates engaged in or effected, in any manner whatsoever, directly or indirectly, any (i) short sale (as such term is defined in Rule 200 of Regulation SHO of the Exchange Act) of the Common Shares or (ii) hedging transaction, which establishes a net short position with respect to the Common Shares. Section 3.12. Statutory Underwriter Status. The Investor acknowledges that it will be disclosed as an underwriter and a selling shareholder in the New Registration Statement and in any Prospectus contained therein to the extent required by applicable law. Section 3.13. Resales of Securities. The Investor represents, warrants and covenants that it will resell such Shares only pursuant to the Registration Statement in which the resale of such Securities is registered under the Securities Act, in a manner described under the caption "Plan of Distribution" in such Registration Statement, and in a manner in compliance with all applicable U.S. federal and state securities laws, rules and regulations. **7** ARTICLE IV REPRESENTATIONS, WARRANTIES AND COVENANTS OF THE COMPANY Except as set forth in the disclosure schedule delivered by the Company to the Investor (which is hereby incorporated by reference in, and constitutes an integral part of, this Agreement) (the "Disclosure Schedule"), the Company hereby makes the following representations, warranties and covenants to the Investor: Section 4.1. Organization, Good Standing and Power. The Company and each of the Subsidiaries is an entity duly incorporated or otherwise organized, validly existing and in good standing under the laws of the jurisdiction of its incorporation or organization, with the requisite power and authority to own and use its properties and assets and to carry on its business as currently conducted. Neither the Company nor any Subsidiary is in violation nor default of any of the provisions of its respective certificate or articles of incorporation, bylaws or other organizational or charter documents. Each of the Company and the Subsidiaries is duly qualified to conduct business and is in good standing as a foreign corporation or other entity in each jurisdiction in which the nature of the business conducted or property owned by it makes such qualification necessary, except where the failure to be so qualified or in good standing, as the case may be, could not have or reasonably be expected to result in a Material Adverse Effect and no proceeding has been instituted in any such jurisdiction revoking, limiting or curtailing or seeking to revoke, limit or curtail such power and authority or qualification. Section 4.2. Authorization, Enforcement. Each of the Company and its Subsidiaries has the requisite corporate or other power and authority to enter into and perform its obligations under each of the Transaction Documents to which it is a party and, in the case of the Company, to issue the Securities in accordance with the terms hereof and thereof. Except for approvals of the Company's Board of Directors or a committee thereof as may be required in connection with any issuance and sale of Shares to the Investor hereunder (which approvals shall be obtained prior to the delivery of any Fixed Purchase Notice, any VWAP Purchase Notice and any Additional VWAP Purchase Notice), the execution, delivery and performance by the Company of each of the Transaction Documents to which it is a party and the consummation by it of the transactions contemplated hereby and thereby have been duly and validly authorized by all necessary corporate or other action (as applicable) on the part of the Company, and no further consent or authorization of the Company or its Board of Directors or its shareholders, or any other Person is required in order for the Company to execute, deliver and perform its respective obligations under the Transaction Documents to which it is a party. Each of the Transaction Documents to which the Company is a party has been duly executed and delivered by the Company and constitutes a valid and binding obligation of the Company enforceable against the Company in accordance with its terms, except as such enforceability may be limited by applicable bankruptcy, insolvency, reorganization, moratorium, liquidation,

conservatorship, receivership or similar laws relating to, or affecting generally the enforcement of, creditorâ€™s rights and remedies or by other equitable principles of general application (including any limitation of equitable remedies). SectionÂ 4.3. Capitalization. All the outstanding shares in the capital of the Company and each of its Subsidiaries have been duly and validly authorized and issued and are fully paid and non-assessable, and, except as otherwise set forth in the Commission Documents, all outstanding shares in the capital of the Subsidiaries are owned by the Company either directly or through wholly owned Subsidiaries and are free and clear of any perfected security interest or any other security interests, claims, liens or encumbrances. Except as set forth in the Commission Documents and this Agreement, there are no agreements or arrangements under which the Company is obligated to register the sale of any securities under the Securities Act. Except as set forth in the Commission Documents, no shares in the capital of the Company are entitled to preemptive rights and there are no outstanding debt securities and no contracts, commitments, understandings, or arrangements by which the Company is or may become bound to issue additional shares in the capital of the Company or options, warrants, scrip, rights to subscribe to, calls or commitments of any character whatsoever relating to, or securities or rights convertible into or exchangeable for, any shares in the capital of the Company other than those issued or granted in the ordinary course of business pursuant to the Companyâ€™s equity incentive and/or compensatory plans or arrangements. Except for customary transfer restrictions contained in agreements entered into by the Company to sell restricted securities or as set forth in the Commission Documents, the Company is not a party to, and it has no Knowledge of, any agreement restricting the voting or transfer of any shares in the capital stock of the Company. Except as set forth in the Commission Documents, there are no securities or instruments containing anti-dilution or similar provisions that will be triggered by this Agreement or any of the other Transaction Documents or the consummation of the transactions described herein or therein. The Company has made available via EDGAR true and correct copies of the Companyâ€™s Certificate of Incorporation as in effect on the Commencement Date (the â€œCharterâ€), and the Companyâ€™s Bylaws as in effect on the Commencement Date (the â€œBylawsâ€). Â 8 SectionÂ 4.4. Issuance of Securities. The Commitment Shares have been, and the Shares to be issued under this Agreement have been, or with respect to Shares to be purchased by the Investor pursuant to a particular Fixed Purchase Notice, a particular VWAP Purchase Notice or a particular Additional VWAP Purchase Notice, will be, prior to the delivery to the Investor hereunder of such Fixed Purchase Notice, VWAP Purchase Notice, Additional VWAP Purchase Notice, respectively, duly authorized by all necessary corporate action on the part of the Company. The Commitment Shares, when issued to the Investor in accordance with this Agreement, and the Shares, when issued and sold against payment therefor in accordance with this Agreement, shall be validly issued and outstanding, fully paid and non-assessable and free from all liens, charges, taxes, security interests, encumbrances, rights of first refusal, preemptive or similar rights and other encumbrances with respect to the issue thereof, and the Investor shall be entitled to all rights accorded to a holder of Common Shares. SectionÂ 4.5. No Conflicts. The execution, delivery and performance by the Company of each of the Transaction Documents to which it is a party and the consummation by the Company of the transactions contemplated hereby and thereby do not and shall not (i)Â result in a violation of any provision of the Companyâ€™s Charter or Bylaws, (ii)Â conflict with or result in a breach or violation of any of the terms or provisions of, or constitute a default (or an event which, with notice or lapse of time or both, would become a default) under, or give rise to any rights of termination, amendment, acceleration or cancellation of, any material agreement, mortgage, deed of trust, indenture, note, bond, license, lease agreement, instrument or obligation to which the Company or of the Companyâ€™s Subsidiaries is a party or is bound, (iii)Â create or impose a lien, charge or encumbrance on any property or assets of the Company or of the Companyâ€™s Subsidiaries under any agreement or any commitment to which the Company or of the Companyâ€™s Subsidiaries is a party or by which the Company or of the Companyâ€™s Subsidiaries is bound or to which any of their respective properties or assets is subject, or (iv)Â result in a violation of any U.S. federal, state, local or foreign statute, rule, regulation, order, judgment or decree applicable to the Company or of the Companyâ€™s Subsidiaries or by which any property or asset of the Company or of the Companyâ€™s Subsidiaries are bound or affected (including U.S. federal and state securities laws and regulations and the rules and regulations of the Trading Market), except, in the case of clauses (ii), (iii) and (iv), for such conflicts, defaults, terminations, amendments, acceleration, cancellations, liens, charges, encumbrances and violations as would not, individually or in the aggregate, have a Material Adverse Effect. Except as specifically contemplated by this Agreement or the Registration Rights Agreement and as required under the Securities Act and any applicable state securities laws, the Company is not required under any U.S. federal, state, local or foreign law, rule or regulation to obtain any consent, authorization or order of, or make any filing or registration with, any court or governmental agency (including, without limitation, the Trading Market) in order for it to execute, deliver or perform any of its respective obligations under the Transaction Documents to which it is a party, or to issue the Securities to the Investor in accordance with the terms hereof and thereof (other than such consents, authorizations, orders, filings or registrations as have been obtained or made prior to the Closing Date); provided, however, that, for purposes of the representation made in this sentence, the Company is assuming and relying upon the accuracy of the representations and warranties of the Investor in this Agreement and the compliance by it with its covenants and agreements contained in this Agreement and the Registration Rights Agreement. SectionÂ 4.6. Commission Documents, Financial Statements; Disclosure Controls and Procedures; Internal Controls Over Financial Reporting; Accountants. (a) The Company has timely filed (giving effect to permissible extensions in accordance with Rule 12b-25 under the Exchange Act) all Commission Documents for the twelve months preceding the date of this Agreement (the â€œFiled Commission Documentsâ€). The Company has delivered or made available to the Investor via EDGAR or otherwise true and complete copies of the Filed Commission Documents (including, without limitation, the 2023 Form 10-K) prior to the Closing Date. As of its filing date, each Commission Document (including, without limitation, the 2023 Form 10-K) complied in all material respects with the requirements of the Securities Act or the Exchange Act, as applicable, and other federal, state and local laws, rules and regulations applicable to it, and, as of its filing date (or, if amended or superseded by a filing prior to the Closing Date, on the date of such amended or superseded filing). Each Registration Statement, on the date it is filed with the Commission, on the date it is declared effective by the Commission, on each Fixed Purchase Date, each VWAP Purchase Date and each Additional VWAP Purchase Date, shall comply in all material respects with the requirements of the Securities Act (including, without limitation, Rule 415 under the Securities Act) and shall not contain any untrue statement of a material fact or omit to state a material fact required to be stated therein or necessary in order to make the statements therein not misleading, except that this representation and warranty shall not apply to statements in or omissions from such Registration Â 9 Statement made in reliance upon and in conformity with information relating to the Investor furnished to the Company in writing by or on behalf of the Investor expressly for use therein. The Prospectus and each Prospectus Supplement required to be filed pursuant to

this Agreement or the Registration Rights Agreement after the Closing Date, when taken together, on its date, on each Fixed Purchase Date, each VWAP Purchase Date and each Additional VWAP Purchase Date, shall comply in all material respects with the requirements of the Securities Act (including, without limitation, Rule 424(b) under the Securities Act) and shall not contain any untrue statement of a material fact or omit to state a material fact required to be stated therein or necessary in order to make the statements therein, in light of the circumstances under which they were made, not misleading, except that this representation and warranty shall not apply to statements in or omissions from the Prospectus or any Prospectus Supplement made in reliance upon and in conformity with information relating to the Investor furnished to the Company in writing by or on behalf of the Investor expressly for use therein. Each Commission Document (other than the New Registration Statement, or the Prospectus included therein or any Prospectus Supplement thereto) to be filed with or furnished to the Commission after the Closing Date and filed as part of or incorporated by reference in the New Registration Statement, or the Prospectus included therein or any Prospectus Supplement thereto required to be filed pursuant to this Agreement or the Registration Rights Agreement (including, without limitation, the Current Report), when such document is filed with or furnished to the Commission and, if applicable, when such document becomes effective, as the case may be, shall comply in all material respects with the requirements of the Securities Act or the Exchange Act, as applicable, and other federal, state and local laws, rules and regulations applicable to it. There are no outstanding or unresolved comments or undertakings in such comment letters received by the Company from the Commission. The Commission has not issued any stop order or other order suspending the effectiveness of any registration statement filed by the Company under the Securities Act or the Exchange Act. To the Company's knowledge, the Commission has not commenced any enforcement proceedings against the Company or any of its Subsidiaries. (b) The financial statements and schedules of the Company and its consolidated Subsidiaries to be filed as part of or incorporated by reference in the New Registration Statement, or the Prospectus included therein or any Prospectus Supplement thereto, present fairly in all material respects the financial condition, results of operations and cash flows of the Company and its consolidated Subsidiaries as of the dates and for the periods indicated, comply as to form with the applicable accounting requirements of Regulation S-X, and have been prepared in conformity with United States generally accepted accounting principles (â€œGAAPâ€) applied on a consistent basis throughout the periods involved (except as otherwise noted therein). The interactive data in eXtensible Business Reporting Language included or incorporated by reference in the Commission Documents, the New Registration Statement fairly present the information called for in all material respects and have been prepared in accordance with the Commission's rules and guidelines applicable thereto. The statistical and market-related data included or incorporated by reference in the Commission Documents, the New Registration Statement are based on or derived from sources that the Company believes, after reasonable inquiry, to be reliable and accurate and, to the extent required, the Company has obtained the written consent to the use of such data from such source. (c) The Company and the Subsidiaries have established and maintain disclosure controls and procedures (as such term is defined in Rule 13a-15 and 15d-15 under the Exchange Act). Except as disclosed in Commission Documents, such disclosure controls and procedures are designed to ensure that material information relating to the Company and its Subsidiaries is made known to the Company's Chief Executive Officer and its Chief Financial Officer by others within those entities, and such disclosure controls and procedures are effective to perform the functions for which they were established. The Company and the Subsidiaries have established and maintain internal control over financial reporting (as such term is defined in Rule 13a-15 and 15d-15 under the Exchange Act). Except as disclosed in Commission Documents, such internal control over financial reporting is designed to provide reasonable assurance that (A) transactions are executed in accordance with management's general or specific authorization; (B) transactions are recorded as necessary to permit preparation of financial statements in conformity with GAAP and to maintain accountability for assets; (C) access to assets is permitted only in accordance with management's general or specific authorization; (D) 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 (E) the interactive data in eXtensible Business Reporting Language in the Commission Documents fairly presents the information called for in all material respects and are prepared in accordance with the Commission's rules and guidelines applicable thereto. The Company's auditors and the Audit Committee of the Board of Directors of the Company have been advised of: (i) any significant deficiencies and material weaknesses in the design or operation of internal controls which could adversely affect the Company's ability to record, process, summarize, and report financial data; and (ii) any fraud, whether or not material, that involves management or other employees who have a role in the Company's internal controls. Since the date of the most recent evaluation of such disclosure controls and procedures, except as disclosed in Commission Documents, there have been (A) no material weakness in the Company's internal control over financial reporting (whether or not remediated) and (B) no significant changes in internal controls or in other factors that could significantly affect internal controls, including any corrective actions with regard to significant deficiencies. (d) The Company is in compliance with all provisions of the Sarbanes-Oxley Act of 2002, as amended, and the rules and regulations thereunder, which are applicable to it as of the date hereof. (e) The Company's accountants are set forth in the Commission Documents and, to the Knowledge of the Company, such accountants are an independent registered public accounting firm as required by the Securities Act. Section 4.7. Subsidiaries. The 2023 Form 10-K sets forth each subsidiary (each, a â€œSubsidiary,â€ and collectively, the â€œSubsidiariesâ€), of the Company as of the Commencement Date, other than those that may be omitted pursuant to Item 601 of Regulation S-K, showing its jurisdiction of incorporation or organization, and the Company does not have any other Subsidiaries as of the Commencement Date. 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 share capital, from repaying to the Company any loans or advances to such Subsidiary from the Company or from transferring any of such Subsidiary's property or assets to the Company or any other Subsidiary of the Company, except as described or incorporate by reference in, or contemplated by, the Registration Statement and the Prospectus, or as would not reasonably be expected to have a Material Adverse Effect. Section 4.8. No Material Adverse Effect or Material Adverse Change, No Undisclosed Liabilities. Except as otherwise disclosed in any Commission Document, since the end of the Company's most recent audited fiscal year: (i) the Company has not experienced or suffered any Material Adverse Effect, and, to the Company's Knowledge, there exists no current state of facts, condition or event which would have a Material Adverse Effect; (ii) there has not occurred any material adverse change, or any development that would reasonably be expected to result in a prospective material adverse change, in the condition, financial or otherwise, or in the earnings, business or operations of the Company from that set forth in the Commission Documents; (iii) neither the Company nor any of its Subsidiaries has incurred any material liability or obligation, direct or

contingent, nor entered into any material transaction; (iv) the Company has not purchased any of its outstanding Common Shares, nor declared, paid or otherwise made any dividend or distribution of any kind on its Common Shares other than ordinary and customary dividends; and (v) there has not been any material change in the share capital, short-term debt or long-term debt of the Company. Neither the Company nor any of its Subsidiaries has any liabilities, obligations, claims or losses (whether liquidated or unliquidated, secured or unsecured, absolute, accrued, contingent or otherwise) that would be required to be disclosed on a balance sheet of the Company or any Subsidiary (including the notes thereto) in conformity with GAAP and are not disclosed in the Commission Documents, other than those incurred in the ordinary course of the Company's or its Subsidiaries respective businesses since December 31, 2023 and which, individually or in the aggregate, would not reasonably be expected to have a Material Adverse Effect. Section 4.9. No Undisclosed Events or Circumstances. No event, liability, development or circumstance has occurred or exists, or is reasonably expected to exist or occur with respect to the Company, any of its Subsidiaries or any of their respective businesses, properties, liabilities, prospects, operations (including results thereof) or condition (financial or otherwise), that (i) would be required to be disclosed by the Company under applicable securities laws in the Registration Statement or the Prospectus, which has not been disclosed or incorporated by reference in the Registration Statement and the Prospectus, or (ii) would reasonably be expected to have a Material Adverse Effect. Section 4.10. Indebtedness. The Company's annual report on Form 10-K for the year ended December 31, 2023 sets forth, as of December 31, 2023, all outstanding secured and unsecured Indebtedness of the Company or any Subsidiary, or for which the Company or any Subsidiary has commitments through such date. For the purposes of this Agreement, "Indebtedness" shall mean (a) any liabilities for borrowed money or amounts owed in excess of \$100,000 (other than trade accounts payable incurred in the ordinary course of business), (b) all guaranties, endorsements, 11 indemnities and other contingent obligations in respect of Indebtedness of others in excess of \$100,000, whether or not the same are or should be reflected in the Company's balance sheet (or the notes thereto), except guaranties by endorsement of negotiable instruments for deposit or collection or similar transactions in the ordinary course of business; and (c) the present value of any lease payments in excess of \$100,000 due under leases required to be capitalized in accordance with GAAP. There is no existing or continuing default or event of default in respect of any Indebtedness of the Company or any of its Subsidiaries. The Company has not taken any steps, and does not currently expect to take any steps, to seek protection pursuant to Title 11 of the United States Code or any similar federal or state bankruptcy law or law for the relief of debtors, nor does the Company have any Knowledge that its creditors intend to initiate involuntary bankruptcy, insolvency, reorganization or liquidation proceedings or other proceedings for relief under Title 11 of the United States Code or any other federal or state bankruptcy law or any law for the relief of debtors. The Company is financially solvent and is generally able to pay its debts as they become due. Section 4.11. Title to Assets. The Company and each of its Subsidiaries have good and marketable title in fee simple to all real property and good and marketable title to all personal property owned by them which is material to the business of the Company, in each case free and clear of all liens, encumbrances and defects except such as are described or incorporated by reference in the Registration Statement and the Prospectus or such as do not materially affect the value of such property and do not interfere with the use made and proposed to be made of such property by the Company and its Subsidiaries; and any real property and buildings held under lease by the Company and its Subsidiaries are held by it under valid, subsisting and enforceable leases with such exceptions as are not material and do not interfere in any material respect with the use made and proposed to be made of such property and buildings by the Company and its Subsidiaries, in each case except as described or incorporated by reference in the Registration Statement and the Prospectus. Section 4.12. Actions Pending. Except as disclosed in Commission Documents, there is no action, suit, proceeding, inquiry or investigation before or by any court, public board, government agency, self-regulatory organization or body pending or, to the Knowledge of the Company, threatened against or affecting the Company or any of the Subsidiaries, or any of their respective officers or directors in their capacities as such, which would reasonably be expected to have a Material Adverse Effect. Section 4.13. Compliance With Laws. During the 12-month period immediately preceding the date hereof, except as described in the Filed Commission Documents, the Company and each of its Subsidiaries is and at all times has been in material compliance with all applicable U.S. and foreign statutes, rules, or regulations applicable to Company and its Subsidiaries ("Applicable Laws"), except as would not, individually or in the aggregate, reasonably be expected to result in a Material Adverse Effect. Section 4.14. Certain Fees. Except as set forth on Schedule 4.14, no brokerage or finder's fees or commissions are or will be payable by the Company or of the Subsidiaries to any broker, financial advisor or consultant, finder, placement agent, investment banker, bank or other Person with respect to the transactions contemplated by the Transaction Documents. The Investor shall have no obligation with respect to any fees or with respect to any claims made by or on behalf of other Persons for fees of a type contemplated in this Section 4.14 incurred by the Company or of the Subsidiaries that may be due or payable in connection with the transactions contemplated by the Transaction Documents. Section 4.15. Operation of Business. The Company and the Subsidiaries possess or have obtained, all licenses, certificates, consents, orders, approvals, permits and other authorizations issued by, and have made all declarations and filings with, the appropriate federal, state, local or foreign governmental entity that are necessary for the ownership or lease of their respective properties or the conduct of their respective businesses as currently conducted, as described or incorporated by reference in the Registration Statement and the Prospectus (the "Permits"), except where the failure to possess, obtain or make the same would not, individually or in the aggregate, have a Material Adverse Effect. Neither the Company nor any Subsidiary has received written notice of any proceeding relating to revocation or modification of any such Permit or has any reason to believe that such Permit will not be renewed in the ordinary course, except where the failure to obtain any such renewal would not, individually or in the aggregate, have a Material Adverse Effect. This Section 4.15 does not relate to environmental matters, such items being the subject of Section 4.16. 12 Section 4.16. Environmental Compliance. Other than as set forth on Schedule 4.16, to the Knowledge of the Company, the Company and its Subsidiaries are not in violation of any statute, any rule, regulation, decision or order of any governmental agency or body or any court, domestic or foreign, relating to the use, disposal or release of hazardous or toxic substances (collectively, "Environmental Laws"), owns or operates any real property contaminated with any substance that is subject to any Environmental Laws, is liable for any off-site disposal or contamination pursuant to any Environmental Laws, or subject to any claim relating to any Environmental Laws, which violation, contamination, liability or claim would, individually or in the aggregate, reasonably be expected to have a Material Adverse Effect; and the Company is not aware of any pending investigation which might lead to such a claim. Other than as set forth or incorporated by reference in the Registration Statement and the Prospectus, there is no judgment, decree, injunction, rule, writ or order of any governmental entity under any Environmental Laws.

outstanding against the Company and its Subsidiaries which would, individually or in the aggregate, reasonably be expected to have a Material Adverse Effect. SectionÂ 4.17. Material Agreements. Except as set forth in the Commission Documents, neither the Company nor any Subsidiary of the Company is a party to any written or oral contract, instrument, agreement commitment, obligation, plan or arrangement, a copy of which would be required to be filed with the Commission as an exhibit to an annual report on Form 10-K (collectively, â€œMaterial Agreementsâ€). Each of the Material Agreements described in the Commission Documents conform in all material respects to the descriptions thereof contained or incorporated by reference therein. Except as set forth in the Commission Documents, the Company and each of its Subsidiaries have performed in all material respects all the obligations then required to be performed by them under the Material Agreements, have received no notice of default or an event of default by the Company or any of its Subsidiaries thereunder and are not aware of any basis for the assertion thereof, and neither the Company or any of its Subsidiaries nor, to the Knowledge of the Company, any other contracting party thereto are in default under any Material Agreement now in effect, the result of which would have a Material Adverse Effect. Except as set forth in the Commission Documents, each of the Material Agreements is in full force and effect, and constitutes a legal, valid and binding obligation enforceable in accordance with its terms against the Company and/or any of its Subsidiaries and, to the Knowledge of the Company, each other contracting party thereto, except as such enforceability may be limited by applicable bankruptcy, insolvency, reorganization, moratorium, liquidation, conservatorship, receivership or similar laws relating to, or affecting generally the enforcement of, creditorâ€™s rights and remedies or by other equitable principles of general application. SectionÂ 4.18. Transactions With Affiliates. Except as disclosed in the Commission Documents, none of the Companyâ€™s, officers or directors, or to the Companyâ€™s Knowledge, none of the Companyâ€™s shareholders or any family member or Affiliate of any of the foregoing, has either directly or indirectly an interest in, or is a party to, any transaction that would be required to be disclosed as a related party transaction pursuant to Item 404 of Regulation S-K promulgated under the Securities Act. SectionÂ 4.19. Intellectual Property Rights. The Company and its Subsidiaries own or possess adequate rights or licenses to use all material trademarks, trade names, service marks, service mark registrations, service names, patents, patent rights, copyrights, inventions, licenses, approvals, governmental authorizations, trade secrets and rights necessary to conduct their respective businesses as now conducted, except as would not reasonably be expected to have a Material Adverse Effect. None of the Companyâ€™s material trademarks, trade names, service marks, service mark registrations, service names, patents, patent rights, copyrights, inventions, licenses, approvals, government authorizations, trade secrets or other intellectual property rights have expired or terminated, or, by the terms and conditions thereof, will expire or terminate within two years from the date of this Agreement, except as would not reasonably be expected to have a Material Adverse Effect. The Company has no Knowledge of any infringement by the Company or the Subsidiaries of any material trademark, trade name rights, patents, patent rights, copyrights, inventions, licenses, service names, service marks, service mark registrations, trade secret or other similar rights of others, or of any such development of similar or identical trade secrets or technical information by others, and there is no claim, action or proceeding being made or brought against, or to the Companyâ€™s Knowledge, being threatened against, the Company or the Subsidiaries regarding trademark, trade name, patents, patent rights, invention, copyright, license, service names, service marks, service mark registrations, trade secret or other infringement, which would reasonably be expected to have a Material Adverse Effect. Â 13 SectionÂ 4.20. Use of Proceeds. The proceeds from the sale of the Shares by the Company to the Investor shall be used by the Company in the manner as will be set forth in the Prospectus included in any Registration Statement (and any post-effective amendment thereto) and any Prospectus Supplement thereto filed pursuant to the Registration Rights Agreement. SectionÂ 4.21. Investment Company Act Status. The Company is not required to be registered as, and immediately after receipt of payment for the Shares will not be required to be registered as, an â€œinvestment companyâ€ within the meaning of the Investment Company Act of 1940, as amended. SectionÂ 4.22. Benefit Plans; Labor Matters. Each benefit and compensation plan, agreement, policy and arrangement that is maintained, administered or contributed to by the Company for current or former employees or directors of, or independent contractors with respect to, the Company has been maintained in material compliance with its terms and the requirements of any applicable statutes, orders, rules and regulations, and the Company has complied in all material respects with all applicable statutes, orders, rules and regulations in regard to such plans, agreements, policies and arrangements. Each stock option granted under any equity incentive plan of the Company (each, a â€œStock Planâ€) was granted with a per share exercise price no less than the market price per common share on the grant date of such option in accordance with the rules of the Trading Market, and no such grant involved any â€œback-dating,â€ â€œforward-datingâ€ or similar practice with respect to the effective date of such grant; each such option (i)Â was granted in compliance in all material respects with Applicable Laws and with the applicable Stock Plan(s), (ii)Â was duly approved by the Companyâ€™s Board of Directors, and (iii)Â has been properly accounted for in the Companyâ€™s financial statements and disclosed, to the extent required, in the Companyâ€™s filings or submissions with the Commission, and the Trading Market. Neither the Company nor any Subsidiary is in violation of or has received written notice of any violation with respect to any federal or state law, regulation or rule relating to discrimination in the hiring, termination, promotion, employment or pay of employees, nor any applicable federal or state wages and hours law, nor any state law, regulation or rule precluding the denial of credit due to the neighborhood in which a property is situated, the violation of any of which, individually or in the aggregate, would reasonably be expected to have a Material Adverse Effect. There are no existing or, to the Knowledge of the Company, threatened labor disputes with the employees of the Company or any of the Subsidiaries that would reasonably be expected to have, individually or in the aggregate, a Material Adverse Effect. SectionÂ 4.23. Taxes. Each of the Company and the Subsidiaries has filed on a timely basis (including in accordance with any applicable extensions) all material necessary federal, state, local and foreign income and franchise tax returns required to be filed through the date hereof or have properly requested extensions thereof, and have paid all taxes shown as due thereon, and if due and payable, any related or similar assessment, fine or penalty levied against the Company or of the Subsidiaries. Except as disclosed in the Commission Documents, no material tax deficiency has been asserted against any such entity, and the Company has no Knowledge of any tax deficiency that is likely to be asserted against any such entity that, individually or in the aggregate, if determined adversely to any such entity, would reasonably be expected to have a Material Adverse Effect. All material tax liabilities are adequately provided for on the respective books of the Company and the Subsidiaries. SectionÂ 4.24. Insurance. 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 management of the Company believes to be prudent and customary in the businesses in which the Company and its Subsidiaries are engaged, including, but not limited to, insurance covering real and personal property owned or leased by the Company and the Subsidiaries against theft,

damage, destruction, environmental liabilities, acts of vandalism, terrorism, earthquakes, flood and all other risks customarily insured against, all of which insurance is in full force and effect. Neither the Company nor any such Subsidiary has been refused any insurance coverage sought or applied for 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. Section 4.25. Dilutive Effect. The Company is aware and acknowledges that issuance of the Securities could cause dilution to existing shareholders and could significantly increase the outstanding number of Common Shares. The Company further acknowledges that its obligation to issue the Commitment Shares and to issue the Shares pursuant to the terms of a Fixed Purchase, VWAP Purchase or Additional VWAP Purchase in accordance with this Agreement is, in each case, unconditional regardless of the dilutive effect that such issuance may have on the ownership interests of other shareholders of the Company. Section 4.26. Manipulation of Price. The Company has not, and to its Knowledge no Person acting on its behalf has, (i) taken, directly or indirectly, any action designed to cause or to result in the stabilization or manipulation of the price of any security of the Company to facilitate the sale or resale of any of the Securities, (ii) sold, bid for, purchased, or, paid any compensation for soliciting purchases of, any of the Securities, or (iii) paid or agreed to pay to any Person any compensation for soliciting another to purchase any other securities of the Company. Neither the Company nor any of its officers, directors or Affiliates will during the term of this Agreement, and, to the Knowledge of the Company, no Person acting on their behalf will during the term of this Agreement, take any of the actions referred to in the immediately preceding sentence. Section 4.27. Securities Act. Except as set forth in the Disclosure Schedule, the Company has complied and shall comply with all applicable federal and state securities laws in connection with the offer, issuance and sale of the Securities hereunder, including, without limitation, the applicable requirements of the Securities Act. Each Registration Statement, upon filing with the Commission and at the time it is declared effective by the Commission, shall satisfy all of the requirements of the Securities Act to register the resale of the Registrable Securities included therein by the Investor in accordance with the Registration Rights Agreement on a delayed or continuous basis under Rule 415 under the Securities Act at then-prevailing market prices, and not fixed prices. The Company is not, and has not previously been at any time, an issuer identified in, or subject to, Rule 144(i).

Section 4.28. Listing and Maintenance Requirements; DTC Eligibility. The Common Shares are registered pursuant to Section 12(b) of the Exchange Act, and the Company has taken no action designed to, or which to its Knowledge is likely to have the effect of, terminating the registration of the Common Shares pursuant to the Exchange Act nor has the Company received any notification that the Commission is currently contemplating terminating such registration. Except as disclosed in the Filed Commission Documents, the Company has not, in the twelve (12) months preceding the date hereof, received any written notice from any Person to the effect that the Company is not in compliance with the listing or maintenance requirements of the Trading Market. Except as disclosed in the Commission Documents, the Company is in compliance with all such listing and maintenance requirements of the Trading Market. The Common Shares are eligible for participation in the DTC book entry system and has shares on deposit at DTC for transferred electronically to third parties via DTC through its DWAC delivery system. The Company has not received notice from DTC to the effect that a suspension of, or restriction on, accepting additional deposits of the Common Shares, electronic trading or book-entry services by DTC with respect to the Common Shares is being imposed or is contemplated.

Section 4.29. Application of Takeover Protections. The Company and its Board of Directors have taken all necessary action, if any, in order to render inapplicable any control share acquisition, business combination, poison pill (including any distribution under a rights agreement) or other similar anti-takeover provision under the Company's Charter or the federal laws of Canada that is or could become applicable to the Investor as a result of the Investor and the Company fulfilling their respective obligations or exercising their respective rights under the Transaction Documents (as applicable), including, without limitation, as a result of the Company's issuance of the Securities and the Investor's ownership of the Securities. Section 4.30. Foreign Corrupt Practices. Neither the Company or Subsidiary, nor to the Knowledge of the Company, any agent or other Person acting on behalf of the Company, has (i) directly or indirectly, used any funds for unlawful contributions, gifts, entertainment or other unlawful expenses related to foreign or domestic political activity, (ii) made any unlawful payment to foreign or domestic government officials or employees or to any foreign or domestic political parties or campaigns from corporate funds, (iii) failed to disclose fully any contribution made by the Company (or made by any Person acting on its behalf of which the Company is aware) which is in violation of law, or (iv) violated in any material respect any provision of the Foreign Corrupt Practices Act of 1977, as amended (the "FCPA").

Section 4.31. Money Laundering Laws. The operations of the Company and its Subsidiaries are and have been conducted at all relevant times in compliance with applicable financial recordkeeping and reporting requirements of the Currency and Foreign Transactions Reporting Act of 1970, as amended, the money laundering statutes of all jurisdictions, the rules and regulations thereunder and any related or similar rules, regulations or guidelines, issued, administered or enforced by any governmental agency (collectively, the "Money Laundering Laws"); and no action, suit or proceeding by or before any court or governmental agency, authority or body or any arbitrator involving the Company or any Subsidiary with respect to the Money Laundering Laws is pending or, to the Knowledge of the Company, threatened. Section 4.32. OFAC. Neither the Company nor any of its Subsidiaries nor, to the Knowledge of the Company, any director, officer, agent, employee or Affiliate of the Company or any of its Subsidiaries (i) is currently subject to any sanctions administered by the U.S. government, including the Office of Foreign Assets Control of the U.S. Treasury Department ("OFAC") or the U.S. Department of State, the United Nations Security Council, the European Union, or the United Kingdom (including sanctions administered or controlled by His Majesty's Treasury) (collectively, "Sanctions" and such persons, "Sanctioned Persons") or other relevant sanctions authority, and (ii) will use the proceeds of this offering, directly or indirectly, to fund or facilitate the activities of any Sanctioned Persons or entity or any country, region or territory that is, at the time of such funding or facilitation, subject to Sanctions or any person or entity located in a country, region or territory subject to Sanctions (including any administered or enforced by OFAC or the U.S. Department of State), the United Nations Security Council, the European Union, or the United Kingdom (including sanctions administered or controlled by His Majesty's Treasury). Neither the Company nor any of its Subsidiaries nor, to the Knowledge of the Company, any director, officer, agent, employee or Affiliate of the Company or any of its Subsidiaries, is a Person that is, or is 50% or more owned or otherwise controlled by a Person that is: (i) the subject of any Sanctions; or (ii) located, organized or resident in a country, region or territory that is, or whose government is, the subject of Sanctions that broadly prohibit dealings with that country, region or territory (including at the time of this agreement, Cuba, Iran, North Korea, Syria and the Crimea, Kherson, Zapirizhzhia, the so-called Denetsk People's

republic and the so-called Luhansk Peopleâ€™s Republic regions of Ukraine) (collectively, â€œSanctioned Countriesâ€ and each, a â€œSanctioned Countryâ€). The Company and its Subsidiaries have not engaged in any dealings or transactions with or for the benefit of Sanctioned Persons, or with or in a Sanctioned Country, in the preceding 3 years, nor does the Company or any of its Subsidiaries have any plans to deal or transact with Sanctioned Persons, or with or in Sanctioned Countries. SectionÂ 4.33. Information Technology; Compliance with Data Privacy Laws. To the best of the Companyâ€™s knowledge and as previously disclosed under Commission Documents, (i)Â there have been no material breaches or violations of (or unauthorized access to) the Company, or the Subsidiariesâ€™ information technology assets and equipment, computers, systems, networks, hardware, software, websites, applications and databases (collectively, the â€œIT Systemsâ€) or any personal, personally identifiable, sensitive, confidential or regulated data (collectively, â€œPersonal Dataâ€) processed or stored by or on behalf of the Company or the Subsidiaries, except for those that have been remedied without material cost or liability or the duty to notify any regulator, nor are there any pending internal investigations of the Company or the Subsidiaries relating to the same and (ii)Â the Company and the Subsidiaries are presently in compliance in all material respects with all Applicable Laws, statutes and regulations and contractual obligations relating to the privacy and security of IT Systems and Personal Data. SectionÂ 4.34. No Disqualification Events. None of the Company, any of their predecessors, any affiliated issuer, any director, general partner executive officer, other officer of the Company participating in the offering contemplated hereby, any beneficial owner of 20% or more of the Companyâ€™s outstanding voting equity securities, calculated on the basis of voting power, nor any promoter (as that term is defined in Rule 405 under the Securities Act) connected with the Company in any capacity at the time of sale (each, an â€œIssuer Covered Personâ€) is subject to any of the â€œBad Actorâ€ disqualifications described in Rule 506(d)(1)(i) to (viii)Â under the Securities Act (a â€œDisqualification Eventâ€), except for a Disqualification Event covered by Rule 506(d)(2) or (d)(3) under the Securities Act. The Company have exercised reasonable care to determine whether any Issuer Covered Person is subject to a Disqualification Event. SectionÂ 4.35. ERISA. Except for the Companyâ€™s 401(k) plan for participation by the Companyâ€™s employees or as set forth or incorporated by reference in the Registration Statement and the Prospectus, the Company is not a party to an â€œemployee benefit plan,â€ as defined in SectionÂ 3(3) of the Employee Retirement Income Security Act of 1974, as amended (â€œERISAâ€), which: (i)Â is subject to Title IV of ERISA and (ii)Â is or was at any time maintained, administered or contributed to by the Company or any of its ERISA Affiliates (as defined hereafter). These plans are referred to collectively herein as the â€œEmployee Plans.â€ An â€œERISA Affiliateâ€ of any person or entity means any other person or entity which, together with that Person or entity, could be treated as a single employer under SectionÂ 414(b), (c), (m) or (o)Â of the Code. Each Employee Plan has been maintained in material compliance with its terms and the requirements of Applicable Law. Except as set forth or incorporated by reference in the Registration Statement and the Prospectus, there is no liability in respect of post-retirement health and medical benefits for retired employees of the Company or any of its ERISA Affiliates, other than medical benefits required to be continued under Applicable Law. No â€œprohibited transactionâ€ (as defined in either SectionÂ 406 of ERISA or SectionÂ 4975 of the Code) has occurred with respect to any Employee Plan; and each Employee Plan that is intended to be qualified under SectionÂ 401(a) of the Code is so qualified, and nothing has occurred, whether by action or by failure to act, which could cause the loss of such qualification. Â 16 SectionÂ 4.36. No Other Similar Agreement. Except as disclosed in the Commission Documents, other than the Transaction Documents to which it is a party, the Company is not a party to any agreement that is (or that contains any term, obligation or restriction that is) in effect on the date hereof with any Person, other than the Investor, relating to any â€œat the market offering,â€ â€œequity line of creditâ€ or any other similar continuous offering in which the Company may offer, issue or sell Common Shares or Common Shares Equivalents at a future determined price. SectionÂ 4.37. Acknowledgement Regarding Investorâ€™s Acquisition of Securities. The Company acknowledges and agrees that the Investor is acting solely in the capacity of an armâ€™s-length purchaser with respect to this Agreement and the transactions contemplated by the Transaction Documents. The Company further acknowledges that the Investor is not acting as a financial advisor or fiduciary of the Company (or in any similar capacity) with respect to this Agreement and the transactions contemplated by the Transaction Documents, and any advice given by the Investor or any of its representatives or agents in connection therewith is merely incidental to the Investorâ€™s acquisition of the Securities. The Company further represents to the Investor that the Companyâ€™s decision to enter into the Transaction Documents to which it is a party has been based solely on the independent evaluation of the transactions contemplated thereby by the Company, respectively, and their respective representatives. The Company acknowledges and agrees that the Investor has not made and does not make any representations or warranties with respect to the transactions contemplated by the Transaction Documents other than those specifically set forth in Article III. ARTICLE V ADDITIONAL COVENANTS The Company covenants with the Investor, and the Investor covenants with the Company, as follows, which covenants of one party are for the benefit of the other party during the Investment Period (and with respect to the Company for the period following the termination of this Agreement specified in SectionÂ 7.3 pursuant to and in accordance with SectionÂ 7.3): SectionÂ 5.1. Securities Compliance. The Company shall notify the Commission and the Trading Market, if and as applicable, in accordance with their respective rules and regulations, of the transactions contemplated by the Transaction Documents, and shall take all necessary action, undertake all proceedings and obtain all registrations, permits, consents and approvals for the legal and valid issuance of the Securities to the Investor in accordance with the terms of the Transaction Documents, as applicable. SectionÂ 5.2. Reservation of Common Shares. The Company has available and the Company shall reserve and keep available at all times, free of preemptive and other similar rights of stockholders, 132,000,000 shares of authorized but unissued Common Shares to enable the Company to time effect the issuance, sale and delivery of all Shares pursuant to this Agreement. As of the date of this Agreement the Company has reserved, and as of the Commencement Date shall have continued to reserve, out of its authorized and unissued Common Shares, 15,000,000 Common Shares solely for the purpose of effecting Fixed Purchases, VWAP Purchases and Additional VWAP Purchases under this Agreement, and 1,000,000 Common Shares solely for the purpose of issuing the Commitment Shares not payable at the Closing. The number of Common Shares so reserved for the purpose of effecting Fixed Purchases, VWAP Purchases and Additional VWAP Purchases under this Agreement may be increased from time to time by the Company from and after the Commencement Date, and such number of reserved shares may be reduced from and after the Commencement Date only by the number of Shares actually issued, sold and delivered to the Investor pursuant to any Fixed Purchase, VWAP Purchase and Additional VWAP Purchase effected from and after the Commencement Date pursuant to this Agreement. Â 17 SectionÂ 5.3. Registration and Listing. The Company shall use its commercially reasonable efforts to cause the Common Shares to continue to be registered as a class of securities under Sections 12(b) of the Exchange Act, and to comply with its reporting and filing obligations under the Exchange Act, and shall not

take any action or file any document (whether or not permitted by the Securities Act or the Exchange Act) to terminate or suspend such registration or to terminate or suspend its reporting and filing obligations under the Exchange Act or Securities Act, except as permitted herein. The Company shall use its commercially reasonable efforts to continue the listing and trading of its Common Shares and the listing of the Securities purchased by the Investor hereunder on the Trading Market and to comply with the Company's reporting, filing and other obligations under the b rules and regulations of the Trading Market. The Company shall not take any action which could be reasonably expected to result in the delisting or suspension of the Common Shares on the Trading Market. If the Company receives any final and non-appealable notice that the listing or quotation of the Common Shares on the Trading Market shall be terminated on a date certain, the Company shall promptly (and in any case within 24 hours) notify the Investor of such fact in writing and shall use its commercially reasonable efforts to cause the Common Shares to be listed or quoted on another Eligible Market. Section 5.4. Compliance with Laws. (i) During the Investment Period, (a) the Company shall comply, and the Company shall cause each Subsidiary to comply, with all laws, rules, regulations and orders applicable to the business and operations of the Company and the Subsidiaries, except as would not have a Material Adverse Effect, and (b) the Company shall comply with all applicable provisions of the Securities Act and the Exchange Act, including Regulation M thereunder, applicable state securities or "Blue Sky" laws, and applicable listing rules of the Trading Market or Eligible Market, except as would not, individually or in the aggregate, prohibit or otherwise interfere with the ability of the Company to enter into and perform its obligations under this Agreement in any material respect or for Investor to conduct resales of Securities under the Registration Statement in any material respect. Without limiting the foregoing, none of the Company, or any of the Subsidiaries, nor to the Knowledge of the Company, any of their respective directors, officers, agents, employees or any other Persons acting on their behalf shall, in connection with the operation of the respective businesses of the Company and the Subsidiaries, (1) use any corporate funds for unlawful contributions, payments, gifts or entertainment or to make any unlawful expenditures relating to political activity to government officials, candidates or members of political parties or organizations, (2) pay, accept or receive any unlawful contributions, payments, expenditures or gifts, or (3) violate or operate in noncompliance with any export restrictions, anti-boycott regulations, embargo regulations or other applicable domestic or foreign laws and regulations, including, without limitation, the FCPA and the Money Laundering Laws. (ii) The Investor shall comply with all laws, rules, regulations and orders applicable to the performance by it of its obligations under this Agreement and its investment in the Securities, except as would not, individually or in the aggregate, prohibit or otherwise interfere with the ability of the Investor to enter into and perform its obligations under this Agreement in any material respect. Without limiting the foregoing, the Investor shall comply with all applicable provisions of the Securities Act and the Exchange Act, including Regulation M thereunder, and all applicable state securities or "Blue Sky" laws.

Section 5.5. Keeping of Records and Books of Account; Due Diligence. (i) The Investor and the Company shall each maintain records showing the remaining the remaining Total Purchase Commitment, the remaining Aggregate Limit and the dates and Fixed Purchase Share Amount, VWAP Purchase Share Amount and Additional VWAP Purchase Share Amount for each Fixed Purchase, each VWAP Purchase and each Additional VWAP Purchase, respectively. (ii) The Investor shall have the right, from time to time as the Investor may reasonably deem appropriate, and upon reasonable advance notice to the Company, to perform reasonable due diligence on the Company during normal business hours; provided, however, that after the Closing Date, the Investor's continued due diligence of the Company shall not be a condition precedent to, or otherwise impair, delay or modify in any respect, the Company's right to deliver to the Investor any Fixed Purchase Notice, any VWAP Purchase Notice and any Additional VWAP Purchase Notice, or the Investor's obligation to purchase the Shares subject thereto, pursuant to this Agreement. The Company and its officers and employees shall provide information on a reasonably timely basis and otherwise reasonably cooperate with the Investor in connection with any reasonable request by the Investor related to the Investor's due diligence of the Company. 18 Section 5.6. No Frustration; Prohibition of Certain Issuances Before Settlement of Purchases; No Similar Transactions. (i) No Frustration. The Company shall not enter into, announce or recommend to the Company's shareholders any agreement, plan, arrangement or transaction in or of which the terms thereof would restrict, materially delay, conflict with or impair the ability or right of the Company to perform its obligations under the Transaction Documents to which it is a party, including, without limitation, the obligation of the Company to deliver (i) the Commitment Shares, not including the Back End Commitment Shares, to the Investor not later than 4:00 p.m. (New York time) on the Trading Day immediately following the Closing Date in accordance with Section 9.1(ii) of this Agreement, (ii) the Shares to the Investor in respect of a Fixed Purchase as DWAC Shares not later than 10:00 a.m., New York City time, on the Trading Day immediately following the applicable Fixed Purchase Date for such Fixed Purchase in accordance with Section 2.1 of this Agreement, (iii) the Shares to the Investor in respect of a VWAP Purchase as DWAC Shares not later than 10:00 a.m., New York City time, on the Trading Day immediately following the applicable VWAP Purchase Date for such VWAP Purchase in accordance with Section 2.2 of this Agreement, (iv) Shares to the Investor in respect of an Additional VWAP Purchase as DWAC Shares not later than 10:00 a.m., New York City time, on the Trading Day immediately following the applicable Additional VWAP Purchase Date for such Additional VWAP Purchase in accordance with Section 2.3 of this Agreement, and (v) the Back End Commitment Shares. For the avoidance of doubt, nothing in this Section 5.6(i) shall in any way limit the Company's right to terminate this Agreement in accordance with Section 7.2 (subject in all cases to Section 7.3). (ii) No Dilutive Issuances During Reference Periods. Neither the Company nor any Subsidiary shall issue, sell or grant any right, option or warrant to purchase, or issue, sell or grant any right to reprice (or reset the purchase price therefor), or otherwise dispose of for cash (or enter into any agreement, plan or arrangement contemplating any of the foregoing, or seek to utilize any existing agreement, plan or arrangement to effect any of the foregoing), or announce any offer, issuance, sale or grant of any option or warrant to purchase or other disposition for cash (or any agreement, plan or arrangement therefor), at any time during the following periods: (i) with respect to each Fixed Purchase for which the Company has delivered to the Investor a Fixed Purchase Notice, the period beginning on the applicable Fixed Purchase Date for such Fixed Purchase and ending on the third (3rd) Trading Day next following the Trading Day on which the Investor has delivered to the Company the applicable total purchase price for all of the Shares to be purchased by the Investor in such Fixed Purchase pursuant to Section 2.1, and (ii) with respect to each VWAP Purchase and Additional VWAP Purchase under this Agreement for which the Company has delivered to the Investor a VWAP Purchase Notice and (if applicable) an Additional VWAP Purchase Notice, respectively, the period beginning on the applicable VWAP Purchase Date for such VWAP Purchase (and, with respect to each Additional VWAP Purchase effected on the same Trading Day as such VWAP Purchase Date, the applicable Additional VWAP Purchase Date, if any, for such Additional VWAP Purchase) and ending on the third (3rd) Trading Day next following the Trading Day on which the Investor has

delivered to the Company the applicable total purchase price for all of the Shares to be purchased by the Investor in such VWAP Purchase, and the applicable total purchase price of all of the Shares to be purchased by the Investor in such Additional VWAP Purchase(s), as applicable, pursuant to Section 2.2 and Section 2.3 (each such period referred to in clause (i) and (ii) above, a "Reference Period"), any Common Shares or Common Shares Equivalents, at an effective price per Common Share less than the applicable Fixed Purchase Price, VWAP Purchase Price or Additional VWAP Purchase Price (as applicable) per Share (such price, the "Reference Price") to be sold to the Investor in the applicable Fixed Purchase, VWAP Purchase and Additional VWAP Purchase (as applicable) to which such Reference Period relates (each such issuance, a "Dilutive Issuance"), other than an Exempt Issuance (it being understood and agreed that if the holder of the Common Shares or Common Shares Equivalents so issued shall at any time, whether by operation of purchase price adjustments, reset provisions, floating conversion, exercise or exchange prices or otherwise, or due to warrants, options or rights per share which are issued in connection with such issuance, be entitled to receive Common Shares at an effective price per Common Shares that is less than the applicable Reference Price, such issuance shall be deemed to have occurred for less than the applicable Reference Price on such date of the Dilutive Issuance at such effective price) and the applicable Fixed Purchase Price, VWAP Purchase Price or Additional VWAP Purchase Price (as applicable) shall be reduced to equal the Reference Price. If the Company enters into a Variable Rate Transaction, the Company shall be deemed to have issued Common Shares or Common Shares Equivalents at the lowest possible conversion or exercise price at which such securities may be converted or exercised. The Investor shall be entitled to seek injunctive relief against the Company and the Subsidiaries to preclude any such Dilutive Issuance that does not constitute an Exempt Issuance, which remedy shall be in addition to any right to collect damages, without the necessity of showing economic loss and without any bond or other security being required. 19

(iii) Clearing Date. In the event that the Company fails to deposit into the Investor's or its designated Broker-Dealer's account at DTC through its DWAC delivery system the Shares pursuant to Fixed Purchase, VWAP Purchase, or Additional VWAP Purchase, as applicable, on the Share Settlement Date, and the lowest trade price for the Common Shares on the Clearing Date is lower than that at the time any Shares pursuant to a Fixed Purchase, VWAP Purchase, or Additional VWAP Purchase are actually issued, then the price per share at which such Shares are issued shall be adjusted such that the price per share at which such Shares are issued shall be calculated from the closing trade price on the Clearing Date, and the Company shall issue additional Shares to Investor to reflect such adjusted price per Share. For purposes of this Agreement, "Clearing Date" shall be on the date on which any Shares pursuant to a Fixed Purchase, VWAP Purchase, or Additional VWAP Purchase are deposited into the Investor's or its designated Broker-Dealer's account at DTC through its DWAC delivery system and Investor's broker has confirmed with Investor that the Investor may execute trades of such Shares and shall exclude the Share Settlement Date.

(iv) No Other Similar Transactions. From and after the date of this Agreement until the termination of this Agreement pursuant to Section 7 (the "Similar Transaction Restricted Period"), none of the Company or any Subsidiary shall issue, sell or grant any, or otherwise dispose of or issue (or enter into any agreement, plan or arrangement contemplating any of the foregoing, or seek to utilize any existing agreement, plan or arrangement to effect any of the foregoing), or announce any offer, issuance, sale or grant or other disposition or issuance of (or any agreement, plan or arrangement therefor) any Common Shares or Common Shares Equivalents (or a combination of units thereof) in any "equity line of credit" at the market offering or other similar continuous offering in which the Company may offer, issue or sell Common Shares or Common Shares Equivalents (or any combination of units thereof) at a future determined price, other than (a) Securities issued to the Investor pursuant to this Agreement and any of the other Transaction Documents or pursuant to any other agreement entered into by the Company and the Investor at any time after the date of this Agreement, (b) any securities of the Company issued upon the exercise or exchange of or conversion of any Common Shares or Common Shares Equivalents held by the Investor at any time (such similar transaction other than those referred to clauses (a) and (b) hereof, a "Similar Transaction") and (c) sales of securities pursuant to the Company's existing at the market offering, provided, however, that no sales are made during the period from the Fixed Purchase Date, VWAP Purchase Date, or Additional VWAP Purchase Date, as applicable, until the end of the Trading Day following the date that Shares have been delivered in Settlement of such Fixed Purchase, VWAP Purchase, or Additional VWAP Purchase, as applicable. From and after the date immediately following the last day of the Similar Transaction Restricted Period, the Company and/or any Subsidiary shall be permitted to enter into an agreement, plan or arrangement to effect a Similar Transaction (and may publicly announce the same), and the Company and/or any Subsidiary shall be permitted to take all such actions necessary or as contemplated thereby in order to satisfy any conditions required thereunder to be satisfied by the Company and/or any Subsidiary in order to commence issuances and sales of Common Shares or Common Shares Equivalents (or a combination of units thereof) thereunder, including, without limitation, preparing and filing with the Commission one or more registration statements to register under the Securities Act the offer, issuance and sale by the Company of Common Shares or Common Shares Equivalents (or a combination of units thereof) thereunder, or to register the resale by any Person or Persons of Common Shares or Common Shares Equivalents (or a combination of units thereof) that may be issued or sold by the Company and/or any Subsidiary to such Person or Persons thereunder; provided, however, that none of the Company or Subsidiary may issue, sell or otherwise dispose of any Common Shares or Common Shares Equivalents (or a combination of units thereof) to or through any Person or Persons thereunder prior to the date of termination of this Agreement pursuant to Section 7. The Investor shall be entitled to seek injunctive relief against the Company and the Subsidiaries to preclude any such issuance, which remedy shall be in addition to any right to collect damages, without the necessity of showing economic loss and without any bond or other security being required.

Section 5.7. Corporate Existence. The Company shall take all steps necessary to preserve and continue the corporate existence of the Company; provided, however, that, except as provided in Section 5.8, nothing in this Agreement shall be deemed to prohibit the Company from engaging in any Fundamental Transaction with another Person. For the avoidance of doubt, nothing in this Section 5.7 shall in any way limit the Company's right to terminate this Agreement in accordance with Section 7.2 (subject in all cases to Section 7.3). 20

Section 5.8. Fundamental Transaction. If a Fixed Purchase Notice, a VWAP Purchase Notice or an Additional VWAP Purchase Notice has been delivered by the Company to the Investor under Article II and the applicable Fixed Purchase, VWAP Purchase and Additional VWAP Purchase, respectively, has or have not yet been fully settled in accordance with this Agreement (including, without limitation, the delivery by the Investor to the Company of the applicable total purchase price for all of the Shares to be purchased by the Investor in such Fixed Purchase, VWAP Purchase and Additional VWAP Purchase, respectively, as contemplated by Article II), the Company shall not effect any Fundamental Transaction until the expiration of three (3) Trading Days following the Trading Day on which the Investor has delivered to the Company

the applicable total purchase price for all of the Shares to be purchased by the Investor in such Fixed Purchase, VWAP Purchase and Additional VWAP Purchase, respectively. SectionÂ 5.9. Selling Restrictions. (i) Except as expressly set forth below, the Investor covenants that from and after the Closing Date through and including the Trading Day next following the expiration or termination of this Agreement (the â€œRestricted Periodâ€), neither the Investor nor any of its Affiliates nor any entity managed or controlled by the Investor (collectively, the â€œRestricted Personsâ€ and each of the foregoing is referred to herein as a â€œRestricted Personâ€) shall, directly or indirectly, (x)Â engage in any Short Sales involving the Companyâ€™s securities or (y)Â grant any option to purchase, or acquire any right to dispose of or otherwise dispose for value of, any shares of Common Shares or any securities convertible into or exercisable or exchangeable for any shares of Common Shares, or enter into any swap, hedge or other similar agreement that transfers, in whole or in part, the economic risk of ownership of the Common Shares. Notwithstanding the foregoing, it is expressly understood and agreed that nothing contained herein shall (without implication that the contrary would otherwise be true) prohibit any Restricted Person during the Restricted Period from: (1)Â selling â€œlongâ€ (as defined under Rule 200 promulgated under Regulation SHO) the Securities; or (2)Â selling a number of shares of Common Shares equal to the number of Shares that such Restricted Person is or may be obligated to purchase under a pending Fixed Purchase Notice, a pending VWAP Purchase Notice or a pending Additional VWAP Purchase Notice but has not yet taken possession of so long as such Restricted Person (or the Broker-Dealer, as applicable) delivers the Shares purchased pursuant to such Fixed Purchase Notice, such VWAP Purchase Notice or such Additional VWAP Purchase Notice (as applicable) to the purchaser thereof or the applicable Broker-Dealer upon such Restricted Personâ€™s receipt of such shares of Common Shares from the Company pursuant to this Agreement. (ii) In addition to the foregoing, in connection with any sale of Securities (including any sale permitted by paragraph (i)Â above), the Investor shall comply in all respects with all applicable laws, rules, regulations and orders, including, without limitation, the requirements of the Securities Act and the Exchange Act. SectionÂ 5.10. Effective Registration Statement. During the Investment Period, the Company shall use its commercially reasonable efforts to maintain the continuous effectiveness of each New Registration Statement filed with the Commission under the Securities Act for the applicable Registration Period pursuant to and in accordance with the Registration Rights Agreement. SectionÂ 5.11. Blue Sky. The Company shall take such action, if any, as is necessary by the Company in order to obtain an exemption for or to qualify the Securities for sale by the Company to the Investor pursuant to the Transaction Documents, and at the request of the Investor, the subsequent resale of Registrable Securities by the Investor, in each case, under applicable state securities or â€œBlue Skyâ€ laws and shall provide evidence of any such action so taken to the Investor from time to time following the Closing Date; provided, however, that the Company shall not be required in connection therewith or as a condition thereto to (x)Â qualify to do business in any jurisdiction where it would not otherwise be required to qualify but for this SectionÂ 5.11, (y) subject itself to general taxation in any such jurisdiction, or (z)Â file a general consent to service of process in any such jurisdiction. SectionÂ 5.12. Non-Public Information. None of the Company or of the Subsidiaries, nor any of their respective directors, officers, employees or agents shall disclose any material non-public information about the Company or the Subsidiaries to the Investor, unless a simultaneous public announcement thereof is made by the Company in the manner contemplated by Regulation FD. In the event of a breach of the foregoing covenant by the Company or of the Subsidiaries, or any of their respective directors, officers, employees and agents (as determined in the reasonable good faith judgment of the Investor), (i) the Investor shall promptly provide written notice of such Â 21 breach to the Company and (ii)Â after such notice has been provided to the Company and, provided that the Company shall have failed to publicly disclose such material, non-public information within 24 hours following demand therefor by the Investor, in addition to any other remedy provided herein or in the other Transaction Documents, the Investor shall have the right to make a public disclosure, in the form of a press release, public advertisement or otherwise, of such material, non-public information without the prior approval by the Company, any of the Subsidiaries, or any of their respective directors, officers, employees or agents. The Investor shall not have any liability to the Company, any of the Subsidiaries, or any of their respective directors, officers, employees, shareholders or agents, for any such disclosure. SectionÂ 5.13. Broker/Dealer. The Investor shall use one or more broker-dealers to effectuate all sales, if any, of the Shares that it may purchase or otherwise acquire from the Company pursuant to the Transaction Documents, as applicable, which (or whom) shall be unaffiliated with the Investor and not then currently engaged or used by the Company, and a DTC participant (collectively, the â€œBroker-Dealerâ€). The Investor shall, from time to time, provide the Company and the Transfer Agent with all information regarding the Broker-Dealer reasonably requested by the Company. The Investor shall be solely responsible for all fees and commissions of the Broker-Dealer, which shall not exceed customary brokerage fees and commissions and shall be responsible for designating only a DTC participant eligible to receive DWAC Shares. SectionÂ 5.14. Disclosure Schedules. (i) The Company may, from time to time, update the Disclosure Schedules as may be required to satisfy the conditions set forth in SectionÂ 6.2(i) and SectionÂ 6.3 (to the extent such condition set forth in SectionÂ 6.3 relates to the condition in SectionÂ 6.2(i) as of a specific Notice Delivery Time). For purposes of this SectionÂ 5.14, any disclosure made in a schedule to the Compliance Certificate shall be deemed to be an update of the Disclosure Schedule. Notwithstanding anything in this Agreement to the contrary, no update to the Disclosure Schedule pursuant to this SectionÂ 5.14 shall cure any breach of a representation or warranty of the Company contained in this Agreement and made prior to the update and shall not affect any of the Investorâ€™s rights or remedies with respect thereto. (ii) Notwithstanding anything to the contrary contained in the Disclosure Schedule or in this Agreement, the information and disclosure contained in any Schedule of the Disclosure Schedule shall be deemed to be disclosed and incorporated by reference in any other Schedule of the Disclosure Schedule as though fully set forth in such Schedule for which applicability of such information and disclosure is reasonably apparent. The fact that any item of information is disclosed in the Disclosure Schedule shall not be construed to mean that such information is required to be disclosed by this Agreement. Except as expressly set forth in this Agreement, such information and the thresholds (whether based on quantity, qualitative characterization, dollar amounts or otherwise) set forth herein shall not be used as a basis for interpreting the terms â€œmaterialâ€ or â€œMaterial Adverse Effectâ€ or other similar terms in this Agreement. SectionÂ 5.15. Delivery of Bring Down Opinions and Compliance Certificates Upon Occurrence of Certain Events. Within three (3)Â Trading Days immediately following the (i)Â filing of (A)Â a New Registration Statement required to be filed by the Company with the Commission pursuant to SectionÂ 2(c) of the Registration Rights Agreement, or (B)Â a post-effective amendment to a New Registration Statement required to be filed by the Company with the Commission pursuant to SectionÂ 2(c) of the Registration Rights Agreement, in each case with respect to a fiscal year ending after the Commencement Date, to register the resale of Securities by the Investor under the Securities Act pursuant to this Agreement and the Registration Rights Agreement, and (ii)Â the date the Company files with the Commission (A)Â a Prospectus

Supplement to the Prospectus contained in the any New Registration Statement under the Securities Act, (B) an annual report on Form 10-K under the Exchange Act with respect to a fiscal year ending after the Commencement Date, (C) an amendment on Form 10-K/A to an annual report on Form 10-K under the Exchange Act with respect to a fiscal year ending after the Commencement Date, which contains amended material financial information (or a restatement of material financial information) or an amendment to other material information contained in a previously filed Form 10-K, and (D) a Commission Document under the Exchange Act (other than those referred to in clauses (ii)(A) and (ii)(B) of this Section 5.15), which contains amended material financial information (or a restatement of material financial information) or an amendment to other material information contained or incorporated by reference in any New Registration Statement, or the Prospectus or any Prospectus Supplement contained in any New Registration Statement (it being hereby acknowledged and agreed that the filing by the Company with the Commission of a quarterly report on Form 10-Q that includes only updated 22 financial information as of the end of the Company's most recent fiscal quarter shall not, in and of itself, constitute an amendment or a restatement for purposes of clause (ii) of this Section 5.15), in each case of this clause (ii) if the Company is not also then required under the Securities Act to file a post-effective amendment to any New Registration Statement or a post-effective amendment to any New Registration Statement, in each case with respect to a fiscal year ending after the Commencement Date, to register the resale of Securities by the Investor under the Securities Act pursuant to this Agreement and the Registration Rights Agreement, and in any case of this clause (ii), not more than once per calendar quarter, the Company shall (I) deliver to the Investor a Compliance Certificate, dated such date, and (II) cause to be furnished to the Investor an opinion "bringing down" from outside counsel to the Company substantially in the form mutually agreed to by the Company and the Investor prior to the date of this Agreement, modified, as necessary, to relate to such Registration Statement or post-effective amendment, or the Prospectus contained therein as then amended or supplemented by such Prospectus Supplement, as applicable (each such opinion, a "Bring Down Opinion").

**Section 5.16. DTC Chill.** If the Common Shares are chilled for deposit at DTC, becomes chilled, or receives a Stop Sign or other trading restrictions at any point while this Agreement remains outstanding, an additional 10% discount will be attributed to the price per Share at which each Fixed Purchase, VWAP Purchase and Additional VWAP Purchase is made and the Investor shall be entitled to deduct from such payment for the Shares an amount equal to \$1,500 for each Fixed Purchase, VWAP Purchase and Additional VWAP Purchase to cover costs associated with the deposit of chilled or otherwise trade restricted stocks for each issuance.

**ARTICLE VI CONDITIONS TO CLOSING AND CONDITIONS TO THE SALE AND PURCHASE OF THE SHARES**

**Section 6.1. Conditions Precedent to Closing.** The Closing is subject to the satisfaction of each of the conditions set forth in this Section 6.1 on the Closing Date.

(i) **Accuracy of the Investor's Representations and Warranties.** The representations and warranties of the Investor contained in this Agreement (a) that are not qualified by "materiality" shall be true and correct in all material respects as of the Closing Date, except to the extent such representations and warranties are as of another date, in which case, such representations and warranties shall be true and correct in all material respects as of such other date and (b) that are qualified by "materiality" shall be true and correct as of the Closing Date, except to the extent such representations and warranties are as of another date, in which case, such representations and warranties shall be true and correct as of such other date.

(ii) **Accuracy of the Company's Representations and Warranties.** The representations and warranties of the Company contained in this Agreement (a) that are not qualified by "materiality" or "Material Adverse Effect" shall be true and correct in all material respects as of the Closing Date, except to the extent such representations and warranties are as of another date, in which case, such representations and warranties shall be true and correct in all material respects as of such other date and (b) that are qualified by "materiality" or "Material Adverse Effect" shall be true and correct as of the Closing Date, except to the extent such representations and warranties are as of another date, in which case, such representations and warranties shall be true and correct as of such other date.

(iii) **Issuance of Commitment Shares.** On the Closing Date, the Company shall deliver irrevocable instructions to the Transfer Agent to issue to the Investor, not later than 4:00 p.m. (New York City time) on the Closing Date, a certificate or book-entry statement representing the Initial Commitment Shares in the name of the Investor or its designee (in which case such designee name shall have been provided to the Company prior to the Closing Date), in consideration for the Investor's execution and delivery of this Agreement. Such certificate or book-entry statement shall be delivered to the Investor by overnight courier at its address set forth in Section 9.4 hereof. Such certificate or book-entry statement shall be delivered to the Investor by overnight courier at its address set forth in Section 9.4 hereof. On the ninetieth (90) calendar day following the Effective Date, the Company shall deliver irrevocable instructions to the Transfer Agent to issue to the Investor, not later than 4:00 p.m. (New York City time) on such date, as DWAC Shares, such that they are credited to the Investor's or its designee's specified DWAC account with DTC under its FAST Program, the First Back End Commitment Shares. On the one hundred and eightieth (180) calendar day following the Effective Date, the Company shall deliver irrevocable instructions to the Transfer Agent to issue to the Investor, not later than 4:00 p.m. (New York City time) on such date, as DWAC Shares, such that they are credited to the Investor's or its designee's specified DWAC account with DTC under its FAST Program, the Second Back End Commitment Shares. For the avoidance of doubt, all of the Commitment Shares shall be fully earned as of the Closing Date regardless of whether any Fixed Purchases, VWAP Purchases or Additional VWAP Purchases are made hereunder or any subsequent termination of this Agreement.

(iv) **Closing Deliverables.** At the Closing, counterpart signature pages of this Agreement and the Registration Rights Agreement executed by each of the parties hereto shall be delivered as provided in Section 1.2. Simultaneously with the execution and delivery of this Agreement and the Registration Rights Agreement, the Investor's counsel shall have received (a) the closing certificate from the Company, dated as of the Closing Date, in the form of Exhibit B hereto, and (b) a copy of the irrevocable instructions to the Transfer Agent regarding the issuance to the Investor or its designee of the certificate(s) or book-entry statement(s) representing the Commitment Shares, not including the Back End Commitment Shares, pursuant to and in accordance with Section 9.1(ii) hereof.

**Section 6.2. Conditions Precedent to Commencement.** The right of the Company to commence delivering Fixed Purchase Notices, VWAP Purchase Notices and Additional VWAP Purchase Notices under this Agreement, and the obligation of the Investor to accept Fixed Purchase Notices, VWAP Purchase Notices and Additional VWAP Purchase Notices delivered to the Investor by the Company under this Agreement, are subject to the initial satisfaction, at the time of Commencement, of each of the conditions set forth in this Section 6.2.

(i) **Accuracy of the Company's Representations and Warranties.** The representations and warranties of the Company contained in this Agreement (a) that are not qualified by "materiality" or "Material Adverse Effect" shall have been true and correct in all material respects when made and shall be true and correct in all material respects as of the Commencement Date with the same force and effect as if made on such date, except to the extent such representations

and warranties are as of another date, in which case, such representations and warranties shall be true and correct in all material respects as of such other date and (b) that are qualified by "materiality" or "Material Adverse Effect" shall have been true and correct when made and shall be true and correct as of the Commencement Date with the same force and effect as if made on such date, except to the extent such representations and warranties are as of another date, in which case, such representations and warranties shall be true and correct as of such other date. (ii) Performance of the Company. The Company shall have performed, satisfied and complied in all material respects with all covenants, agreements and conditions required by this Agreement and the Registration Rights Agreement to be performed, satisfied or complied with by the Company at or prior to the Commencement. The Company shall deliver to the Investor on the Commencement Date the compliance certificate substantially in the form attached hereto as Exhibit C (the "Compliance Certificate"). (iii) Reserved. (iv) Other Commission Filings. The Current Report shall have been filed with the Commission as required pursuant to Section 1.3. The final Prospectus included in any New Registration Statement and in any post-effective amendment thereto, and any Prospectus Supplement thereto, required to be filed by the Company with the Commission pursuant to Section 1.3 and the Registration Rights Agreement after the Commencement Date and prior to the applicable Fixed Purchase Date and the applicable VWAP Purchase Date and Additional VWAP Purchase Date (as applicable), shall have been filed with the Commission in accordance with Section 1.3 and the Registration Rights Agreement. All reports, schedules, registrations, forms, statements, information and other documents required to have been filed by the Company with the Commission pursuant to the reporting requirements of the Exchange Act, including all material required to have been filed pursuant to Section 13(a) or 15(d) of the Exchange Act, after the Commencement Date and prior to the applicable Fixed Purchase Date and the applicable VWAP Purchase Date and Additional VWAP Purchase Date (as applicable), shall have been filed with the Commission and, if any Registrable Securities are covered by a Registration Statement on Form S-3, such filings shall have been made within the applicable time period prescribed for such filing under the Exchange Act. (v) No Suspension of Trading in or Notice of Delisting of Common Shares. Trading in the Common Shares shall not have been suspended by the Commission, the Trading Market or the FINRA (except for any suspension of trading of limited duration agreed to by the Company, which suspension shall be terminated prior to the Commencement Date), the Company shall not have received any final and non-appealable notice that the listing or quotation of the Common Shares on the Trading Market shall be terminated on a date certain (unless, prior to such date certain, the Common Shares are listed or quoted on any other Eligible Market), nor shall there have been imposed any suspension of, or restriction on, accepting additional deposits of the Common Shares, electronic trading or book-entry services by DTC with respect to the Common Shares that is continuing, the Company shall not have received any notice from DTC to the effect that a suspension of, or restriction on, accepting additional deposits of the Common Shares, electronic trading or book-entry services by DTC with respect to the Common Shares are being imposed or is contemplated (unless, prior to such suspension or restriction, DTC shall have notified the Company in writing that DTC has determined not to impose any such suspension or restriction). (vi) Compliance with Laws. The Company shall have complied in all material respects with all applicable federal, state and local governmental laws, rules, regulations and ordinances in connection with the execution, delivery and performance of this Agreement and the other Transaction Documents to which it is a party and the consummation of the transactions contemplated hereby and thereby, including, without limitation, the Company shall have obtained all permits and qualifications required by any applicable state securities or "Blue Sky" laws for the offer and sale of the Securities by the Company to the Investor and the subsequent resale of the Registrable Securities by the Investor (or shall have the availability of exemptions therefrom). (vii) No Injunction. No statute, regulation, order, decree, writ, ruling or injunction shall have been enacted, entered, promulgated, threatened or endorsed by any court or governmental authority of competent jurisdiction which prohibits the consummation of, or which would materially modify or delay any of the transactions contemplated by, the Transaction Documents. (viii) No Proceedings or Litigation. No action, suit or proceeding before any arbitrator or any court or governmental authority shall have been commenced, and no inquiry or investigation by any governmental authority shall have been commenced, against the Company or any Subsidiary, or any of the officers, directors or Affiliates of the Company or any Subsidiary, seeking to restrain, prevent or change the transactions contemplated by the Transaction Documents, or seeking material damages in connection with such transactions. (ix) Listing of Securities. All of the Securities that have been and may be issued pursuant to this Agreement shall have been approved for listing or quotation on the Trading Market as of the Commencement Date, subject only to notice of issuance. (x) No Material Adverse Effect. No condition, occurrence, state of facts or event constituting a Material Adverse Effect shall have occurred and be continuing. (xi) No Bankruptcy Proceedings. No Person shall have commenced a proceeding against the Company pursuant to or within the meaning of any Bankruptcy Law. The Company shall not have, pursuant to or within the meaning of any Bankruptcy Law, (a) commenced a voluntary case, (b) consented to the entry of an order for relief against it in an involuntary case, (c) consented to the appointment of a Custodian of the Company for all or substantially all of the Company's property, or (d) made a general assignment for the benefit of its creditors. A court of competent jurisdiction shall not have entered an order or decree under any Bankruptcy Law that (I) is for relief against the Company in an involuntary case, (II) appoints a Custodian of the Company for all or substantially all of the Company's property, or (III) orders the liquidation of the Company or of the Subsidiaries. (xii) Commitment Shares Issued. The Company shall have caused the Transfer Agent to credit the Investor's or its designee's account at DTC as DWAC Shares the Initial Commitment Shares issued to the Investor pursuant to Section 9.1(ii) hereof. (xiii) Delivery of Commencement Irrevocable Transfer Agent Instructions and Notice of Effectiveness. The Commencement Irrevocable Transfer Agent Instructions shall have been executed by the Company and delivered to acknowledged in writing by the Transfer Agent. (xiv) Reservation of Shares. As of the Commencement Date, the Company shall have reserved out of its authorized and unissued Common Shares, 15,000,000 Common Shares solely for the purpose of effecting Fixed Purchases, VWAP Purchases, Additional VWAP Purchases, and Back End Commitment Shares under this Agreement. (xv) Opinions of Company Counsel. On the Commencement Date, the Investor shall have received the opinion and negative assurances from outside counsel to the Company, dated the Commencement Date, in the forms mutually agreed to by the Company and the Investor prior to the date of this Agreement. Section 6.3. Conditions Precedent to Purchases by Investor. The right of the Company to deliver Fixed Purchase Notices, VWAP Purchase Notices and Additional VWAP Purchase Notices under this Agreement after the Commencement Date, and the obligation of the Investor to accept Fixed Purchase Notices, VWAP Purchase Notices and Additional VWAP Purchase Notices under this Agreement after the Commencement Date, are subject to the satisfaction of each of the conditions set forth in this Section 6.3: (i) with respect to each Fixed Purchase after the Commencement Date, at the time of delivery of the applicable Fixed Purchase Notice to the Investor on the applicable Fixed Purchase Date for such Fixed Purchase, (ii) with respect to each VWAP

Purchase after the Commencement Date, (A) at the time of delivery of the applicable VWAP Purchase Notice to the Investor and (B) immediately prior to the applicable VWAP Purchase Commencement Time on the applicable VWAP Purchase Date for such VWAP Purchase, and (iii) with respect to each Additional VWAP Purchase after the Commencement Date, (A) at the time of delivery of the applicable Additional VWAP Purchase Notice to the Investor and (B) immediately prior to the applicable Additional VWAP Purchase Commencement Time on the applicable Additional VWAP Purchase Date for such Additional VWAP Purchase (each such time referred to in clauses (i), (ii) and (iii) hereof, a "Notice Delivery Time"). (i) Satisfaction of Certain Prior Conditions. Each of the conditions set forth in subsections (i), (ii), and (vii) through (xiv) set forth in Section 6.2 shall be satisfied at the applicable Notice Delivery Time after the Commencement Date (with the terms "Commencement" and "Commencement Date" in the conditions set forth in subsections (i) and (ii) of Section 6.2 replaced with "applicable Notice Delivery Time"); provided, however, that the Company shall not be required to deliver the Compliance Certificate after the Commencement Date, except as provided in Section 5.1 and Section 6.2(ii). (ii) Any Required New Registration Statement Effective. Any New Registration Statement covering the resale by the Investor of the Registrable Securities, included therein, and any post-effective amendment thereto, required to be filed by the Company with the Commission pursuant to the Registration Rights Agreement after the Commencement Date and prior to the applicable Fixed Purchase Date, the applicable VWAP Purchase Date and the applicable Additional VWAP Purchase Date (as applicable), in each case shall have been declared effective under the Securities Act by the Commission and shall remain effective for the applicable Registration Period, and the Investor shall be permitted to utilize the Prospectus therein, and any Prospectus Supplement thereto, to resell (a) all of the then-issued Commitment Shares (if any) included in such New Registration Statement, and any post-effective amendment thereto, (b) all of the Shares included in such New Registration Statement, and any post-effective amendment thereto, that have been issued and sold to the Investor hereunder pursuant to all Fixed Purchase Notices, all VWAP Purchase Notices and all Additional VWAP Purchase Notices (as applicable) delivered by the Company to the Investor prior to such applicable Fixed Purchase Date, such applicable VWAP Purchase Date, and such applicable Additional VWAP Purchase Date, respectively, and (c) all of the Shares included in such new Registration Statement, and any post-effective amendment thereto, that are issuable pursuant to the applicable Fixed Purchase Notice, the applicable VWAP Purchase Notice, and the applicable Additional VWAP Purchase Notice (as applicable) delivered by the Company to the Investor with respect to a Fixed Purchase, a VWAP Purchase, and an Additional VWAP Purchase, respectively, to be effected hereunder on such applicable Fixed Purchase Date, such applicable VWAP Purchase Date, and such Additional VWAP Purchase Date, respectively. (iii) Delivery of Subsequent Irrevocable Transfer Agent Instructions and Notice of Effectiveness. With respect to any post-effective amendment to any New Registration Statement or any post-effective amendment to any New Registration Statement, in each case declared effective by the Commission after the Commencement Date, the Company shall have delivered or caused to be delivered to the Transfer Agent (a) irrevocable instructions in the form substantially similar to the Commencement Irrevocable Transfer Agent Instructions executed by the Company and acknowledged in writing by the Transfer Agent and (b) the Notice of Effectiveness, in each case modified as necessary to refer to such Registration Statement or post-effective amendment and the Registrable Securities included therein, to issue the Registrable Securities included therein as DWAC Shares in accordance with the terms of this Agreement and the Registration Rights Agreement. (iv) No Material Notices. None of the following events shall have occurred and be continuing: (a) receipt of any request by the Commission or any other federal or state governmental authority for any additional information relating to any New Registration Statement or any post-effective amendment thereto, or the Prospectus contained in any of the foregoing or any Prospectus Supplement thereto, or for any amendment of or supplement to any New Registration Statement or any post-effective amendment thereto, or the Prospectus contained in any of the foregoing or any Prospectus Supplement thereto; (b) the issuance by the Commission or any other federal or state governmental authority of any stop order suspending the effectiveness of any New Registration Statement or any post-effective amendment thereto, or prohibiting or suspending the use of the Prospectus contained in any of the foregoing or any Prospectus Supplement thereto, or of the suspension of qualification or exemption from qualification of the Securities for offering or sale in any jurisdiction, or the initiation or contemplated initiation of any proceeding for such purpose; or (c) the occurrence of any event or the existence of any condition or state of facts, which makes any statement of a material fact made in any New Registration Statement or any post-effective amendment thereto, or the Prospectus contained in any of the foregoing or any Prospectus Supplement thereto untrue or which requires the making of any additions to or changes to the statements then made in any New Registration Statement or any post-effective amendment thereto, or the Prospectus contained in any of the foregoing or any Prospectus Supplement thereto in order to state a material fact required by the Securities Act to be stated therein or necessary in order to make the statements then made therein (in the case of the Prospectus or any Prospectus Supplement, in light of the circumstances under which they were made) not misleading, or which requires an amendment to any New Registration Statement or any post-effective amendment thereto, or the Prospectus contained in any of the foregoing or any Prospectus Supplement thereto to comply with the Securities Act or any other law (other than the transactions contemplated by the applicable Fixed Purchase Notice, the applicable VWAP Purchase Notice, and the applicable Additional VWAP Purchase Notice (as applicable) delivered by the Company to the Investor with respect to a Fixed Purchase, a VWAP Purchase, and an Additional VWAP Purchase, respectively, to be effected hereunder on such applicable Fixed Purchase Date, such applicable VWAP Purchase Date, and such applicable Additional VWAP Purchase Date, respectively, and the settlement thereof). The Company shall not have any Knowledge of any event that would reasonably be expected to have the effect of causing the suspension of the effectiveness of any New Registration Statement or any post-effective amendment thereto, or the prohibition or suspension of the use of the Prospectus contained in any of the foregoing or any Prospectus Supplement thereto in connection with the resale of the Registrable Securities by the Investor. (v) Other Commission Filings. The final Prospectus included in any post-effective amendment required to be filed by the Company with the Commission pursuant to Section 1.3 and the Registration Rights Agreement after the Commencement Date and prior to the applicable Fixed Purchase Date and the applicable VWAP Purchase Date and Additional VWAP Purchase Date (as applicable), shall have been filed with the Commission in accordance with Section 1.3 and the Registration Rights Agreement. The final Prospectus included in any New Registration Statement and in any post-effective amendment thereto, and any Prospectus Supplement thereto, required to be filed by the Company with the Commission pursuant to Section 1.3 and the Registration Rights Agreement after the Commencement Date and prior to the applicable Fixed Purchase Date and the applicable VWAP Purchase Date and Additional VWAP Purchase Date (as applicable), shall have been filed with the Commission in accordance with Section 1.3 and the Registration Rights Agreement. All reports, schedules, registrations, forms, statements,

information and other documents required to have been filed by the Company with the Commission pursuant to the reporting requirements of the Exchange Act, including all material required to have been filed pursuant to Section 13(a) or 15(d) of the Exchange Act, after the Commencement Date and prior to the applicable Fixed Purchase Date and the applicable VWAP Purchase Date and Additional VWAP Purchase Date (as applicable), shall have been filed with the Commission and, if any Registrable Securities are covered by a Registration Statement on Form S-3, such filings shall have been made within the applicable time period prescribed for such filing under the Exchange Act. (vi) No Suspension of Trading in or Notice of Delisting of Common Shares. Trading in the Common Shares shall not have been suspended by the Commission, the Trading Market or FINRA (except for any suspension of trading of limited duration agreed to by the Company, which suspension shall be terminated prior to the applicable Fixed Purchase Date, VWAP Purchase Date or Additional VWAP Purchase Date, as applicable), the Company shall not have received any final and non-appealable notice that the listing or quotation of the Common Shares on the Trading Market shall be terminated on a date certain (unless, prior to such date certain, the Common Shares are listed or quoted on any other Eligible Market), nor shall there have been imposed any suspension of, or restriction on, accepting additional deposits of the Common Shares, electronic trading or book-entry services by DTC  $\geq$  27 with respect to the Common Shares that is continuing, the Company shall not have received any notice from DTC to the effect that a suspension of, or restriction on, accepting additional deposits of the Common Shares, electronic trading or book-entry services by DTC with respect to the Common Shares are being imposed or is contemplated (unless, prior to such suspension or restriction, DTC shall have notified the Company in writing that DTC has determined not to impose any such suspension or restriction). (vii) Certain Limitations. The issuance and sale of the Shares issuable pursuant to the applicable Fixed Purchase Notice, applicable VWAP Purchase Notice, and applicable Additional VWAP Purchase Notice (as applicable) shall not (a) exceed the applicable Fixed Purchase Maximum Amount, the applicable VWAP Purchase Maximum Amount and the applicable Additional VWAP Purchase Maximum Amount, respectively, or (b) cause the Aggregate Limit or the Beneficial Ownership Limitation to be exceeded. (viii) Shares Authorized and Delivered. All of the Shares issuable pursuant to the applicable Fixed Purchase Notice, the applicable VWAP Purchase Notice, and the applicable Additional VWAP Purchase Notice (as applicable) shall have been duly authorized by all necessary corporate action of the Company. All Shares relating to all prior Fixed Purchase Notices, VWAP Purchase Notices, and Additional VWAP Purchase Notices required to have been received by the Investor as DWAC Shares under this Agreement prior to the applicable Notice Delivery Time for the applicable Fixed Purchase, applicable VWAP Purchase and applicable Additional VWAP Purchase (as applicable) shall have been delivered to the Investor as DWAC Shares in accordance with this Agreement. (ix) Bring Down Opinions of Company Counsel. The Investor shall have received (a) all Bring Down Opinions from outside counsel to the Company for which the Company was obligated to instruct their outside counsel to deliver to the Investor prior to the applicable Notice Delivery Time for the applicable Fixed Purchase, applicable VWAP Purchase, and applicable Additional VWAP Purchase (as applicable) and (b) all Compliance Certificates from the Company that the Company was obligated to deliver to the Investor prior to the applicable Notice Delivery Time for the applicable Fixed Purchase, applicable VWAP Purchase and applicable Additional VWAP Purchase (as applicable), in each case in accordance with Section 5.15. ARTICLE VII TERMINATION Section 7.1. Automatic Termination; Termination by Consent. Unless earlier terminated as provided hereunder, this Agreement shall terminate automatically, without any further action or notice by any Person, on the earliest to occur of (i) the first day of the month following the 24-month anniversary of the Commencement Date, (ii) the date on which the Investor shall have purchased the Total Purchase Commitment pursuant to this Agreement, (iii) the date on which the Common Shares shall have failed to be listed or quoted on the Trading Market or any Eligible Market, (iv) the thirtieth (30th) Trading Day next following the date on which, pursuant to or within the meaning of any Bankruptcy Law, the Company commences a voluntary case or any Person commences a proceeding against the Company, in each case that is not discharged or dismissed prior to such thirtieth (30th) Trading Day, and (v) the date on which, pursuant to or within the meaning of any Bankruptcy Law, a Custodian is appointed for the Company or for all or substantially all of its property, or the Company makes a general assignment for the benefit of its creditors. Subject to Section 7.3, this Agreement may be terminated at any time by the mutual written consent of the parties, effective as of the date of such mutual written consent unless otherwise provided in such written consent. Section 7.2. Other Termination. Subject to Section 7.3, the Company may terminate this Agreement after the Commencement Date effective upon one (1) a Trading Day's prior written notice to the Investor in accordance with Section 9.4; provided, however, that (i) the Company shall have issued all applicable Commitment Shares to the Investor and paid all fees and amounts to the Investor's counsel required to be paid pursuant to Section 9.1 of this Agreement prior to such termination, and (ii) prior to issuing any press release, or making any public statement or announcement, with respect to such termination, the Company shall consult with the Investor and its counsel on the form and substance of such press release or other disclosure, which consent shall not be unreasonably delayed or withheld. Subject to Section 7.3, this Agreement may be terminated at any time by the mutual written consent of the parties, effective as of the date of such mutual written consent unless otherwise provided in such written consent. Subject to Section 7.3, the Investor shall have the right to terminate this Agreement effective upon ten (10) Trading Days prior written notice to the Company in accordance with Section 9.4, if: (a) any condition, occurrence, state of facts or event constituting a Material Adverse Effect has occurred and is continuing; (b) a Fundamental Transaction shall have occurred; (c) any New Registration Statement is not filed by the applicable Filing Deadline therefor or declared effective by the Commission by the applicable Effectiveness Deadline (as defined in the Registration Rights Agreement) therefor, or the Company is otherwise in breach or default in any material respect under any of the other provisions of the Registration Rights Agreement, and, if such failure, breach or default is capable of being cured, such failure, breach or default is not cured within 10 Trading Days after notice of such failure, breach or default is delivered to the Company pursuant to Section 9.4; (d) while a Registration Statement, or any post-effective amendment thereto, is required to be maintained effective pursuant to the terms of the Registration Rights Agreement and the Investor holds any Registrable Securities, the effectiveness of such Registration Statement, or any post-effective amendment thereto, lapses for any reason (including, without limitation, the issuance of a stop order by the Commission) or such Registration Statement or any post-effective amendment thereto, the Prospectus contained therein or any Prospectus Supplement thereto otherwise becomes unavailable to the Investor for the resale of all of the Registrable Securities included therein in accordance with the terms of the Registration Rights Agreement, and such lapse or unavailability continues for a period of 20 consecutive Trading Days, other than due to acts of the Investor; (e) trading in the Common Shares on the Trading Market (or if the Common Shares are then listed on an Eligible Market, trading in the Common Shares on such Eligible Market) shall have been suspended and such suspension continues for a period of three (3) consecutive Trading Days;

or (f) the Company is in material breach or default of this Agreement, and, if such breach or default is capable of being cured, such breach or default is not cured within 10 Trading Days after notice of such breach or default is delivered to the Company (as applicable) pursuant to Section 9.4. Unless notification thereof is required elsewhere in this Agreement (in which case such notification shall be provided in accordance with such other provision), the Company shall promptly (but in no event later than 24 hours) notify the Investor (and, if required under Applicable Law, including, without limitation, Regulation FD promulgated by the Commission, or under the applicable rules and regulations of the Trading Market (or if the Common Shares are then listed on an Eligible Market, the rules and regulations of such Eligible Market), the Company shall publicly disclose such information in accordance with Regulation FD and the applicable rules and regulations of the Trading Market, or the applicable rules and regulations of such Eligible Market, as applicable) upon becoming aware of any of the events set forth in the immediately preceding sentence. Section 7.3. Effect of Termination. In the event of termination by the Company or the Investor (other than by mutual termination) pursuant to Section 7.2, written notice thereof shall forthwith be given to the other party as provided in Section 9.4 and the transactions contemplated by this Agreement shall be terminated without further action by either party. If this Agreement is terminated as provided in Section 7.1 or Section 7.2, this Agreement shall become void and of no further force and effect, except that (i) the provisions of Article IV (Representations and Warranties of the Company), Article VIII (Indemnification), Article IX (Miscellaneous) and this Article VII (Termination) shall remain in full force and effect indefinitely notwithstanding such termination, and, (ii) so long as the Investor owns any Securities, the covenants and agreements of the Company contained in Article V (Covenants) shall remain in full force and notwithstanding such termination for a period of six (6) months following such termination.

Notwithstanding anything in this Agreement to the contrary, no termination of this Agreement by any party shall (i) become effective prior to the first Trading Day immediately following the settlement date related to any pending Fixed Purchase Notice, any pending VWAP Purchase Notice, or any pending Additional VWAP Purchase Notice (as applicable) that has not been fully settled in accordance with the terms and conditions of this Agreement (it being hereby acknowledged and agreed that no termination of this Agreement shall limit, alter, modify, change or otherwise affect any of the parties' respective rights or obligations under the Transaction Documents with respect to any pending Fixed Purchase, pending VWAP Purchase, and pending Additional VWAP Purchase (as applicable), and that the parties shall fully perform their respective obligations with respect to any such pending Fixed Purchase, any such pending VWAP Purchase, and any such pending Additional VWAP Purchase (as applicable) under the Transaction Documents, provided all of the conditions to the settlement thereof set forth in Article VI are timely satisfied), (ii) limit, alter, modify, change or otherwise affect the parties' respective rights or obligations under the Registration Rights Agreement, all of which shall survive any such termination, (iii) affect the Investor Expense Reimbursement paid to the Investor, all of which shall be non-refundable when paid as of the Closing Date pursuant to Section 9.1(i), regardless of whether any Fixed Purchases, VWAP Purchases, or Additional VWAP Purchases are made or settled hereunder or any subsequent termination of this Agreement, or (iv) affect any Commitment Shares previously issued or delivered, or any rights of any holder thereof, it being hereby acknowledged and agreed that all of the Commitment Shares shall be fully earned as of the Closing Date, regardless of whether any Fixed Purchases, VWAP Purchases or Additional VWAP Purchases are made or settled hereunder or any subsequent termination of this Agreement. Nothing in this Section 7.3 shall be deemed to release the Company or the Investor from any liability for any breach or default under this Agreement or any of the other Transaction Documents to which it is a party, or to impair the respective rights of the Company and the Investor to compel specific performance by the other party of its obligations under the Transaction Documents to which it is a party. 29 ARTICLE VIII INDEMNIFICATION Section 8.1. Indemnification of Investor. In consideration of the Investor's execution and delivery of this Agreement and acquiring the Securities hereunder and in addition to all of the other respective obligations of the Company under the Transaction Documents to which it is a party, subject to the provisions of this Section 8.1, the Company shall indemnify and hold harmless the Investor, each of its directors, officers, shareholders, members, partners, employees, representatives, agents and advisors (and any other Persons with a functionally equivalent role of a Person holding such titles notwithstanding the lack of such title or any other title), each Person, if any, who controls the Investor (within the meaning of Section 15 of the Securities Act or Section 20(a) of the Exchange Act), and the respective directors, officers, shareholders, members, partners, employees, representatives, agents and advisors (and any other Persons with a functionally equivalent role of a Person holding such titles notwithstanding the lack of such title or any other title) of such controlling Persons (each, an "Investor Party"), from and against all losses, liabilities, obligations, claims, contingencies, damages, costs and expenses (including all judgments, amounts paid in settlement, court costs, reasonable attorneys' fees and costs of defense and investigation) (collectively, "Damages") that any Investor Party may suffer or incur as a result of or relating to (a) any breach of any of the representations, warranties, covenants or agreements made by the Company in this Agreement or in the other Transaction Documents to which it is a party or (b) any action, suit, claim or proceeding (including for these purposes a derivative action brought on behalf of the Company) instituted against such Investor Party arising out of or resulting from the execution, delivery, performance or enforcement of the Transaction Documents, other than claims for indemnification within the scope of Section 6 of the Registration Rights Agreement; provided, however, that (x) the foregoing indemnity shall not apply to any Damages to the extent, but only to the extent, that such Damages resulted directly and primarily from any acts or failures to act, undertaken or omitted to be taken by such Investor Party through its fraud, bad faith, gross negligence, or willful or reckless misconduct. The Company shall reimburse any Investor Party promptly upon demand (with accompanying presentation of documentary evidence) for all legal and other costs and expenses reasonably incurred by such Investor Party in connection with (i) any action, suit, claim or proceeding, whether at law or in equity, to enforce compliance by the Company with any provision of the Transaction Documents to which it is a party or (ii) any other action, suit, claim or proceeding, whether at law or in equity, with respect to which it is entitled to indemnification under this Section 8.1; provided that the Investor shall promptly reimburse the Company for all such legal and other costs and expenses to the extent a court of competent jurisdiction determines that any Investor Party was not entitled to such reimbursement. An Investor Party's right to indemnification or other remedies based upon the representations, warranties, covenants and agreements of the Company set forth in the Transaction Documents to which it is a party shall not in any way be affected by any investigation or knowledge of such Investor Party. Such representations, warranties, covenants and agreements shall not be affected or deemed waived by reason of the fact that an Investor Party knew or should have known that any representation or warranty might be inaccurate or that the Company failed to comply with any agreement or covenant. Any investigation by such Investor Party shall be for its own protection only and shall not affect or impair any right or remedy hereunder. To the extent that the foregoing joint and

several undertakings by the Company set forth in this Section 8.1 may be unenforceable for any reason, the Company shall make the maximum contribution to the payment and satisfaction of each of the Damages which is permissible under Applicable Law. 30 Section 8.2. Indemnification Procedures. Promptly after an Investor Party receives notice of a claim or the commencement of an action for which the Investor Party intends to seek indemnification under Section 8.1, the Investor Party will notify the Company in writing of the claim or commencement of the action, suit or proceeding; provided, however, that failure to notify the Company will not relieve the Company from liability under Section 8.1, except to the extent it has been materially prejudiced by the failure to give notice. The Company will be entitled to participate in the defense of any claim, action, suit or proceeding as to which indemnification is being sought, and if the Company acknowledges in writing the obligation to indemnify the Investor Party against whom the claim or action is brought, the Company may (but will not be required to) assume the defense against the claim, action, suit or proceeding with counsel satisfactory to it. After the Company notifies the Investor Party that the Company wishes to assume the defense of a claim, action, suit or proceeding, the Company will not be liable for any further legal or other expenses incurred by the Investor Party in connection with the defense against the claim, action, suit or proceeding except that if, in the opinion of counsel to the Investor Party, it would be inappropriate under the applicable rules of professional responsibility for the same counsel to represent both the Company and such Investor Party. In such event, the Company will pay the reasonable fees and expenses of no more than one separate counsel for all such Investor Parties promptly as such fees and expenses are incurred. Each Investor Party, as a condition to receiving indemnification as provided in Section 8.1, will cooperate in all reasonable respects with the Company in the defense of any action or claim as to which indemnification is sought. The Company will not be liable for any settlement of any action effected without its prior written consent, which consent shall not be unreasonably withheld, delayed or conditioned. The Company will not, without the prior written consent of the Investor Party, effect any settlement of a pending or threatened action with respect to which an Investor Party is, or is informed that it may be, made a party and for which it would be entitled to indemnification, unless the settlement includes an unconditional release of the Investor Party from all liability and claims which are the subject matter of the pending or threatened action. The remedies provided for in this Article VIII are not exclusive and shall not limit any rights or remedies which may otherwise be available to any Investor Party at law or in equity. ARTICLE IX MISCELLANEOUS Section 9.1. Certain Fees and Expenses; Commitment Shares; Commencement Irrevocable Transfer Agent Instructions. (i) Certain Fees and Expenses. Each party shall bear its own fees and expenses related to the transactions contemplated by this Agreement; provided, however, that immediately following the initial Settlement hereunder, the Company shall pay, by wire transfer of immediately available funds to an account designated by the Investor, an amount equal to \$25,000 to be applied against the Investor's reasonable out-of-pocket expenses, including the legal fees and disbursements of the Investor's legal counsel, incurred by the Investor in connection with the preparation, negotiation, execution and delivery of the Transaction Documents by the Investor and its due diligence investigation of the Company (such amount, the "Investor Expense Reimbursement"). For the avoidance of doubt, the Investor Expense Reimbursement, shall be non-refundable when paid as of the Closing Date, regardless of whether any Fixed Purchases, VWAP Purchases or Additional VWAP Purchases are made or settled hereunder or any subsequent termination of this Agreement. The Company shall pay all U.S. federal, state and local stamp and other similar transfer and other taxes and duties levied in connection with issuance of the Securities pursuant hereto. (ii) Commitment Shares. In consideration for the Investor's execution and delivery of this Agreement, concurrently with the execution and delivery of this Agreement on the Closing Date, the Company shall deliver irrevocable instructions to the Transfer Agent to issue to the Investor, not later than 4:00 p.m. (New York City time) on the Trading Day immediately following the Closing Date, one or more certificate(s) or book-entry statement(s) representing the Initial Commitment Shares, in the name of the Investor or its designee (in which case such designee name shall have been provided to the Company prior to the Closing Date). Such certificate or book-entry statement shall be delivered to the Investor by overnight courier at its address set forth in Section 9.4. On the Commencement Date, the Company shall deliver irrevocable instructions to the Transfer Agent to issue to the Investor, not later than 4:00 p.m. (New York City time) on the Trading Day immediately following such date, as DWAC Shares, such that they are credited to the Investor's or its designee's specified DWAC account with DTC under its FAST Program, the Initial Commitment Shares. On the ninetieth (90) calendar day following the Commencement Date, the Company shall deliver irrevocable instructions to the Transfer Agent to issue to the Investor, not later than 4:00 p.m. (New York City time) on such date, as DWAC Shares, such that they are credited to the Investor's or its designee's specified DWAC account with DTC under its FAST Program, the First Back End Commitment Shares. On the one hundred and eightieth (180) calendar day following the Commencement Date, the Company shall deliver irrevocable instructions to the Transfer Agent to issue to the Investor, not later than 4:00 p.m. (New York City time) on such date, as DWAC Shares, such that they are credited to the Investor's or its designee's specified DWAC account with DTC under its FAST Program, the Second Back End Commitment Shares. For the avoidance of doubt, all of the Commitment Shares shall be fully earned as of the Closing Date, and whether any Fixed Purchases, VWAP Purchases or Additional VWAP Purchases are made or settled hereunder or any subsequent termination of this Agreement. Upon issuance, the Initial Commitment Shares shall constitute "restricted securities" as such term is defined in Rule 144(a)(3) under the Securities Act and, subject to the provisions of subsection (iv) of this Section 9.1, the certificate or book-entry statement representing the Initial Commitment Shares shall bear the restrictive legend set forth below in subsection (iii) of this Section 9.1. The Commitment Shares shall constitute Registrable Securities and shall be included in the New Registration Statement and any post-effective amendment thereto, and the Prospectus included therein and, if necessary to register the resale thereof by the Investor under the Securities Act, in any New Registration Statement and any post-effective amendment thereto, in each case in accordance with this Agreement and the Registration Rights Agreement. (iii) Irrevocable Transfer Agent Instructions; Notice of Effectiveness. On the Commencement Date, the Company shall cause the Transfer Agent to deliver to the Investor in the form of a certificate or book-entry statement, such number of Common Shares equal to the number of Commitment Shares, not including the Back End Commitment Shares issued to the Investor pursuant to Section 9.1(ii). The Company shall take all actions to carry out the intent and accomplish the purposes of the immediately preceding sentence, including, without limitation, delivering all such legal opinions, consents, certificates, resolutions and instructions to the Transfer Agent, and any successor transfer agent of the Company, as may be requested from time to time by the Investor or necessary or desirable to carry out the intent and accomplish the purposes of the immediately preceding sentence. Upon the filing of the New Registration Statement, the Company shall deliver or cause to be delivered to the Transfer Agent (and thereafter, shall deliver or cause to be delivered to any subsequent transfer agent of the Company), (i) irrevocable instructions executed by the Company and acknowledged in

writing by the Transfer Agent (the "Commencement Irrevocable Transfer Agent Instructions") and (ii) the notice of effectiveness in the form attached as an exhibit to the Registration Rights Agreement (the "Notice of Effectiveness") relating to the New Registration Statement executed by the Company's outside counsel, in each case directing the Transfer Agent to issue to the Investor or its designee all of the Commitment Shares, not including the Back End Commitment Shares, as DWAC Shares in accordance with this Agreement and the Registration Rights Agreement. With respect to any post-effective amendment to any New Registration Statement or any post-effective amendment to any New Registration Statement, in each case declared effective by the Commission after the Commencement Date, the Company shall deliver or cause to be delivered to the Transfer Agent (and thereafter, shall deliver or cause to be delivered to any subsequent transfer agent of the Company) (i) irrevocable instructions in the form substantially similar to the Commencement Irrevocable Transfer Agent Instructions executed by the Company and acknowledged in writing by the Transfer Agent and (ii) the Notice of Effectiveness, in each case modified as necessary to refer to such Registration Statement or post-effective amendment and the Registrable Securities included therein. For the avoidance of doubt, all Shares and Commitment Shares to be issued from and after Commencement to or for the benefit of the Investor pursuant to this Agreement shall be issued to the Investor or its designee only as DWAC Shares. The Company represents and warrants to the Investor that, while this Agreement is effective, no instruction other than those referred to in this Section 9.1(iv) will be given by the Company to the Transfer Agent, or any successor transfer agent of the Company, with respect to the Shares and the Commitment Shares from and after Commencement, and the Shares and the Commitment Shares (as applicable) covered by any New Registration Statement or post-effective amendment thereof, as applicable, shall otherwise be freely transferable on the books and records of the Company and no stop transfer instructions shall be maintained against the transfer thereof. The Company agrees that if the Company fails to fully comply with the provisions of this Section 9.1(iv) within three (3) Trading Days after the date on which the Investor has provided the deliverables referred to above that the Investor is required to provide to the Company or the Transfer Agent, the Company shall, at the Investor's written instruction, purchase from the Investor all Common Shares purchased or acquired by the Investor pursuant to this Agreement that contain the restrictive legend referred to in Section 9.1(iii) hereof (or any similar restrictive legend) at the greater of (i) the purchase price paid for such Common Shares (as applicable) and (ii) the Closing Sale Price of the Common Shares on the date of the Investor's written instruction. **32 Section 9.2. Specific Enforcement, Consent to Jurisdiction, Waiver of Jury Trial.** (i) The Company and the Investor acknowledge and agree that irreparable damage would occur in the event that any of the provisions of this Agreement were not performed in accordance with their specific terms or were otherwise breached. It is accordingly agreed that the Company, on the one hand, and the Investor, on the other hand, shall be entitled to an injunction or injunctions to prevent or cure breaches of the provisions of this Agreement by the other party and to enforce specifically the terms and provisions hereof (without the necessity of showing economic loss and without any bond or other security being required), this being in addition to any other remedy to which either party may be entitled by law or equity. (ii) Each of the Company and the Investor (a) hereby irrevocably submits to the jurisdiction of the U.S. District Court and other courts of the United States sitting in the State of New York for the purposes of any suit, action or proceeding arising out of or relating to this Agreement, and (b) hereby waives, and agrees not to assert in any such suit, action or proceeding, any claim that it is not personally subject to the jurisdiction of such court, that the suit, action or proceeding is brought in an inconvenient forum or that the venue of the suit, action or proceeding is improper. Each of the Company and the Investor consents to process being served in any such suit, action or proceeding by mailing a copy thereof to such party at the address in effect for notices to it under this Agreement and agrees that such service shall constitute good and sufficient service of process and notice thereof. Nothing in this Section 9.2 shall affect or limit any right to serve process in any other manner permitted by law. (iii) **EACH OF THE COMPANY AND THE INVESTOR HEREBY WAIVES TO THE FULLEST EXTENT PERMITTED BY APPLICABLE LAW, ANY RIGHT IT MAY HAVE TO A TRIAL BY JURY IN RESPECT TO ANY LITIGATION DIRECTLY OR INDIRECTLY ARISING OUT OF, UNDER OR IN CONNECTION WITH THIS AGREEMENT OR THE TRANSACTIONS CONTEMPLATED HEREBY OR DISPUTES RELATING HERETO. EACH OF THE COMPANY AND THE INVESTOR (A) CERTIFIES THAT NO REPRESENTATIVE, AGENT OR ATTORNEY OF ANY OTHER PARTY HAS REPRESENTED, EXPRESSLY OR OTHERWISE, THAT SUCH OTHER PARTY WOULD NOT, IN THE EVENT OF LITIGATION, SEEK TO ENFORCE THE FOREGOING WAIVER AND (B) ACKNOWLEDGES THAT IT AND THE OTHER PARTIES HERETO HAVE BEEN TO ENTER INTO THIS AGREEMENT BY, AMONG OTHER THINGS, THE MUTUAL WAIVERS AND CERTIFICATIONS IN THIS SECTION 9.2.** **Section 9.3. Entire Agreement.** The Transaction Documents set forth the entire agreement and understanding of the parties with respect to the subject matter hereof and supersedes all prior and contemporaneous agreements, negotiations and understandings between the parties, both oral and written, with respect to such matters. There are no promises, undertakings, representations or warranties by either party relative to subject matter hereof not expressly set forth in the Transaction Documents. The Disclosure Schedule and all exhibits to this Agreement are hereby incorporated by reference in, and made a part of, this Agreement as if set forth in full herein. **Section 9.4. Notices.** Any notice, demand, request, waiver or other communication required or permitted to be given hereunder shall be in writing and shall be effective (a) upon hand delivery or electronic mail delivery at the address or number designated below (if delivered on a business day during normal business hours where such notice is to be received), or the first business day following such delivery (if delivered other than on a business day during normal business hours where such notice is to be received) or (b) on the second business day following the date of mailing by express courier service, fully prepaid, addressed to such address, or upon actual receipt of such mailing, whichever shall first occur. The address for such communications shall be: If to the Company: Aptose Biosciences Inc. 12770 High Bluff Drive, Suite 120 San Diego, CA 92130, USA Attention: Fletcher Payne, Senior VP and Chief Financial Officer Email: fpayne@aptose.com With a copy (which shall not constitute notice) to: Dorsey & Whitney LLP 1400 Wewatta Street, Suite 400 Denver, CO 80202 Attention: Anthony Epps, Esq. Email: epps.anthony@dorsey.com **33** If to the Investor: Keystone Capital Partners, LLC 139 Fulton Street, Suite 412 New York, NY 10038 Telephone Number: (646) 349-0916 Email: fz@keystone-cp.com Attention: Fredric Zaino With a copy (which shall not constitute notice) to: Pryor Cashman LLP 7 Times Square New York, NY 10036 Attention: M. Ali Panjwani, Esq. Either party hereto may from time to time change its address for notices by giving at least five (5) days' advance written notice of such changed address to the other party hereto. **Section 9.5. Waivers.** No provision of this Agreement may be waived by the parties from and after the date that is one (1) Trading Day immediately preceding the filing of the New Registration Statement with the Commission. Subject to the immediately preceding sentence, no provision of this Agreement may be waived other than in a written instrument signed by the party against whom enforcement of such waiver is sought. No failure or delay in the exercise of any power, right or

privilege hereunder shall operate as a waiver thereof, nor shall any single or partial exercise of any such power, right or privilege preclude other or further exercises thereof or of any other right, power or privilege. Section 9.6. Amendments. No provision of this Agreement may be amended by the parties from and after the date that is one (1) Trading Day immediately preceding the filing of the New Registration Statement with the Commission. Subject to the immediately preceding sentence, no provision of this Agreement may be amended other than by a written instrument signed by both parties hereto. Section 9.7. Headings. The article, section and subsection headings in this Agreement are for convenience only and shall not constitute a part of this Agreement for any other purpose and shall not be deemed to limit or affect any of the provisions hereof. Unless the context clearly indicates otherwise, each pronoun herein shall be deemed to include the masculine, feminine, neuter, singular and plural forms thereof. The terms "including," "includes," "include" and words of like import shall be construed broadly as if followed by the words "without limitation." The terms "herein," "hereunder," "hereof" and words of like import refer to this entire Agreement instead of just the provision in which they are found. Section 9.8. Construction. The parties agree that each of them and their respective counsel has reviewed and had an opportunity to revise the Transaction Documents and, therefore, the normal rule of construction to the effect that any ambiguities are to be resolved against the drafting party shall not be employed in the interpretation of the Transaction Documents. In addition, each and every reference to share prices and number of Common Shares in any Transaction Document shall, in all cases, be subject to adjustment for any share splits, share combinations, share dividends, recapitalizations, reorganizations and other similar transactions that occur on or after the date of this Agreement. Any reference in this Agreement to "Dollars" or "\$" shall mean the lawful currency of the United States of America. Any references to "Section" or "Article" in this Agreement shall, unless otherwise expressly stated herein, refer to the applicable Section or Article of this Agreement. Section 9.9. Binding Effect. This Agreement shall be binding upon and inure to the benefit of the parties hereto and their respective successors. Neither the Company nor the Investor may assign this Agreement or any of their respective rights or obligations hereunder to any Person. Section 9.10. No Third Party Beneficiaries. Except as expressly provided in Article VIII, this Agreement is intended only for the benefit of the parties hereto and their respective successors, and is not for the benefit of, nor may any provision hereof be enforced by, any other Person. A 34 Section 9.11. Governing Law. This Agreement shall be governed by and construed in accordance with the internal procedural and substantive laws of the State of New York, without giving effect to the choice of law provisions of such state that would cause the application of the laws of any other jurisdiction.

Section 9.12. Survival. The representations, warranties, covenants and agreements of the Company and the Investor contained in this Agreement shall survive the execution and delivery hereof until the termination of this Agreement; provided, however, that (i) the provisions of Article IV (Representations and Warranties of the Company), Article VII (Termination), Article VIII (Indemnification) and this Article IX (Miscellaneous) shall remain in full force and effect indefinitely notwithstanding such termination, and, (ii) so long as the Investor owns any Securities, the covenants and agreements of the Company and the Investor contained in Article V (Covenants), shall remain in full force and effect notwithstanding such termination for a period of six (6) months following such termination. Section 9.13.

Counterparts. This Agreement may be executed in two or more identical counterparts, all of which shall be considered one and the same agreement and shall become effective when counterparts have been signed by each party and delivered to the other party; provided that a facsimile signature or signature delivered by e-mail in a ".pdf" format data file, including any electronic signature complying with the U.S. federal ESIGN Act of 2000, e.g., [www.docusign.com](http://www.docusign.com), [www.echosign.adobe.com](http://www.echosign.adobe.com), etc., shall be considered due execution and shall be binding upon the signatory thereto with the same force and effect as if the signature were an original signature. Section 9.14. Publicity. The Company shall afford the Investor and its counsel with a reasonable opportunity to review and comment upon, shall consult with the Investor and its counsel on the form and substance of, and shall give due consideration to all such comments from the Investor or its counsel on, any press release, Commission filing or any other public disclosure made by or on behalf of the Company relating to the Investor, its purchases hereunder or any aspect of the Transaction Documents or the transactions contemplated thereby, prior to the issuance, filing or public disclosure thereof. For the avoidance of doubt, the Company shall not be required to submit for review any such disclosure (i) contained in periodic reports filed with the Commission under the Exchange Act if it shall have previously provided the same disclosure to the Investor or its counsel for review in connection with a previous filing or (ii) any Prospectus

Supplement if it contains disclosure that does not reference the Investor, its purchases hereunder or any aspect of the Transaction Documents or the transactions contemplated thereby. Section 9.15. Severability. The provisions of this Agreement are severable and, in the event that any court of competent jurisdiction shall determine that any one or more of the provisions or part of the provisions contained in this Agreement shall, for any reason, be held to be invalid, illegal or unenforceable in any respect, such invalidity, illegality or unenforceability shall not affect any other provision or part of a provision of this Agreement, and this Agreement shall be reformed and construed as if such invalid or illegal or unenforceable provision, or part of such provision, had never been contained herein, so that such provisions would be valid, legal and enforceable to the maximum extent possible. Section 9.16. Further Assurances. From and after the Closing Date, upon the request of the Investor or the Company, each of the Company and the Investor shall execute and deliver such instrument, documents and other writings as may be reasonably necessary or desirable to confirm and carry out and to effectuate fully the intent and purposes of this Agreement. [Signature Pages Follow] A 35 IN WITNESS

WHEREOF, the parties hereto have caused this Agreement to be duly executed by their respective authorized officer as of the date first above written. A THE COMPANY: Aptose Biosciences Inc.: By: A /s/ William G. Rice Name: William G. Rice, Ph.D. Title: Chairman, President, and Chief Executive Officer THE INVESTOR: KEYSTONE CAPITAL PARTNERS, LLC: By: A /s/ Fred Zaino Name: Fred Zaino Title: Chief Investment Officer A 36 ANNEX I TO THE COMMON SHARE PURCHASE AGREEMENT DEFINITIONS "Additional VWAP Purchase" shall have the meaning assigned to such term in Section 2.3. "Additional VWAP Purchase Commencement Time" means, the latest of (A) the applicable VWAP Purchase Termination Time with respect to the corresponding VWAP Purchase on such Additional VWAP Purchase Date, (B) the applicable Additional VWAP Purchase Termination Time with respect to the most recently completed prior Additional VWAP Purchase on such Additional VWAP Purchase Date, as applicable, and (C) the time at which all Common Shares subject to all prior VWAP Purchases and Additional VWAP Purchases (as applicable), including, without limitation, those that have been effected on the same business day as the applicable Additional VWAP Purchase, have been received by the Investor. "Additional VWAP Purchase Confirmation" shall have the meaning assigned to such term in Section 2.3 and shall be in the form attached hereto as Annex 2.3B. "Additional VWAP Purchase Date" means, with respect to an Additional VWAP Purchase made pursuant to Section 2.3, the Trading Day (i) that is also the VWAP Purchase Date for the corresponding VWAP Purchase referred to in clause (i) of the second

sentence of Section 2.3 and (ii) on which the Investor receives, prior to 2:00 p.m., New York City time, on such Trading Day, a valid Additional VWAP Purchase Notice for such Additional VWAP Purchase in accordance with this Agreement. "Additional VWAP Purchase Maximum Amount" means, with respect to an Additional VWAP Purchase made pursuant to Section 2.3, a number of Common Shares equal to the lesser of (i) 300% of the number of Shares directed by the Company to be purchased by the Investor pursuant to the corresponding Fixed Purchase Notice for the corresponding Fixed Purchase referred to in clause (i) of the second sentence of Section 2.3 and (ii) a number of Shares equal to (A) the Additional VWAP Purchase Share Percentage multiplied by (B) the trading volume of Common Shares traded on the Trading Market (or, if the Common Shares are then listed on an Eligible Market, on such Eligible Market) during the applicable Additional VWAP Purchase Period on the applicable Additional VWAP Purchase Date for such Additional VWAP Purchase. "Additional VWAP Purchase Notice" means, with respect to an Additional VWAP Purchase made pursuant to Section 2.3, an irrevocable written notice delivered by the Company to the Investor, prior to 2:00 p.m., New York City time, on the applicable Additional VWAP Purchase Date for such Additional VWAP Purchase, directing the Investor to purchase an Additional VWAP Purchase Share Amount (such specified Additional VWAP Purchase Share Amount subject to adjustment as set forth in Section 2.3 as necessary to give effect to the Additional VWAP Purchase Maximum Amount), at the applicable Additional VWAP Purchase Price therefor on the applicable Additional VWAP Purchase Date for such Additional VWAP Purchase in accordance with this Agreement. "Additional VWAP Purchase Period" means, with respect to an Additional VWAP Purchase made pursuant to Section 2.3, the period on the applicable Additional VWAP Purchase Date for such Additional VWAP Purchase beginning at the applicable Additional VWAP Purchase Commencement Time and ending at the applicable Additional VWAP Purchase Termination Time. "Additional VWAP Purchase Price" means, with respect to an Additional VWAP Purchase made pursuant to Section 2.3, the purchase price per Share to be purchased by the Investor in such Additional VWAP Purchase equal to the lower of (i) 95% the VWAP for the applicable Additional VWAP Purchase Period during the applicable Additional VWAP Purchase Date for such Additional VWAP Purchase, and (ii) the Closing Sale Price of the Common Shares on such applicable Additional VWAP Purchase Date for such Additional VWAP Purchase (to be appropriately adjusted for any reorganization, recapitalization, non-cash dividend, share split, reverse share split or other similar transaction). A 37 "Additional VWAP Purchase Share Amount" means, with respect to an Additional VWAP Purchase made pursuant to Section 2.3, the number of Shares to be purchased by the Investor in such Additional VWAP Purchase as specified by the Company in the applicable Additional VWAP Purchase Notice, which number of Shares shall not exceed the applicable Additional VWAP Purchase Maximum Amount. "Additional VWAP Purchase Share Percentage" means, with respect to an Additional VWAP Purchase made pursuant to Section 2.3, thirty percent (30%). "Additional VWAP Purchase Share Volume Maximum" means, with respect to an Additional VWAP Purchase made pursuant to Section 2.3, a number of Common Shares equal to (i) the number of Shares specified by the Company in the applicable Additional VWAP Purchase Notice as the Additional VWAP Purchase Share Amount to be purchased by the Investor in such Additional VWAP Purchase, divided by (ii) the Additional VWAP Purchase Share Percentage (to be appropriately adjusted for any reorganization, recapitalization, non-cash dividend, share split, reverse share split or other similar transaction). "Additional VWAP Purchase Termination Time" means, with respect to an Additional VWAP Purchase made pursuant to Section 2.3, the earliest of (i) 4:00 p.m., New York City time, on the applicable Additional VWAP Purchase Date, or such other time publicly announced by the Trading Market as the official close of trading on the Trading Market (or, if the Common Shares are then listed on an Eligible Market, by such Eligible Market as the official close of trading on such Eligible Market) on such applicable Additional VWAP Purchase Date, (ii) such time, from and after the Additional VWAP Purchase Commencement Time for such Additional VWAP Purchase, that the trading volume of Common Shares traded on the Trading Market (or, if the Common Shares are then listed on an Eligible Market, on such Eligible Market) has exceeded the applicable Additional VWAP Purchase Share Volume Maximum and (iii) such time, from and after the Additional VWAP Purchase Commencement Time for such Additional VWAP Purchase, that any sale price of the Common Shares traded on the Trading Market (or, if the Common Shares are then listed on an Eligible Market, on such Eligible Market) has fallen below the applicable Floor Price for such applicable Additional VWAP Purchase. "Affiliate" means any Person that, directly or indirectly through one or more intermediaries, controls, is controlled by, or is under common control with a Person, as such terms are used in and construed under Rule 144. With respect to the Investor, without limitation, any Person owning, owned by, or under common ownership with the Investor, and any investment fund or managed account that is managed on a discretionary basis by the same investment manager as the Investor will be deemed to be an Affiliate. "Aggregate Limit" shall have the meaning assigned to such term in Section 2.4(a). "Agreement" shall have the meaning assigned to such term in the preamble of this Agreement. "Applicable Laws" shall have the meaning assigned to such term in Section 4.13. "Average Price" means a price per Share (rounded to the nearest tenth of a cent) equal to the quotient obtained by dividing (i) the aggregate gross purchase price paid by the Investor for all Shares purchased pursuant to this Agreement, by (ii) the aggregate number of Shares issued pursuant to this Agreement. "Bankruptcy Law" means Title 11, U.S. Code, or any similar U.S. federal or state law for the relief of debtors. "Beneficial Ownership Limitation" shall have the meaning assigned to such term in Section 2.5. "Bloomberg" means Bloomberg, L.P. "Bring Down Opinion" shall have the meaning assigned to such term in Section 5.15. "Broker-Dealer" shall have the meaning assigned to such term in Section 5.13. "Bylaws" shall have the meaning assigned to such term in Section 4.4. A 38 "Charter" shall have the meaning assigned to such term in Section 3.3. "Closing" shall have the meaning assigned to such term in Section 1.2. "Closing Date" means the date of this Agreement. "Closing Sale Price" means, for the Common Shares as of any date, the greater of (i) the then current book value of the Common Shares, and (ii) the last closing trade price for the Common Shares on the Trading Market (or, if the Common Shares are then listed on an Eligible Market, on such Eligible Market), as reported by Bloomberg, or, if the Trading Market (or such Eligible Market, as applicable) begins to operate on an extended hours basis and does not designate the closing trade price for the Common Shares, then the last trade price for the Common Shares prior to 4:00 p.m., New York City time, as reported by Bloomberg. All such determinations shall be appropriately adjusted for any share splits, share dividends, share combinations, recapitalizations or other similar transactions during such period. "Code" means the Internal Revenue Code of 1986, as amended. "Commencement" shall have the meaning assigned to such term in Section 2.1. "Commencement Date" shall have the meaning assigned to such term in Section 2.1. "Commencement Irrevocable Transfer Agent Instructions" shall have the meaning assigned to such term in Section 9.1(iv). "Commission" means the U.S. Securities and Exchange Commission or any successor entity. "Commission Documents" shall mean (1) all reports, schedules, registrations, forms, statements, information and other documents filed with or furnished to the

Commission by the Company pursuant to the reporting requirements of the Exchange Act, including all material filed with or furnished to the Commission pursuant to Section 13(a), 13(c), 14 or 15(d) of the Exchange Act, since December 31, 2023, including, without limitation, the Annual Report on Form 10-K filed by the Company for its fiscal year ended December 31, 2023 (the “2023 Form 10-K”), and which hereafter shall be filed with or furnished to the Commission by the Company, including, without limitation, the Current Report, (2) each Registration Statement, as the same may be amended from time to time, the Prospectus contained therein and each Prospectus Supplement thereto and (3) all information contained in such filings and all documents and disclosures that have been and heretofore shall be incorporated by reference therein. “Commitment Shares” means (i) 72,181 shares of the Company’s Common Shares issuable upon execution of this Agreement (the “Initial Commitment Shares”), (ii) 72,181 shares of the Company’s Common Shares issuable on the ninetieth (90) calendar day following the Effective Date (the “First Back End Commitment Shares”) and (iii) 96,242 shares of the Company’s Common Shares issuable on the one hundred and eightieth (180) calendar day following the Effective Date (the “Second Back End Commitment Shares”), and together with the First Back End Commitment Shares, the “Back End Commitment Shares”). “Common Shares” shall have the meaning assigned to such term in the recitals of this Agreement. “Common Shares Equivalents” means any securities of the Company or the Subsidiaries which would entitle the holder thereof to acquire at any time Common Shares, including, without limitation, any debt, preferred stock, right, option, warrant or other instrument that is at any time convertible into or exercisable or exchangeable for, or otherwise entitles the holder thereof to receive, Common Shares. “Company” shall have the meaning assigned to such term in the preamble of this Agreement. “Compliance Certificate” shall have the meaning assigned to such term in Section 6.2(ii). “Current Report” shall have the meaning assigned to such term in Section 1.3. A 39 “Custodian” shall mean any receiver, trustee, assignee, liquidator or similar official under any Bankruptcy Law. “Damages” shall have the meaning assigned to such term in Section 8.1. “Dilutive Issuance” shall have the meaning assigned to such term in Section 4.1. “Disqualification Event” shall have the meaning assigned to such term in Section 4.37. “DTC” means The Depository Trust Company, a subsidiary of The Depository Trust & Clearing Corporation, or any successor thereto. “DWAC” shall have the meaning assigned to such term in Section 2.6. “DWAC Shares” means Common Shares issued pursuant to this Agreement that are (i) issued in electronic form, (ii) freely tradable and transferable and without restriction on resale and without stop transfer instructions maintained against the transfer thereof and (iii) timely credited by the Company to the Investor’s or its designated Broker-Dealer at which the account or accounts to be credited with the Securities being purchased by Investor are maintained specified DWAC account with DTC under its Fast Automated Securities Transfer (FAST) Program, or any similar program hereafter adopted by DTC performing substantially the same function. “EDGAR” means the Commission’s Electronic Data Gathering, Analysis and Retrieval System. “Effective Date” means, with respect to any New Registration Statement filed pursuant to Section 2(c) of the Registration Rights Agreement (or any post-effective amendment thereto), as applicable, the date on which any New Registration Statement (or any post-effective amendment thereto) is declared effective by the Commission. “Effectiveness Deadline” shall have the meaning assigned to such term in the Registration Rights Agreement. “Eligible Market” means The New York Stock Exchange American, Nasdaq Capital Market, The Nasdaq Global Market, or The Nasdaq Global Select Market (or any nationally recognized successor to any of the foregoing). “Environmental Laws” shall have the meaning assigned to such term in Section 4.16 hereof. “Exchange Act” means the Securities Exchange Act of 1934, as amended, and the rules and regulations of the Commission thereunder. “Exempt Issuance” means the issuance of (a) Common Shares, options or other equity incentive awards to employees, officers, directors or vendors of the Company pursuant to any equity incentive plan duly adopted for such purpose, by the Company’s Board of Directors or a majority of the members of a committee of the Board of Directors established for such purpose, (b) (1) any Securities issued to the Investor pursuant to this Agreement, (2) any securities issued upon the exercise or exchange of or conversion of any Common Shares or Common Shares Equivalents held by the Investor at any time, or (3) any securities issued upon the exercise or exchange of or conversion of any Common Shares Equivalents issued and outstanding on the date of this Agreement, provided that such securities referred to in this clause (3) have not been amended since the date of this Agreement to increase the number of such securities or to decrease the exercise price, exchange price or conversion price of such securities, (c) securities issued pursuant to acquisitions, divestitures, licenses, partnerships, collaborations or strategic transactions approved by the Company’s Board of Directors or a majority of the members of a committee of directors established for such purpose, which acquisitions, divestitures, licenses, partnerships, collaborations or strategic transactions can have a Variable Rate Transaction component, provided that any such issuance shall only be to a Person (or to the equity holders of a Person) which is, itself or through its subsidiaries, an operating company or an asset in a business synergistic with the business of the Company and shall provide to the Company additional benefits in addition to the investment of funds, but shall not include a transaction in which the Company is issuing securities primarily for the purpose of raising capital or to A 40 an entity whose primary business is investing in securities, or (d) Common Shares issued by the Company by any method deemed to be an “at the market offering” as defined in Rule 415(a)(4) under the Securities Act, exclusively through a registered broker-dealer, as the Company’s sales agent, pursuant to one or more written agreements between the Company and such registered broker-dealer. “FCPA” shall have the meaning assigned to such term in Section 4.33. “Filed Commission Document” shall have the meaning assigned to such term in Section 4.6. “Filing Deadline” shall have the meaning assigned to such term in the Registration Rights Agreement. “FINRA” means the Financial Industry Regulatory Authority. “Fixed Purchase” shall have the meaning assigned to such term in Section 2.1. “Fixed Purchase Date” means, with respect to a Fixed Purchase made pursuant to Section 2.1, the Trading Day on which the Investor receives, after 4:00 p.m., New York City time, but prior to 5:30 p.m., New York City time, on such Trading Day, a valid Fixed Purchase Notice for such Fixed Purchase in accordance with this Agreement. “Fixed Purchase Maximum Amount” means, with respect to a Fixed Purchase made pursuant to Section 2.1, 50,000 Common Shares (to be appropriately adjusted for any reorganization, recapitalization, non-cash dividend, share split or other similar transaction that occurs on or after the date of this Agreement). “Fixed Purchase Notice” means, with respect to a Fixed Purchase pursuant to Section 2.1, an irrevocable written notice delivered by the Company to the Investor directing the Investor to purchase a Fixed Purchase Share Amount (such specified Fixed Purchase Share Amount subject to adjustment as set forth in Section 2.1 as necessary to give effect to the Fixed Purchase Maximum Amount), at the applicable Fixed Purchase Price therefor on the applicable Fixed Purchase Date for such Fixed Purchase in accordance with this Agreement. “Fixed Purchase Price” means, with respect to a Fixed Purchase

made pursuant to Section 2.1, the purchase price per Share to be purchased by the Investor in such Fixed Purchase equal to the lesser of (i) 95% of the daily volume weighted average price of the Company's Common Shares on the Trading Market, as reported by Bloomberg Financial LP using the AQR function for the five (5) Trading Days immediately preceding the applicable Fixed Purchase Date for such Fixed Purchase and (ii) of the Closing Sale Price of a Common Share on the applicable Fixed Purchase Date for such Fixed Purchase during the full Trading Day on the Trading Market on such applicable Fixed Purchase Date (in each case, to be appropriately adjusted for any reorganization, recapitalization, non-cash dividend, share split or other similar transaction that occurs on or after the date of this Agreement). "Fixed Purchase Share Amount" means, with respect to a Fixed Purchase made pursuant to Section 2.1, the number of Shares to be purchased by the Investor in such Fixed Purchase as specified by the Company in the applicable Fixed Purchase Notice, which number of Shares shall not exceed the applicable Fixed Purchase Maximum Amount (calculated as of the applicable Fixed Purchase Date). "Floor Price" means a price equal to 85% of the Closing Price on the Trading Day the applicable Additional VWAP Purchase Notice or VWAP Purchase Notice is delivered to Investor along with the Fixed Purchase Notice. "Fundamental Transaction" means that (i) the Company shall, directly or indirectly, in one or more related transactions, (1) consolidate or merge with or into (whether or not the Company is the surviving corporation) another Person, with the result that the holders of the Company's shares immediately prior to such consolidation or merger together beneficially own less than 50% of the outstanding voting power of the surviving or resulting corporation, or (2) sell, lease, license, assign, transfer, convey or otherwise dispose of all or substantially all of the properties or assets of the Company to another Person, or (3) take action to facilitate a purchase, tender or exchange offer by another Person that is accepted by the holders of the Company's Voting Stock representing more than 50% of the total voting power of the Company's Voting Stock (excluding any Voting Stock held by the Person or Persons making or party to, or associated or affiliated with the Persons making or party to, such purchase, tender or exchange offer), or (4) 41 consummate a stock or share purchase agreement or other business combination (including, without limitation, a reorganization, recapitalization, spin-off or scheme of arrangement) with another Person whereby such other Person acquires Voting Stock of the Company representing more than 50% of the total voting power of the Company's Voting Stock (not including any Voting Stock held by the other Person or other Persons making or party to, or associated or affiliated with the other Persons making or party to, such stock or share purchase agreement or other business combination), or (5) reorganize, recapitalize or reclassify its Common Shares, or (ii) any "person" or "group" (as these terms are used for purposes of Sections 13(d) and 14(d) of the Exchange Act) is or shall become the "beneficial owner" (as defined in Rule 13d-3 under the Exchange Act), directly or indirectly, of Voting Stock of the Company representing more than 50% of the total voting power of the Company's Voting Stock. "GAAP" shall have the meaning assigned to such term in Section 4.6(b). "Investment Period" means the period commencing on the Effective Date of the New Registration Statement and expiring on the date this Agreement is terminated pursuant to Article VII. "Investor" shall have the meaning assigned to such term in the preamble of this Agreement. "Investor Expense Reimbursement" shall have the meaning assigned to such term in Section 9.1(i). "Investor Party" shall have the meaning assigned to such term in Section 8.1. "Issuer Covered Person" shall have the meaning assigned to such term in Section 4.37. "IT Systems" shall have the meaning assigned to such term in Section 4.36. "Knowledge" means, with respect to the Company, the actual knowledge of the Company's Chief Executive Officer, Chief Medical Officer, President, Chief Financial Officer, Treasurer, and its General Counsel, in each case after reasonable inquiry of all officers, directors and employees of the Company and its Subsidiaries under their direct supervision who would reasonably be expected to have knowledge or information with respect to the matter in question. "Material Adverse Effect" means any material adverse effect on (i) the enforceability of any Transaction Document, (ii) the results of operations, assets, business or financial condition of the Company and its Subsidiaries, taken as a whole, other than any material adverse effect that resulted primarily from (A) any change in the United States or foreign economies or securities or financial markets in general, (B) any change that generally affects the industry in which the Company and its Subsidiaries operate, (C) any change arising in connection with earthquakes, hostilities, acts of war, sabotage or terrorism or military actions or any escalation or material worsening of any such hostilities, acts of war, sabotage or terrorism or military actions existing as of the date hereof, (D) any action taken by the Investor, its Affiliates or its or their successors and assigns with respect to the transactions contemplated by this Agreement and the Registration Rights Agreement, (E) the effect of any change in applicable laws or accounting rules, or (F) any change resulting from compliance with terms of this Agreement or the Registration Rights Agreement or the consummation of the transactions contemplated by this Agreement and the Registration Rights Agreement, or (iii) the Company's ability to perform in any material respect on a timely basis its obligations under any Transaction Document to which it is a party to be performed as of the date of determination. "Material Agreements" shall have the meaning assigned to such term in Section 4.17. "Minimum Price" means \$0.1854, representing the official closing price of the common shares on the Trading Market (as reflected on Nasdaq.com) on the trading day immediately preceding the date of this Agreement (subject to adjustment for any reorganization, recapitalization, non-cash dividend, share split, reverse share split or other similar transaction that occurs on or after the date of this Agreement). "Money Laundering Laws" shall have the meaning assigned to such term in Section 4.34. "New Registration Statement" shall have the meaning assigned to such term in the Registration Rights Agreement. "Notice Delivery Time" shall have the meaning assigned to such term in Section 6.3. "Notice of Effectiveness" shall have the meaning assigned to such term in Section 9.1(iv). "OFAC" shall have the meaning assigned to such term in Section 4.35. "Person" means any person or entity, whether a natural person, trustee, corporation, partnership, limited partnership, limited liability company, trust, unincorporated organization, business association, firm, joint venture, governmental agency or authority. "Personal Data" shall have the meaning assigned to such term in Section 4.36. "Prospectus" means the prospectus in the form included in a Registration Statement, as supplemented from time to time by any Prospectus Supplement, including the documents incorporated by reference therein. "Prospectus Supplement" means any prospectus supplement to the Prospectus filed with the Commission from time to time pursuant to Rule 424(b) under the Securities Act, including the documents incorporated by reference therein. "Reference Period" shall have the meaning assigned to such term in Section 5.6(ii). "Reference Price" shall have the meaning assigned to such term in Section 5.6(ii). "Registrable Securities" shall have the meaning assigned to such term in the Registration Rights Agreement, and shall include the Commitment Shares, not including the Back End Commitment Shares. "Registration Rights Agreement" shall have the meaning assigned to such term in the recitals hereof. "Registration Statement" shall have the meaning assigned to such term in the Registration Rights Agreement. "Regulation D" shall have the

meaning assigned to such term in the recitals of this Agreement. "Restricted Period" shall have the meaning assigned to such term in Section 5.9(i). "Restricted Person" shall have the meaning assigned to such term in Section 5.9(i). "Restricted Persons" shall have the meaning assigned to such term in Section 5.9(i). "Rule 144" means Rule 144 promulgated by the Commission pursuant to the Securities Act, as such Rule may be amended from time to time, or any similar rule or regulation hereafter adopted by the Commission having substantially the same effect. "Sale Price" means any trade price for a Common Share executed on the Trading Market (or if the Common Shares are then traded on an Eligible Market, on such Eligible Market) between 9:30 a.m., New York City time, or such other time publicly announced by the Trading Market or such other Eligible Market, as the case may be, and ending at 4:00 p.m., New York City time, on the applicable Purchase Date, as reported by Bloomberg. "Sanctioned Countries" shall have the meaning assigned to such term in Section 4.35. "Sanctioned Country" shall have the meaning assigned to such term in Section 4.35. "Sanctioned Persons" shall have the meaning assigned to such term in Section 4.35. "Sanctions" shall have the meaning assigned to such term in Section 4.35. "Securities" means, collectively, the Shares and the Commitment Shares. "Securities Act" shall mean the Securities Act of 1933, as amended, and the rules and regulations of the Commission thereunder. "30%" shall mean the Common Shares that are and/or may be purchased by the Investor under this Agreement pursuant to one or more Fixed Purchase Notices, VWAP Purchase Notices or Additional VWAP Purchase Notices, but not including the Commitment Shares. "Short Sales" shall mean "short sales" as defined in Rule 200 promulgated under Regulation SHO under the Exchange Act. "Stock Plan" shall have the meaning assigned to such term in Section 4.22. "Subsidiary" and "Subsidiaries" shall have the meanings assigned to such terms in Section 4.7. "Total Purchase Commitment" shall have the meaning assigned to such term in Section 1.1. "Trading Day" shall mean any day on which the Trading Market or, if the Common Shares are then listed on an Eligible Market, such Eligible Market is open for trading, including any day on which the Trading Market (or such Eligible Market, as applicable) is open for trading for a period of time less than the customary time. "Trading Market" means the Nasdaq Capital Market (or any nationally recognized successor thereto). "Transaction Documents" means, collectively, this Agreement (as qualified by the Disclosure Schedule) and the exhibits hereto, the Registration Rights Agreement and each of the other agreements, documents, certificates and instruments entered into or furnished by the parties hereto in connection with the transactions contemplated hereby and thereby. "Transfer Agent" means Computershare Investor Services Inc., or such other Person who is then serving as the transfer agent for the Company in respect of the Common Shares. "Variable Rate Transaction" means a transaction in which the Company (i) issues or sells any equity or debt securities that are convertible into, exchangeable or exercisable for, or include the right to receive additional Common Shares or Common Shares Equivalents either (A) at a conversion price, exercise price, exchange rate or other price that is based upon and/or varies with the trading prices of or quotations for the Common Shares at any time after the initial issuance of such equity or debt securities, or (B) with a conversion, exercise or exchange price that is subject to being reset at some future date after the initial issuance of such equity or debt security or upon the occurrence of specified or contingent events directly or indirectly related to the business of the Company or the market for the Common Shares (including, without limitation, any "full ratchet" or "weighted average" anti-dilution provisions, but not including any standard anti-dilution protection for any reorganization, recapitalization, non-cash dividend, share split or other similar transaction), (ii) issues or sells any equity or debt securities, including without limitation, Common Shares or Common Shares Equivalents, either (A) at a price that is subject to being reset at some future date after the initial issuance of such debt or equity security or upon the occurrence of specified or contingent events directly or indirectly related to the business of the Company or the market for the Common Shares (other than standard anti-dilution protection for any reorganization, recapitalization, non-cash dividend, share split or other similar transaction), or (B) that are subject to or contain any put, call, redemption, buy-back, price-reset or other similar provision or mechanism (including, without limitation, a "Black-Scholes" put or call right, other than in connection with a "fundamental transaction") that provides for the issuance of additional equity securities of the Company or the payment of cash by the Company, or (iii) enters into any agreement with any Person other than the Investor or an Affiliate of the Investor, including, but not limited to, an "equity line of credit" or "at the market offering" or other continuous offering or similar offering of Common Shares or Common Shares Equivalents, whereby the Company may sell Common Shares or Common Shares Equivalents at a future determined price. "Voting Stock" means securities of any class or kind having the power to vote generally for the election of directors, managers or other voting members of the governing body of the Company or any successor thereto. "VWAP" means, for the Common Shares for a specified period, the dollar volume-weighted average price for the Common Shares on the Trading Market (or, if the Common Shares are then listed on an Eligible Market, on such Eligible Market), for such period, as reported by Bloomberg through its "AQR" function. All such determinations shall be appropriately adjusted for any share dividend, share split, stock combination, recapitalization or other similar transaction during such period. "VWAP Purchase" shall have the meaning assigned to such term in Section 2.2. "VWAP Purchase Commencement Time" means, with respect to a VWAP Purchase made pursuant to Section 2.2, 9:30 a.m., New York City time, on the applicable VWAP Purchase Date, or such other time publicly announced by the Trading Market (or, if the Common Shares are then listed on an Eligible Market, by such Eligible Market) as the official open (or commencement) of trading on the Trading Market (or such Eligible Market, as applicable) on such applicable VWAP Purchase Date. "VWAP Purchase Confirmation" shall have the meaning assigned to such term in Section 2.2 and shall be in the form attached hereto as Annex 2.2B. "VWAP Purchase Date" means, with respect to a VWAP Purchase made pursuant to Section 2.2, the Trading Day immediately following the applicable Fixed Purchase Date with respect to the corresponding Fixed Purchase referred to in clause (i) of the second sentence of Section 2.2, on which the Investor receives, concurrently with the receipt of the applicable Fixed Purchase Notice for such corresponding Fixed Purchase, after 4:00 p.m., New York City time, but prior to 5:30 p.m., New York City time, on such applicable Fixed Purchase Date, a valid VWAP Purchase Notice for such VWAP Purchase in accordance with this Agreement. "VWAP Purchase Maximum Amount" means, with respect to a VWAP Purchase made pursuant to Section 3.2, a number of Common Shares equal to the lesser of (i) 300% of the Fixed Purchase Maximum Amount to be purchased by the Investor pursuant to the corresponding Fixed Purchase Notice for the corresponding Fixed Purchase referred to in clause (i) of the second sentence of Section 2.2 and (ii) 30% of the trading volume in the Company's Common Shares on the Trading Market during the applicable VWAP Purchase Period on the applicable VWAP Purchase Date. "VWAP Purchase Notice" means, with respect to a VWAP Purchase made pursuant to Section 2.2, an irrevocable written notice delivered by the Company to the Investor (concurrently with the delivery of the applicable Fixed Purchase Notice by the Company to the Investor on the

applicable Fixed Purchase Date with respect to the corresponding Fixed Purchase referred to in clause (i) of the second sentence of Section 2.2) directing the Investor to purchase a VWAP Purchase Share Amount (such specified VWAP Purchase Share Amount subject to adjustment as set forth in Section 3.2 as necessary to give effect to the VWAP Purchase Maximum Amount), at the applicable VWAP Purchase Price therefor on the applicable VWAP Purchase Date for such VWAP Purchase in accordance with this Agreement. "VWAP Purchase Period" means, with respect to a VWAP Purchase made pursuant to Section 2.2, the period on the applicable VWAP Purchase Date for such VWAP Purchase beginning at the applicable VWAP Purchase Commencement Time and ending at the applicable VWAP Purchase Termination Time. "VWAP Purchase Price" means, with respect to a VWAP Purchase made pursuant to Section 2.2, the purchase price per Share to be purchased by the Investor in such VWAP Purchase equal to the lesser of (i) 95% of the Closing Sale Price of the Common Shares on the applicable VWAP Purchase Date and (ii) the VWAP during the applicable VWAP Purchase Period. A "45 VWAP Purchase Share Amount" means, with respect to a VWAP Purchase made pursuant to Section 2.2, the number of Shares to be purchased by the Investor in such VWAP Purchase as specified by the Company in the applicable VWAP Purchase Notice, which number of Shares shall not exceed the applicable VWAP Purchase Maximum Amount. "VWAP Purchase Share Percentage" means, with respect to a VWAP Purchase made pursuant to Section 2.2, thirty percent (30%). "VWAP Purchase Share Volume Maximum" means, with respect to a VWAP Purchase made pursuant to Section 2.2, a number of Common Shares equal to (i) the number of Shares specified by the Company in the applicable VWAP Purchase Notice as the VWAP Purchase Share Amount to be purchased by the Investor in such VWAP Purchase, divided by (ii) the VWAP Purchase Share Percentage (to be appropriately adjusted for any reorganization, recapitalization, non-cash dividend, share split, reverse share split or other similar transaction). "VWAP Purchase Termination Time" means, with respect to a VWAP Purchase made pursuant to Section 2.2, the earliest of (i) 4:00 p.m., New York City time, on the applicable VWAP Purchase Date, or such other time publicly announced by the Trading Market (or, if the Common Shares are then listed on an Eligible Market, by such Eligible Market) as the official close of trading on the Trading Market on such applicable VWAP Purchase Date, (ii) such time, from and after the VWAP Purchase Commencement Time for such VWAP Purchase, that the trading volume of Common Shares traded on the Trading Market (or, if the Common Shares are then listed on an Eligible Market, on such Eligible Market) has exceeded the applicable VWAP Purchase Share Volume Maximum and (iii) such time, from and after the VWAP Purchase Commencement Time for such VWAP Purchase, that any sale price of the Common Shares traded on the Trading Market (or, if the Common Shares are then listed on an Eligible Market, on such Eligible Market) has fallen below the applicable Floor Price for such applicable VWAP Purchase. A 46 EXHIBIT A TO THE COMMON SHARE PURCHASE AGREEMENT [TO BE FURNISHED SEPERATELY] A 47 EXHIBIT B TO THE COMMON SHARE PURCHASE AGREEMENT CERTIFICATE OF THE COMPANY CLOSING CERTIFICATE \_\_\_, 2025 The undersigned, the \_\_\_\_\_ of Aptose Biosciences Inc., a corporation organized under the laws of Canada (the "Company"), delivers this certificate in connection with the Common Share Purchase Agreement, dated as of February 7, 2025 (the "Agreement"), by and between the Company and Keystone Capital Partners, LLC, a Delaware limited liability company (the "Investor"), and hereby certifies on the date hereof that (capitalized terms used herein without definition have the meanings assigned to them in the Agreement): A 1. Attached hereto as Exhibit A is a true, complete and correct copy of the Certificate of Incorporation of the Company, as amended through the date hereof, as filed with the Director pursuant to the Canada Business Corporations Act. The Certificate of Incorporation of the Company has not been further amended or restated, and no document with respect to any amendment to the Certificate of Incorporation of the Company has been filed with the Director pursuant to the Canada Business Corporations Act since the date shown on the face of the state certification relating to the Company's Certificate of Incorporation, which is in full force and effect on the date hereof, and no action has been taken by the Company in contemplation of any such amendment or the dissolution, merger or consolidation of the Company. A 2. Attached hereto as Exhibit B is a true and complete copy of the Bylaws of the Company, as amended and restated through, and as in full force and effect on, the date hereof, and no proposal for any amendment, repeal or other modification to the Bylaws of the Company has been taken or is currently pending before the Board of Directors or shareholders of the Company. A 3. The Board of Directors of the Company has approved the transactions contemplated by the Transaction Documents; said approval has not been amended, rescinded or modified and remains in full force and effect as of the date hereof. Attached hereto as Exhibit C are true, correct and complete copies of the resolutions duly adopted by the Board of Directors of the Company via unanimous written consent on \_\_\_\_\_, 2025. A 4. Each person who, as an officer of the Company, or as attorney-in-fact of an officer of the Company, signed the Transaction Documents to which the Company is a party, was duly elected, qualified and acting as such officer or duly appointed and acting as such attorney-in-fact, and the signature of each such person appearing on any such document is his genuine signature. IN WITNESS WHEREOF, I have signed my name as of the date first above written. A Name: Title: A 48 EXHIBIT C TO THE COMMON SHARE PURCHASE AGREEMENT COMPLIANCE CERTIFICATE The undersigned, the [ ] of Aptose Biosciences Inc., a corporation organized in the laws of Canada (the "Company"), delivers this certificate in connection with the Common Share Purchase Agreement, dated as of [ ], 2025 (the "Agreement"), by and between the Company and Keystone Capital Partners, LLC, a Delaware limited liability company (the "Investor"), and hereby certifies on the date hereof that, to the best of his knowledge after reasonable investigation, on behalf of the Company (capitalized terms used herein without definition have the meanings assigned to them in the Agreement): A 1. The undersigned is the duly appointed [ ] of the Company. A 2. Except as set forth in the attached Disclosure Schedule, the representations and warranties of the Company set forth in Article IV of the Agreement (i) that are not qualified by "materiality" or "Material Adverse Effect" are true and correct in all material respects as of [the Commencement Date] [the date hereof] with the same force and effect as if made on [the Commencement Date] [the date hereof], except to the extent such representations and warranties are as of another date, in which case, such representations and warranties are true and correct in all material respects as of such other date and (ii) that are qualified by "materiality" or "Material Adverse Effect" are true and correct as of [the Commencement Date] [the date hereof] with the same force and effect as if made on [the Commencement Date] [the date hereof], except to the extent such representations and warranties are as of another date, in which case, such representations and warranties are true and correct as of such other date. A 3. The Company has performed, satisfied and complied in all material respects with all covenants, agreements and conditions required by the Agreement and the Registration Rights Agreement to be performed, satisfied or complied with by the Company, respectively, [at or prior to Commencement][on or prior to the date hereof]. A 4. Upon full payment therefore, the Shares issuable in respect of each Fixed Purchase Notice, each VWAP Purchase Notice, and each Additional VWAP Purchase Notice effected pursuant to the Agreement shall be delivered to

the Investor electronically as DWAC Shares, and shall be freely tradable and transferable and without restriction on resale and without any stop transfer instructions maintained against such Shares. In accordance with Section 9.1(iv) of the Agreement, Back End Commitment Shares [have been][will be] delivered to the Investor electronically as DWAC Shares, and such Back End Commitment Shares [are][will be, once issued], freely tradable and transferable and without restriction on resale and without any stop transfer instructions maintained against the Back End Commitment Shares.

5. As of [the Commencement Date][the date hereof], the Company does not possess any material non-public information.

6. As of [the Commencement Date][the date hereof], the Company has authorized for issuance all Common Shares issuable under the Agreement, being such number of Common Shares required for the purpose of effecting Fixed Purchases, VWAP Purchases, [and ]Additional VWAP Purchases under the Agreement[, and Back End Commitment Shares].

7. No stop order suspending the effectiveness of the Registration Statement or the use of the Prospectus under the Securities Act has been issued and no proceedings for such purpose or pursuant to Section 8A of the Securities Act are pending before or, to the Knowledge of the Company, threatened by the Commission.

49 The undersigned has executed this Certificate this [â€¢] day of [â€¢], 2025. By: Name: Title: 50 DISCLOSURE SCHEDULES RELATING TO THE COMMON SHARES PURCHASE AGREEMENT, DATED AS OF [â€¢], 2025 BY AND AMONG APTOSE BIOSCIENCES INC. AND KEYSTONE CAPITAL PARTNERS, LLC [REDACTED] 51 ANNEX 2.1 TO THE COMMON SHARE PURCHASE AGREEMENT FORM OF FIXED PURCHASE NOTICE [REDACTED] 52 ANNEX 2.1B TO THE COMMON SHARE PURCHASE AGREEMENT FORM OF FIXED PURCHASE CONFIRMATION [REDACTED] 53 ANNEX 2.2 TO THE COMMON SHARE PURCHASE AGREEMENT FORM OF VWAP PURCHASE NOTICE [REDACTED] 54 ANNEX 2.2B TO THE COMMON SHARE PURCHASE AGREEMENT FORM OF VWAP PURCHASE CONFIRMATION [REDACTED] 55 ANNEX 2.3 TO THE COMMON SHARE PURCHASE AGREEMENT FORM OF ADDITIONAL VWAP PURCHASE NOTICE [REDACTED] 56 ANNEX 2.3B TO THE COMMON SHARE PURCHASE AGREEMENT FORM OF ADDITIONAL VWAP PURCHASE CONFIRMATION [REDACTED] 57 EX-10.28 4 d910194dex1028.htm EX-10.28 EX-10.28 Exhibit 10.28

REGISTRATION RIGHTS AGREEMENT This REGISTRATION RIGHTS AGREEMENT (this â€œAgreementâ€), dated as of February 7, 2025, is by and between Keystone Capital Partners, LLC, a Delaware limited liability company (the â€œInvestorâ€), and Aptose Biosciences Inc., a corporation organized under the laws of Canada (the â€œCompanyâ€).

RECITALS

A. The Company and the Investor have entered into that certain Common Share Purchase Agreement, dated as of the date hereof (the â€œPurchase Agreementâ€), pursuant to which the Company may issue to the Investor, from time to time, up to the lesser of (a) \$25,000,000 and (b) 19.99% of the Companyâ€™s outstanding common shares as of the date of this Agreement (â€œCommon Sharesâ€), unless (i) shareholder approval is obtained to issue more than such 19.99% or (ii) the Average Price is equal to or exceeds the Minimum Price.

B. Pursuant to the terms of, and in consideration for the Investor entering into, the Purchase Agreement, the Company shall cause to be issued to the Investor the Commitment Shares in accordance with the terms of the Purchase Agreement.

C. Pursuant to the terms of, and in consideration for the Investor entering into, the Purchase Agreement, and to induce the Investor to execute and deliver the Purchase Agreement, the Company has agreed to provide the Investor with certain registration rights with respect to the Registrable Securities (as defined herein) as set forth herein.

AGREEMENT NOW,

THEREFORE, in consideration of the representations, warranties, covenants and agreements contained herein and in the Purchase Agreement, and for other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, intending to be legally bound hereby, the Company and the Investor hereby agree as follows:

1. Definitions.

Capitalized terms used herein and not otherwise defined herein shall have the respective meanings set forth in the Purchase Agreement. As used in this Agreement, the following terms shall have the following meanings:

(a) â€œAgreementâ€ shall have the meaning assigned to such term in the preamble of this Agreement

(b) â€œAllowable Grace Periodâ€ shall have the meaning assigned to such term in Section 3(n).

(c) â€œBlue Sky Filingâ€ shall have the meaning assigned to such term in Section 6(a).

(d) â€œBusiness Dayâ€ means any day other than Saturday, Sunday or any other day on which commercial banks in New York, New York are authorized or required by law to remain closed.

(e) â€œClaimsâ€ shall have the meaning assigned to such term in Section 6(a).

(f) â€œCommissionâ€ means the U.S. Securities and Exchange Commission or any successor entity.

(g) â€œCommon Sharesâ€ shall have the meaning assigned to such term in the recitals to this Agreement.

(h) â€œCompanyâ€ shall have the meaning assigned to such term in the preamble of this Agreement.

(i) â€œEffective Dateâ€ means the date that the applicable Registration Statement has been declared effective by the Commission.

(j) â€œEffectiveness Deadlineâ€ means with respect to any New Registration Statements that may be required to be filed by the Company pursuant to this Agreement, the earlier of (A) the sixtieth (60th) calendar day following the date on which the Company was required to file such additional Registration Statement, if such Registration Statement is subject to review by the Commission, and (B) the third (3rd) Business Day following the date the Company is notified (orally or in writing, whichever is earlier) by the Commission that such New Registration Statement will not be reviewed.

(k) â€œFiling Deadlineâ€ means the thirtieth (30th) Business Day following the date hereof

(l) â€œIndemnified Damagesâ€ shall have the meaning assigned to such term in Section 6(a).

(m) â€œInvestorâ€ shall have the meaning assigned to such term in the preamble of this Agreement.

(n) â€œInvestor Partyâ€ and â€œInvestor Partiesâ€ shall have the meaning assigned to such terms in Section 6(a).

(o) â€œLegal Counselâ€ shall have the meaning assigned to such term in Section 2(b).

(p) â€œNew Registration Statementâ€ shall have the meaning assigned to such term in Section 2(a).

(q) â€œPersonâ€ means any person or entity, whether a natural person, trustee, corporation, partnership, limited partnership, limited liability company, trust, unincorporated organization, business association, firm, joint venture, governmental agency or authority.

(r) â€œProspectusâ€ means the prospectus in the form included in the Registration Statement, as supplemented from time to time by any Prospectus Supplement, including the documents incorporated by reference therein.

(s) â€œProspectus Supplementâ€ means any prospectus supplement to the Prospectus filed with the Commission from time to time pursuant to Rule 424(b) under the Securities Act, including the documents incorporated by reference therein.

(t) â€œPurchase Agreementâ€ shall have the meaning assigned to such term in the recitals to this Agreement.

(u) â€œregister,â€ â€œregistered,â€ and â€œregistrationâ€ refer to a registration effected by preparing and filing one or more Registration Statements in compliance with the Securities Act and pursuant to Rule 415 and the declaration of effectiveness of such Registration Statement(s) by the Commission.

(v) â€œRegistrable Securitiesâ€ means all of (i) the Shares, (ii) the Commitment Shares, as fully earned as of the date hereof and (iii) any securities of the Company issued or issuable with respect to such Shares or Commitment Shares, including, without limitation, (1) as a result of any stock split, stock dividend, recapitalization, exchange or similar event or otherwise and (2) shares of capital stock of the Company into which the Common Shares are converted or exchanged and shares of a successor entity into which the Common Shares are converted or exchanged, in each case until such time as such securities cease

to be Registrable Securities pursuant to Section 2(f). (w) "Registration Period" shall have the meaning assigned to such term in Section 3(a). (x) "Registration Statement" means the New Registration Statement of the Company filed under the Securities Act that registers the Registrable Securities, as such registration statement or registration statements may be amended and supplemented from time to time, including all documents filed as part thereof or incorporated by reference therein. (y) "Rule 144" means Rule 144 promulgated by the Commission under the Securities Act, as such rule may be amended from time to time, or any other similar or successor rule or regulation of the Commission that may at any time permit the Investor to sell securities of the Company to the public without registration. (z) "Rule 415" means Rule 415 promulgated by the Commission under the Securities Act, as such rule may be amended from time to time, or any other similar or successor rule or regulation of the Commission providing for offering securities on a delayed or continuous basis. (aa) "Staff" shall have the meaning assigned to such term in Section 2(e). (bb) "Violations" shall have the meaning assigned to such term in Section 6(a). **A. 2. Registration.** (a) **Mandatory Registration.** The Company shall prepare and, as soon as practicable, but in no event later than the Filing Deadline, file with the Commission a Registration Statement (a "New Registration Statement") covering (i) all of the Commitment Shares and (ii) the maximum number of additional Registrable Securities as shall be permitted to be included thereon in accordance with applicable Commission rules, regulations and interpretations so as to permit the resale of such Registrable Securities by the Investor under Rule 415 under the Securities Act at then prevailing market prices (and not fixed prices). The Prospectus included in the New Registration Statement shall contain the "Selling Shareholder" and "Plan of Distribution" sections in substantially the form attached hereto as Exhibit B. (b) **Legal Counsel.** Subject to Section 5 hereof, the Investor shall have the right to select one legal counsel to review and oversee, solely on its behalf, any registration pursuant to this Section 2 ("Legal Counsel"), which shall be Pryor Cashman LLP, or such other counsel as thereafter designated by the Investor. Except as provided under Section 9.1(i) of the Purchase Agreement, the Company shall have no obligation to reimburse the Investor for any and all legal fees and expenses of the Legal Counsel incurred in connection with the transactions contemplated hereby. (c) **Sufficient Number of Shares Registered.** If at any time all Registrable Securities are not covered by the New Registration Statement filed pursuant to Section 2(a) as a result of Section 2(e) or otherwise, and if the Company desires to sell additional Shares to the Investor under the Agreement, the Company shall then use its best efforts to file with the Commission one or more additional Registration Statements so as to cover all of the Registrable Securities not covered by such New Registration Statement, in each case, as soon as practicable (taking into account any position of the staff of the Commission ("Staff") with respect to the date on which the Staff will permit such additional New Registration Statement(s) to be filed with the Commission and the rules and regulations of the Commission). The Company shall use its commercially reasonable efforts to cause each such New Registration Statement to become effective as soon as practicable following the filing thereof with the Commission, but in no event later than the applicable Effectiveness Deadline for such New Registration Statement. (d) **No Inclusion of Other Securities.** In no event shall the Company include any securities other than Registrable Securities on any Registration Statement pursuant to Section 2(a) or Section 2(c) without consulting the Investor and Legal Counsel prior to filing such Registration Statement with the Commission. (e) **Offering.** If the Staff or the Commission seeks to characterize any offering pursuant to a Registration Statement filed pursuant to this Agreement as constituting an offering of securities that does not permit such Registration Statement to become effective and be used for resales by the Investor on a delayed or continuous basis under Rule 415 at then-prevailing market prices (and not fixed prices), or if after the filing of any Registration Statement pursuant to Section 2(a) or Section 2(c), the Company is otherwise required by the Staff or the Commission to reduce the number of Registrable Securities included in such Registration Statement, then the Company shall reduce the number of Registrable Securities to be included in such Registration Statement (after consultation with the Investor and Legal Counsel as to the specific Registrable Securities to be removed therefrom) until such time as the Staff and the Commission shall so permit such Registration Statement to become effective and be used as aforesaid. Notwithstanding anything in this Agreement to the contrary, if after giving effect to the actions referred to in the immediately preceding sentence, the Staff or the Commission does not permit such Registration Statement to become effective and be used for resales by the Investor on a delayed or continuous basis under Rule 415 at then-prevailing market prices (and not fixed prices), the Company shall not request acceleration of the Effective Date of such Registration Statement, the Company shall promptly (but in no event later than 48 hours) request the withdrawal of such Registration Statement pursuant to Rule 477 under the Securities Act. In the event of any reduction in Registrable Securities pursuant to this paragraph, if the Company desires to sell any Shares to the Investor that are not covered by a Registration Statement or New Registration Statement, the Company shall then use its commercially reasonable efforts to file one or more New Registration Statements with the Commission in accordance with Section 2(c) until such time as all Registrable Securities have been included in Registration Statements that have been declared effective and the Prospectuses contained therein are available for use by the Investor. (f) **Any Registrable Security shall cease to be a Registrable Security** at the earliest of the following: (i) when a Registration Statement covering such Registrable Security becomes or has been declared effective by the Commission and such Registrable Security has been sold or disposed of pursuant to such effective Registration Statement; (ii) when such Registrable Security is held by the Company or one of its subsidiaries; and (iii) the date that is the later of (A) the first (1st) anniversary of the date of termination of the Purchase Agreement in accordance with Article VII of the Purchase Agreement and (B) the first (1st) anniversary of the date of the last sale of any Registrable Securities to the Investor pursuant to the Purchase Agreement. **A. 3. Related Obligations.** The Company shall use its commercially reasonable efforts to effect the registration of the Registrable Securities in accordance with the intended method of disposition thereof, and, pursuant thereto, the Company shall have the following obligations: (a) The Company shall promptly prepare and file with the Commission the New Registration Statement pursuant to Section 2(a) hereof and one or more New Registration Statements pursuant to Section 2(c) hereof with respect to the Registrable Securities, but in no event later than the applicable Filing Deadline therefor, and the Company shall use its commercially reasonable efforts to cause each such New Registration Statement to become effective as soon as practicable after such filing, but in no event later than the applicable Effectiveness Deadline therefor. Subject to Allowable Grace Periods, the Company shall keep each Registration Statement effective (and the Prospectus contained therein available for use) pursuant to Rule 415 for issuances and sales of the Registrable Securities by the Company to the Investor and for resales by the Investor on a continuous basis at then-prevailing market prices (and not fixed prices) at all times until the earlier of (i) the date on which the Investor shall have sold all of the Registrable Securities covered by such Registration Statement and (ii) the date of termination of the Purchase Agreement if as of such termination date the Investor holds no Registrable Securities (or, if applicable, the date on which such securities cease to be Registrable

Securities after the date of termination of the Purchase Agreement) (the "Registration Period"). Notwithstanding anything to the contrary contained in this Agreement (but subject to the provisions of Section 3(o) hereof), the Company shall ensure that, when filed and at all times while effective, each Registration Statement (including, without limitation, all amendments and supplements thereto) and the Prospectus (including, without limitation, all amendments and supplements thereto) used in connection with such Registration Statement shall not contain any untrue statement of a material fact or omit to state a material fact required to be stated therein, or necessary to make the statements therein (in the case of Prospectuses, in the light of the circumstances in which they were made) not misleading. The Company shall submit to the Commission, as soon as reasonably practicable after the date that the Company learns that no review of a particular Registration Statement will be made by the Staff or that the Staff has no further comments on a particular Registration Statement (as the case may be), a request for acceleration of effectiveness of such Registration Statement to a time and date as soon as reasonably practicable in accordance with Rule 461 under the Securities Act. (b) Subject to Section 3(c) of this Agreement, the Company shall use its commercially reasonable efforts to prepare and file with the Commission such amendments (including, without limitation, post-effective amendments) and supplements to each Registration Statement and the Prospectus used in connection with each such Registration Statement, which Prospectus is to be filed pursuant to Rule 424 promulgated under the Securities Act, as may be necessary to keep each such Registration Statement effective (and the Prospectus contained therein current and available for use) at all times during the Registration Period for such Registration Statement, and, during such period, comply with the provisions of the Securities Act with respect to the disposition of all Registrable Securities of the Company required to be covered by such Registration Statement until such time as all of such Registrable Securities shall have been disposed of in accordance with the intended methods of disposition by the Investor. Without limiting the generality of the foregoing, the Company covenants and agrees that (i) at or before 5:30 p.m. (New York City time) on the second (2nd) Trading Day immediately following the Effective Date of any New Registration Statement (or any post-effective amendment thereto), the Company shall file with the Commission in accordance with Rule 424(b) under the Securities Act the Prospectus to be used in connection with sales pursuant to such Registration Statement (or post-effective amendment thereto), and (ii) if the transactions contemplated by any Fixed Purchase are material to the Company (individually or collectively with all other prior Fixed Purchases, VWAP Purchase, or Additional VWAP Purchase, as applicable, the consummation of which have not previously been reported in any Prospectus filed with the Commission under Rule 424(b) under the Securities Act or in any report, statement or other document filed by the Company with the Commission under the Exchange Act), or if otherwise required under the Securities Act (or the interpretations of the Commission thereof), in each case as reasonably determined by the Company and the Investor, then, within the time period prescribed under Rule 424(b) under the Securities Act, the Company shall file with the Commission a Prospectus pursuant to Rule 424(b) under the Securities Act with respect to the applicable Fixed Purchase(s), VWAP Purchase(s) and Additional VWAP Purchase(s), as applicable, disclosing the total number of Shares that are to be (and, if applicable, have been) issued and sold to the Investor pursuant to such purchase(s), the total purchase price for the Shares subject to such purchase(s), the applicable purchases price(s) for such Shares and the net proceeds that are to be (and, if applicable, have been) received by the Company from the sale of such Shares. To the extent not previously disclosed in the Prospectus, the Company shall disclose in its Quarterly Reports on Form 10-Q and in its Annual Reports on Form 10-K the information described in the immediately preceding sentence relating to all purchase(s) consummated during the relevant fiscal quarter and shall file such Quarterly Reports and Annual Reports with the Commission within the applicable time period prescribed for such report under the Exchange Act. In the case of amendments and supplements to any Registration Statement on Form S-1 or Prospectus related thereto which are required to be filed pursuant to this Agreement (including, without limitation, pursuant to this Section 3(b)) by reason of the Company filing a report on Form 8-K, Form 10-Q or Form 10-K or any analogous report under the Exchange Act, the Company shall file such amendments or supplements to the Registration Statement or Prospectus with the Commission on the same day on which the Exchange Act report is filed which created the requirement for the Company to amend or supplement such Registration Statement or Prospectus, for the purpose of including such report into such Registration Statement and Prospectus. The Company consents to the use of the Prospectus (including, without limitation, any supplement thereto) included in each Registration Statement in accordance with the provisions of the Securities Act and with the securities or "Blue Sky" laws of the jurisdictions in which the Registrable Securities may be sold by the Investor, in connection with the resale of the Registrable Securities and for such period of time thereafter as such Prospectus (including, without limitation, any supplement thereto) (or in lieu thereof, the notice referred to in Rule 173(a) under the Securities Act) is required by the Securities Act to be delivered in connection with resales of Registrable Securities. (c) The Company shall (A) permit Legal Counsel an opportunity to review and comment upon (i) each Registration Statement at least two (2) Business Days prior to its filing with the Commission and (ii) all amendments and supplements to each Registration Statement (including, without limitation, the Prospectus contained therein) (except for Annual Reports on Form 10-K, Quarterly Reports on Form 10-Q, Current Reports on Form 8-K, and any similar or successor reports the contents of which is limited to that set forth in such reports) within a reasonable number of days prior to their filing with the Commission, and (B) shall reasonably consider any comments of the Investor and Legal Counsel on any such Registration Statement or amendment or supplement thereto or to any Prospectus contained therein. The Company shall promptly furnish to Legal Counsel, without charge, (i) electronic copies of any correspondence from the Commission or the Staff to the Company or its representatives relating to each Registration Statement (which correspondence shall be redacted to exclude any material, non-public information regarding the Company or any of its Subsidiaries), (ii) after the same is prepared and filed with the Commission, one (1) electronic copy of each Registration Statement and any amendment(s) and supplement(s) thereto, including, without limitation, financial statements and schedules, all documents incorporated therein by reference, if requested by the Investor, and all exhibits and (iii) upon the effectiveness of each Registration Statement, one (1) electronic copy of the Prospectus included in such Registration Statement and all amendments and supplements thereto; provided, however, the Company shall not be required to furnish any document (other than the Prospectus, which may be provided in .PDF format) to Legal Counsel to the extent such document is available on EDGAR. (d) Without limiting any obligation of the Company under the Purchase Agreement, the Company shall promptly furnish to the Investor, without charge, (i) after the same is prepared and filed with the Commission, at least one (1) electronic copy of each Registration Statement and any amendment(s) and supplement(s) thereto, including, without limitation, financial statements and schedules, all documents incorporated therein by reference, if requested by the Investor, all exhibits thereto, (ii) upon the effectiveness of each Registration Statement, one (1) electronic copy of the Prospectus included in such Registration Statement and all amendments and supplements thereto (or such other number of copies as the

Investor may reasonably request from time to time) and (iii) such other documents, including, without limitation, copies of any final Prospectus, as the Investor may reasonably request from time to time in order to facilitate the disposition of the Registrable Securities owned by the Investor; provided, however, the Company shall not be required to furnish any document (other than the Prospectus, which may be provided in .PDF format) to the Investor to the extent such document is available on EDGAR. (e) The Company shall take such action as is reasonably necessary to (i) register and qualify, unless an exemption from registration and qualification applies, the resale by the Investor of the Registrable Securities covered by a Registration Statement under such other securities or "Blue Sky" laws of all applicable jurisdictions in the United States, (ii) prepare and file in those jurisdictions, such amendments (including, without limitation, post-effective amendments) and supplements to such registrations and qualifications as may be necessary to maintain the effectiveness thereof during the Registration Period, (iii) take such other actions as may be reasonably necessary to maintain such registrations and qualifications in effect at all times during the Registration Period, and (iv) take all other actions reasonably necessary or advisable to qualify the Registrable Securities for sale in such jurisdictions; provided, however, the Company shall not be required in connection therewith or as a condition thereto to (x) qualify to do business in any jurisdiction where it would not otherwise be required to qualify but for this Section 3(e), (y) subject itself to general taxation in any such jurisdiction, or (z) file a general consent to service of process in any such jurisdiction. The Company shall promptly notify Legal Counsel and the Investor of the receipt by the Company of any notification with respect to the suspension of the registration or qualification of any of the Registrable Securities for sale under the securities or "Blue Sky" laws of any jurisdiction in the United States or its receipt of actual notice of the initiation or threatening of any proceeding for such purpose. (f) The Company shall notify Legal Counsel and the Investor in writing of the happening of any event, as promptly as reasonably practicable after becoming aware of such event, as a result of which the Prospectus included in a Registration Statement, as then in effect, includes an untrue statement of a material fact or omission to state a material fact required to be stated therein or necessary to make the statements therein, in the light of the circumstances under which they were made, not misleading (provided that in no event shall such notice contain any material, non-public information regarding the Company or any of its Subsidiaries), and, subject to Section 3(c), promptly prepare a supplement or amendment to such Registration Statement and such Prospectus contained therein to correct such untrue statement or omission and deliver one (1) electronic copy of such supplement or amendment to Legal Counsel and the Investor (or such other number of copies as Legal Counsel or the Investor may reasonably request). The Company shall also promptly notify Legal Counsel and the Investor in writing (i) when a Prospectus or supplement thereto or post-effective amendment has been filed, when a Registration Statement or any post-effective amendment has become effective (notification of such effectiveness shall be delivered to Legal Counsel and the Investor by facsimile or e-mail on the same day of such effectiveness and by overnight mail), and when the Company receives written notice from the Commission that a Registration Statement or any post-effective amendment will be reviewed by the Commission, (ii) of any request by the Commission for amendments or supplements to a Registration Statement or related Prospectus or related information, (iii) of the Company's reasonable determination that a post-effective amendment to a Registration Statement would be appropriate and (iv) of the receipt of any request by the Commission or any other federal or state governmental authority for any additional information relating to the Registration Statement or any amendment or supplement thereto or any related Prospectus. The Company shall respond as promptly as reasonably practicable to any comments received from the Commission with respect to a Registration Statement or any amendment thereto. Nothing in this Section 3(f) shall limit any obligation of the Company under the Purchase Agreement. (g) The Company shall (i) use its commercially reasonable efforts to prevent the issuance of any stop order or other suspension of effectiveness of a Registration Statement or the use of any Prospectus contained therein, or the suspension of the qualification, or the loss of an exemption from qualification, of any of the Registrable Securities for sale in any jurisdiction and, if such an order or suspension is issued, to obtain the withdrawal of such order or suspension at the earliest possible time and (ii) notify Legal Counsel and the Investor of the issuance of such order and the resolution thereof or its receipt of actual notice of the initiation or threat of any proceeding. (h) The Company shall hold in confidence and not make any disclosure of information concerning the Investor provided to the Company unless (i) disclosure of such information is necessary to comply with federal or state securities laws, (ii) the disclosure of such information is necessary to avoid or correct a misstatement or omission in any Registration Statement or is otherwise required to be disclosed in such Registration Statement pursuant to the Securities Act, (iii) the release of such information is ordered pursuant to a subpoena or other final, non-appealable order from a court or governmental body of competent jurisdiction, or (iv) such information has been made generally available to the public other than by disclosure in violation of this Agreement or any other Transaction Document. The Company agrees that it shall, upon learning that disclosure of such information concerning the Investor is sought in or by a court or governmental body of competent jurisdiction or through other means, give prompt written notice to the Investor and allow the Investor, at the Investor's expense, to undertake appropriate action to prevent disclosure of, or to obtain a protective order for, such information. (i) The Company shall cooperate with the Investor and, to the extent applicable, facilitate the timely preparation and delivery of Registrable Securities, as DWAC Shares, to be offered pursuant to a Registration Statement and enable such DWAC Shares to be in such denominations as the Investor may reasonably request from time to time and registered in such names as the Investor may request. Investor hereby agrees that it shall cooperate with the Company, its counsel and Transfer Agent in connection with any issuances of DWAC Shares, and hereby represents, warrants and covenants to the Company that that it will resell such DWAC Shares only pursuant to the Registration Statement in which such DWAC Shares are included, in a manner described under the caption "Plan of Distribution" in such Registration Statement, and in a manner in compliance with all applicable U.S. federal and state securities laws, rules and regulations, including, without limitation, any applicable prospectus delivery requirements of the Securities Act. DWAC Shares shall be free from all restrictive legends may be transmitted by the transfer agent to the Investor by crediting an account at DTC as directed in writing by the Investor. (j) Upon the written request of the Investor, the Company shall as soon as reasonably practicable after receipt of notice from the Investor and subject to Section 3(n) hereof, (i) incorporate in a post-effective amendment such information as the Investor reasonably requests to be included therein relating to the sale and distribution of Registrable Securities, including, without limitation, information with respect to the number of Registrable Securities being offered or sold, the purchase price being paid therefor and any other terms of the offering of the Registrable Securities to be sold in such offering; (ii) make all required filings of such post-effective amendment after being notified of the matters to be incorporated in such post-effective amendment; and (iii) supplement or make amendments to any Registration Statement or Prospectus contained therein if reasonably requested by the Investor. (k) The Company shall use its commercially

reasonable efforts to cause the Registrable Securities covered by a Registration Statement to be registered with or approved by such other governmental agencies or authorities as may be necessary to consummate the disposition of such Registrable Securities. (l) The Company shall otherwise use its commercially reasonable efforts to comply with all applicable rules and regulations of the Commission in connection with any registration hereunder. (m) Within one (1)Â Business Day after each Registration Statement which covers Registrable Securities is declared effective by the Commission, the Company shall deliver, and shall cause legal counsel for the Company to deliver, to the transfer agent for such Registrable Securities (with copies to the Investor) confirmation that such Registration Statement has been declared effective by the Commission in a form to be provided by counsel to the Company and reasonably acceptable to the Investor. (n) Notwithstanding anything to the contrary contained herein (but subject to the last sentence of this SectionÂ 3(n)), at any time after the Effective Date of a particular Registration Statement, the Company may, upon written notice to Investor, suspend Investorâ€™s use of any prospectus that is a part of any Registration Statement (in which event the Investor shall discontinue sales of the Registrable Securities pursuant to such Registration Statement contemplated by this Agreement, but shall settle any previously made sales of Registrable Securities) if the Company (x)Â is pursuing an acquisition, merger, tender offer, reorganization, disposition or other similar material transaction and the Company determines in good faith that (A)Â the Companyâ€™s ability to pursue or consummate such a material transaction would be materially adversely affected by any required disclosure of such transaction in such Registration Statement or other registration statement or (B)Â such material transaction renders the Company unable to comply with Commission requirements, in each case under circumstances that would make it impractical or inadvisable to cause any Registration Statement (or such filings) to be used by Investor or to promptly amend or supplement any Registration Statement contemplated by this Agreement on a post effective basis, as applicable, or (y)Â has experienced some other material non-public event the disclosure of which at such time, in the good faith judgment of the Company, would materially adversely affect the Company (each, an â€œAllowable Grace Periodâ€); provided, however, that in no event shall the Investor be suspended from selling Registrable Securities pursuant to any Registration Statement for a period that exceeds 20 consecutive Trading Days or an aggregate of 60 days in any 365-day period; and provided, further, the Company shall not effect any such suspension during (A)Â the first 10 consecutive Trading Days after the Effective Date of the particular Registration Statement or (B)Â the five-Trading Day period following each settlement date for a Fixed Purchase, VWAP Purchase, or Additional VWAP Purchase, as applicable. Upon disclosure of such information or the termination of the condition described above, the Company shall provide prompt notice, but in any event within one Business Day of such disclosure or termination, to the Investor and shall promptly terminate any suspension of sales it has put into effect and shall take such other reasonable actions to permit registered sales of Registrable Securities as contemplated in this Agreement (including as set forth in the first sentence of SectionÂ 3(f) with respect to the information giving rise thereto unless such material, non-public information is no longer applicable). Notwithstanding anything to the contrary contained in this SectionÂ 3(n), the Company shall cause its transfer agent to deliver DWAC Shares to a transferee of the Investor in accordance with the terms of the Purchase Agreement in connection with any sale of Registrable Securities with respect to which (i)Â the Company has made a sale to Investor and (ii)Â the Investor has entered into a contract for sale, and delivered a copy of the Prospectus included as part of the particular Registration Statement to the extent applicable, in each case prior to the Investorâ€™s receipt of the notice of an Allowable Grace Period and for which the Investor has not yet settled. Â 4. Obligations of the Investor. (a) At least two (2)Â Business Days prior to the first anticipated filing date of each Registration Statement (or such shorter period to which the parties agree), the Company shall notify the Investor in writing of the information the Company requires from the Investor with respect to such Registration Statement. It shall be a condition precedent to the obligations of the Company to complete the registration pursuant to this Agreement with respect to the Registrable Securities of the Investor that the Investor shall furnish to the Company such information regarding itself, the Registrable Securities held by it and the intended method of disposition of the Registrable Securities held by it, as shall be reasonably required to effect and maintain the effectiveness of the registration of such Registrable Securities and shall execute such documents in connection with such registration as the Company may reasonably request. (b) The Investor, by its acceptance of the Registrable Securities, agrees to cooperate with the Company as reasonably requested by the Company in connection with the preparation and filing of each Registration Statement hereunder, unless the Investor has notified the Company in writing of the Investorâ€™s election to exclude all of the Investorâ€™s Registrable Securities from such Registration Statement. (c) The Investor agrees that, upon receipt of any notice from the Company of the happening of any event of the kind described in SectionÂ 3(l) or the first sentence of 3(f), the Investor shall immediately discontinue disposition of Registrable Securities pursuant to any Registration Statement(s) covering such Registrable Securities until the Investorâ€™s receipt of the copies of the supplemented or amended Prospectus contemplated by SectionÂ 3(l) or the first sentence of SectionÂ 3(f) or receipt of notice that no supplement or amendment is required. Notwithstanding anything to the contrary in this SectionÂ 4(c), the Company shall cause its transfer agent to deliver DWAC Shares to a transferee of the Investor in accordance with the terms of the Purchase Agreement in connection with any sale of Registrable Securities with respect to which the Investor has entered into a contract for sale prior to the Investorâ€™s receipt of a notice from the Company of the happening of any event of the kind described in SectionÂ 3(l) or the first sentence of SectionÂ 3(f) and for which the Investor has not yet settled. (d) The Investor covenants and agrees that it shall comply with the prospectus delivery and other requirements of the Securities Act as applicable to it in connection with sales of Registrable Securities pursuant to a Registration Statement. 5. Expenses of Registration. All reasonable expenses of the Company, other than sales or brokerage commissions and fees and disbursements of counsel for, and other expenses of, the Investor, incurred in connection with registrations, filings or qualifications pursuant to Sections 2 and 3, including, without limitation, all registration, listing and qualifications fees, printers and accounting fees, and fees and disbursements of counsel for the Company, shall be paid by the Company. Â 6. Indemnification. (a) In the event any Registrable Securities are included in any Registration Statement under this Agreement, to the fullest extent permitted by law, the Company will, and hereby does, indemnify, hold harmless and defend the Investor, each of its directors, officers, shareholders, members, partners, employees, agents, advisors, representatives (and any other Persons with a functionally equivalent role of a Person holding such titles notwithstanding the lack of such title or any other title) and each Person, if any, who controls the Investor within the meaning of the Securities Act or the Exchange Act and each of the directors, officers, shareholders, members, partners, employees, agents, advisors, representatives (and any other Persons with a functionally equivalent role of a Person holding such titles notwithstanding the lack of such title or any other title) of such controlling Persons (each, an â€œInvestor Partyâ€ and collectively, the â€œInvestor Partiesâ€), against any losses, obligations, claims, damages, liabilities, contingencies, judgments, fines, penalties, charges, costs (including, without limitation, court costs,

reasonable attorneys' fees, costs of defense and investigation), amounts paid in settlement or expenses, joint or several, (collectively, "Claims") reasonably incurred in investigating, preparing or defending any action, claim, suit, inquiry, proceeding, investigation or appeal taken from the foregoing by or before any court or governmental, administrative or other regulatory agency, body or the Commission, whether pending or threatened, whether or not an Investor Party is or may be a party thereto ("Indemnified Damages"), to which any of them may become subject insofar as such Claims (or actions or proceedings, whether commenced or threatened, in respect thereof) arise out of or are based upon: (i) any untrue statement or alleged untrue statement of a material fact in a Registration Statement or any post-effective amendment thereto or in any filing made in connection with the qualification of the offering under the securities or other "Blue Sky" laws of any jurisdiction in which Registrable Securities are offered ("Blue Sky Filing"), or the omission or alleged omission to state a material fact required to be stated therein or necessary to make the statements therein not misleading or (ii) any untrue statement or alleged untrue statement of a material fact contained in any Prospectus (as amended or supplemented) or in any Prospectus Supplement or the omission or alleged omission to state therein any material fact necessary to make the statements made therein, in light of the circumstances under which the statements therein were made, not misleading (the matters in the foregoing clauses (i) and (ii) being, collectively, "Violations"). Subject to Section 6(c), the Company shall reimburse the Investor Parties, promptly as such expenses are incurred and are due and payable, for any legal fees or other reasonable expenses incurred by them in connection with investigating or defending any such Claim. Notwithstanding anything to the contrary contained herein, the indemnification agreement contained in this Section 6(a): (i) shall not apply to a Claim by an Investor Party arising out of or based upon a Violation which occurs in reliance upon and in conformity with information furnished in writing to the Company by such Investor Party for such Investor Party expressly for use in connection with the preparation of such Registration Statement, Prospectus or Prospectus Supplement or any such amendment thereof or supplement thereto (it being hereby acknowledged and agreed that the written information set forth on Exhibit C attached hereto is the only written information furnished to the Company by or on behalf of the Investor expressly for use in any Registration Statement, Prospectus or Prospectus Supplement); (ii) shall not be available to the Investor to the extent such Claim is based on a failure of the Investor to deliver or to cause to be delivered the Prospectus (as amended or supplemented) made available by the Company (to the extent applicable), including, without limitation, a corrected Prospectus, if such Prospectus (as amended or supplemented) or corrected Prospectus was timely made available by the Company pursuant to Section 3(d) and then only if, and to the extent that, following the receipt of the corrected Prospectus no grounds for such Claim would have existed; and (iii) shall not apply to amounts paid in settlement of any Claim if such settlement is effected without the prior written consent of the Company, which consent shall not be unreasonably withheld or delayed. Such indemnity shall remain in full force and effect regardless of any investigation made by or on behalf of the Investor Party and shall survive the transfer of any of the Registrable Securities by the Investor pursuant to Section 9. (b) In connection with any Registration Statement in which the Investor is participating, the Investor agrees to severally and not jointly indemnify, hold harmless and defend, to the same extent and in the same manner as is set forth in Section 6(a), the Company, each of its directors, each of its officers who signs the Registration Statement and each Person, if any, who controls the Company within the meaning of the Securities Act or the Exchange Act (each, an "Company Party"), against any Claim or Indemnified Damages to which any of them may become subject, under the Securities Act, the Exchange Act or otherwise, insofar as such Claim or Indemnified Damages arise out of or are based upon any Violation, in each case, to the extent, and only to the extent, that such Violation occurs in reliance upon and in conformity with written information relating to the Investor furnished to the Company by the Investor expressly for use in connection with such Registration Statement, the Prospectus included therein or any Prospectus Supplement thereto (it being hereby acknowledged and agreed that the written information set forth on Exhibit C attached hereto is the only written information furnished to the Company by or on behalf of the Investor expressly for use in any Registration Statement, Prospectus or Prospectus Supplement); and, subject to Section 6(c) and the below provisos in this Section 6(b), the Investor shall reimburse a Company Party any legal or other expenses reasonably incurred by such Company Party in connection with investigating or defending any such Claim; provided, however, the indemnity agreement contained in this Section 6(b) and the agreement with respect to contribution contained in Section 7 shall not apply to amounts paid in settlement of any Claim if such settlement is effected without the prior written consent of the Investor, which consent shall not be unreasonably withheld or delayed; and provided, further that the Investor shall be liable under this Section 6(b) for only that amount of a Claim or Indemnified Damages as does not exceed the net proceeds to the Investor as a result of the applicable sale of Registrable Securities pursuant to such Registration Statement, Prospectus or Prospectus Supplement. Such indemnity shall remain in full force and effect regardless of any investigation made by or on behalf of such Company Party and shall survive the transfer of any of the Registrable Securities by the Investor pursuant to Section 9. (c) Promptly after receipt by an Investor Party or Company Party (as the case may be) under this Section 6 of notice of the commencement of any action or proceeding (including, without limitation, any governmental action or proceeding) involving a Claim, such Investor Party or Company Party (as the case may be) shall, if a Claim in respect thereof is to be made against any indemnifying party under this Section 6, deliver to the indemnifying party a written notice of the commencement thereof, and the indemnifying party shall have the right to participate in, and, to the extent the indemnifying party so desires, jointly with any other indemnifying party similarly noticed, to assume control of the defense thereof with counsel mutually satisfactory to the indemnifying party and the Investor Party or the Company Party (as the case may be); provided, however, an Investor Party or Company Party (as the case may be) shall have the right to retain its own counsel with the fees and expenses of such counsel to be paid by the indemnifying party if: (i) the indemnifying party has agreed in writing to pay such fees and expenses; (ii) the indemnifying party shall have failed promptly to assume the defense of such Claim and to employ counsel reasonably satisfactory to such Investor Party or Company Party (as the case may be) in any such Claim; or (iii) the named parties to any such Claim (including, without limitation, any impleaded parties) include both such Investor Party or Company Party (as the case may be) and the indemnifying party, and such Investor Party or such Company Party (as the case may be) shall have been advised by counsel that a conflict of interest is likely to exist if the same counsel were to represent such Investor Party or such Company Party and the indemnifying party (in which case, if such Investor Party or such Company Party (as the case may be) notifies the indemnifying party in writing that it elects to employ separate counsel at the expense of the indemnifying party, then the indemnifying party shall not have the right to assume the defense thereof on behalf of the indemnified party and such counsel shall be at the expense of the indemnifying party, provided further that in the case of clause (iii) above the indemnifying party shall not be responsible for the reasonable fees and expenses of more than one (1) separate legal counsel for all Investor Parties or Company Parties (as the case may be).

The Company Party or Investor Party (as the case may be) shall reasonably cooperate with the indemnifying party in connection with any negotiation or defense of any such action or Claim by the indemnifying party and shall furnish to the indemnifying party all information reasonably available to the Company Party or Investor Party (as the case may be) which relates to such action or Claim. The indemnifying party shall keep the Company Party or Investor Party (as the case may be) reasonably apprised at all times as to the status of the defense or any settlement negotiations with respect thereto. No indemnifying party shall be liable for any settlement of any action, claim or proceeding effected without its prior written consent; provided, however, the indemnifying party shall not unreasonably withhold, delay or condition its consent. No indemnifying party shall, without the prior written consent of the Company Party or Investor Party (as the case may be), consent to entry of any judgment or enter into any settlement or other compromise which does not include as an unconditional term thereof the giving by the claimant or plaintiff to such Company Party or Investor Party (as the case may be) of a release from all liability in respect to such Claim or litigation, and such settlement shall not include any admission as to fault on the part of the Company Party. For the avoidance of doubt, the immediately preceding sentence shall apply to Sections 6(a) and 6(b) hereof. Following indemnification as provided for hereunder, the indemnifying party shall be subrogated to all rights of the Company Party or Investor Party (as the case may be) with respect to all third parties, firms or corporations relating to the matter for which indemnification has been made. The failure to deliver written notice to the indemnifying party within a reasonable time of the commencement of any such action shall not relieve such indemnifying party of any liability to the Investor Party or Company Party (as the case may be) under this Section 6, except to the extent that the indemnifying party is materially and adversely prejudiced in its ability to defend such action. (d) No Person involved in the sale of Registrable Securities who is guilty of fraudulent misrepresentation (within the meaning of Section 11(f) of the Securities Act) in connection with such sale shall be entitled to indemnification from any Person involved in such sale of Registrable Securities who is not guilty of fraudulent misrepresentation. (e) The indemnification required by this Section 6 shall be made by periodic payments of the amount thereof during the course of the investigation or defense, as and when bills are received or Indemnified Damages are incurred; provided that any Person receiving any payment pursuant to this Section 6 shall promptly reimburse the Person making such payment for the amount of such payment to the extent a court of competent jurisdiction determines that such Person receiving such payment was not entitled to such payment. (f) The indemnity and contribution agreements contained herein shall be in addition to (i) any cause of action or similar right of the Company Party or Investor Party against the indemnifying party or others, and (ii) any liabilities the indemnifying party may be subject to pursuant to the law.

7. Contribution. To the extent any indemnification by an indemnifying party is prohibited or limited by law, the indemnifying party agrees to make the maximum contribution with respect to any amounts for which it would otherwise be liable under Section 6 to the fullest extent permitted by law; provided, however: (i) no contribution shall be made under circumstances where the maker would not have been liable for indemnification under the fault standards set forth in Section 6 of this Agreement, (ii) no Person involved in the sale of Registrable Securities which Person is guilty of fraudulent misrepresentation (within the meaning of Section 11(f) of the Securities Act) in connection with such sale shall be entitled to contribution from any Person involved in such sale of Registrable Securities who was not guilty of fraudulent misrepresentation; and (iii) contribution by any seller of Registrable Securities shall be limited in amount to the amount of net proceeds received by such seller from the applicable sale of such Registrable Securities pursuant to such Registration Statement. Notwithstanding the provisions of this Section 7, the Investor shall not be required to contribute, in the aggregate, any amount in excess of the amount by which the net proceeds actually received by the Investor from the applicable sale of the Registrable Securities subject to the Claim exceeds the amount of any damages that the Investor has otherwise been required to pay, or would otherwise be required to pay under Section 6(b), by reason of such untrue or alleged untrue statement or omission or alleged omission.

8. Reports Under the Exchange Act. With a view to making available to the Investor the benefits of Rule 144, the Company agrees to: (a) so long as the Investor owns Registrable Securities, use its reasonable best efforts to make and keep public information available, as those terms are understood and defined in Rule 144; (b) so long as the Investor owns Registrable Securities, use its reasonable best efforts to file with the Commission in a timely manner all reports and other documents required of the Company under the Securities Act and the Exchange Act so long as the Company remains subject to such requirements (it being understood that nothing herein shall limit any of the Company's obligations under the Purchase Agreement) and the filing of such reports and other documents is required for the applicable provisions of Rule 144; (c) furnish to the Investor so long as the Investor owns Registrable Securities, promptly upon request, (i) a written statement by the Company, if true, that it has complied with the reporting, submission and posting requirements of Rule 144 and the Exchange Act, if applicable (ii) a copy of the most recent annual or quarterly report of the Company and such other reports and documents so filed by the Company with the Commission if such reports are not publicly available via EDGAR, and (iii) such other information as may be reasonably requested to permit the Investor to sell such securities pursuant to Rule 144 without registration; and (d) take such additional action as is reasonably requested by the Investor to enable the Investor to sell the Registrable Securities pursuant to Rule 144, including, without limitation, delivering all such legal opinions, consents, certificates, resolutions and instructions to the Company's Transfer Agent as may be reasonably requested from time to time by the Investor and otherwise fully cooperate with Investor and Investor's broker to effect such sale of securities pursuant to Rule 144.

9. Assignment of Registration Rights. The Company shall not assign this Agreement or any rights or obligations hereunder without the prior written consent of the Investor; provided, however, that any transaction, whether by merger, reorganization, restructuring, consolidation, financing or otherwise, whereby the Company remains the surviving entity immediately after such transaction shall not be deemed an assignment. The Investor may not assign its rights under this Agreement without the prior written consent of the Company, other than to an affiliate of the Investor controlled by Fredric Zaino, in which case the assignee must agree in writing to be bound by the terms and conditions of this Agreement.

10. Amendment or Waiver. No provision of this Agreement may be amended or waived by the parties from and after the date that is one (1) Trading Day immediately preceding the filing of the New Registration Statement with the Commission. Subject to the immediately preceding sentence, no provision of this Agreement may be (i) amended other than by a written instrument signed by both parties hereto or (ii) waived other than in a written instrument signed by the party against whom enforcement of such waiver is sought. Failure of any party to exercise any right or remedy under this Agreement or otherwise, or delay by a party in exercising such right or remedy, shall not operate as a waiver thereof.

11. Miscellaneous. (a) Solely for purposes of this Agreement, a Person is deemed to be a holder of Registrable Securities whenever such Person owns or is deemed to own of record such Registrable Securities. If the Company receives conflicting instructions, notices or elections from two or more Persons with respect to the same Registrable Securities, the Company shall act upon the

basis of instructions, notice or election received from such record owner of such Registrable Securities. (b) Any notices, consents, waivers or other communications required or permitted to be given under the terms of this Agreement shall be given in accordance with Section 9.4 of the Purchase Agreement. (c) Failure of any party to exercise any right or remedy under this Agreement or otherwise, or delay by a party in exercising such right or remedy, shall not operate as a waiver thereof. The Company and the Investor acknowledge and agree that irreparable damage would occur in the event that any of the provisions of this Agreement were not performed in accordance with their specific terms or were otherwise breached. It is accordingly agreed that either party shall be entitled to an injunction or injunctions to prevent or cure breaches of the provisions of this Agreement by the other party and to enforce specifically the terms and provisions hereof (without the necessity of showing economic loss and without any bond or other security being required), this being in addition to any other remedy to which either party may be entitled by law or equity. (d) All questions concerning the construction, validity, enforcement and interpretation of this Agreement shall be governed by the internal laws of the State of New York, without giving effect to any choice of law or conflict of law provision or rule (whether of the State of New York or any other jurisdictions) that would cause the application of the laws of any jurisdictions other than the State of New York. Each party hereby irrevocably submits to the exclusive jurisdiction of the federal courts sitting in The City of New York, Borough of Manhattan, for the adjudication of any dispute hereunder or in connection herewith or with any transaction contemplated hereby or discussed herein, and hereby irrevocably waives, and agrees not to assert in any suit, action or proceeding, any claim that it is not personally subject to the jurisdiction of any such court, that such suit, action or proceeding is brought in an inconvenient forum or that the venue of such suit, action or proceeding is improper. Each party hereby irrevocably waives personal service of process and consents to process being served in any such suit, action or proceeding by mailing a copy thereof to such party at the address for such notices to it under this Agreement and agrees that such service shall constitute good and sufficient service of process and notice thereof. Nothing contained herein shall be deemed to limit in any way any right to serve process in any manner permitted by law. If any provision of this Agreement shall be invalid or unenforceable in any jurisdiction, such invalidity or unenforceability shall not affect the validity or enforceability of the remainder of this Agreement in that jurisdiction or the validity or enforceability of any provision of this Agreement in any other jurisdiction. EACH PARTY HEREBY IRREVOCABLY WAIVES ANY RIGHT IT MAY HAVE TO, AND AGREES NOT TO REQUEST, A JURY TRIAL FOR THE ADJUDICATION OF ANY DISPUTE HEREUNDER OR IN CONNECTION HEREWITH OR ARISING OUT OF THIS AGREEMENT OR ANY TRANSACTION CONTEMPLATED HEREBY. (e) The Transaction Documents set forth the entire agreement and understanding of the parties solely with respect to the subject matter thereof and supersedes all prior and contemporaneous agreements, negotiations and understandings between the parties, both oral and written, solely with respect to such matters. There are no promises, undertakings, representations or warranties by either party relative to subject matter hereof not expressly set forth in the Transaction Documents. Notwithstanding anything in this Agreement to the contrary and without implication that the contrary would otherwise be true, nothing contained in this Agreement shall limit, modify or affect in any manner whatsoever (i) the conditions precedent to a Fixed Purchase, a VWAP Purchase or an Additional VWAP Purchase contained in the Purchase Agreement or (ii) any of the Company's obligations under the Purchase Agreement. (f) This Agreement shall inure to the benefit of and be binding upon the parties hereto and their respective successors. This Agreement is not for the benefit of, nor may any provision hereof be enforced by, any Person, other than the parties hereto, their respective successors and the Persons referred to in Sections 6 and 7 hereof. (g) The headings in this Agreement are for convenience of reference only and shall not limit or otherwise affect the meaning hereof. Unless the context clearly indicates otherwise, each pronoun herein shall be deemed to include the masculine, feminine, neuter, singular and plural forms thereof. The terms "including," "includes," "include" and words of like import shall be construed broadly as if followed by the words "without limitation." The terms "herein," "hereunder," "hereof" and words of like import refer to this entire Agreement instead of just the provision in which they are found. (h) This Agreement may be executed in two or more identical counterparts, all of which shall be considered one and the same agreement and shall become effective when counterparts have been signed by each party and delivered to the other party; provided that a facsimile signature or signature delivered by e-mail in a PDF format data file, including any electronic signature complying with the U.S. federal ESIGN Act of 2000, e.g., [www.docusign.com](http://www.docusign.com), [www.echosign.adobe.com](http://www.echosign.adobe.com), etc., shall be considered due execution and shall be binding upon the signatory thereto with the same force and effect as if the signature were an original signature. (i) Each party shall do and perform, or cause to be done and performed, all such further acts and things, and shall execute and deliver all such other agreements, certificates, instruments and documents as any other party may reasonably request in order to carry out the intent and accomplish the purposes of this Agreement and the consummation of the transactions contemplated hereby. (j) The language used in this Agreement will be deemed to be the language chosen by the parties to express their mutual intent and no rules of strict construction will be applied against any party. [Signature Pages Follow] IN WITNESS WHEREOF, Investor and the Company have caused their respective signature page to this Registration Rights Agreement to be duly executed as of the date first written above. **COMPANY: APTOSE BIOSCIENCES INC.** By: **/s/** William G. Rice **Name:** William G. Rice, Ph.D. **Title:** Chairman, President, and Chief Executive Officer **IN WITNESS WHEREOF,** Investor and the Company have caused their respective signature page to this Registration Rights Agreement to be duly executed as of the date first written above. **INVESTOR: KEYSTONE CAPITAL PARTNERS, LLC** By: **/s/** Fred Zaino **Name:** Fred Zaino **Title:** Chief Investment Officer **EXHIBIT A FORM OF NOTICE OF EFFECTIVENESS OF REGISTRATION STATEMENT** [REDACTED] Re: Aptose Biosciences Inc. Ladies and Gentlemen: We are counsel to Aptose Biosciences Inc., a corporation organized under the laws of Canada (the "Company"), and have represented the Company in connection with that certain Common Share Purchase Agreement, dated [REDACTED], 2025 (the "Purchase Agreement"), entered into by and among the Company and the Investor named therein (the "Holder") pursuant to which the Company will issue to the Holder from time to time the Company's common shares (the "Common Shares"). Pursuant to the Purchase Agreement, the Company also has entered into a Registration Rights Agreement, dated [REDACTED], 2025, with the Holder (the "Registration Rights Agreement"), pursuant to which the Company agreed, among other things, to register the offer and sale by the Holder of the Registrable Securities (as defined in the Registration Rights Agreement) under the Securities Act of 1933, as amended (the "Securities Act"). In connection with the Company's obligations under the Registration Rights Agreement, on [REDACTED], 2025, the Company filed a Registration Statement on Form S-1 (File No. 333-[REDACTED]) (the "Registration Statement") with the Securities and Exchange Commission (the "Commission") relating to the Registrable Securities which names the Holder as an underwriter and a selling shareholder thereunder. In connection with the foregoing, based solely on our review of the Commission's EDGAR website, we advise you that the Registration Statement became effective under the Securities Act on [REDACTED].

Act on [â€¢], 2025. In addition, based solely on our review of the information made available by the Commission at <http://www.sec.gov/litigation/stoporders.shtml>, we confirm that the Commission has not issued any stop order suspending the effectiveness of the Registration Statement. To our knowledge, based solely on our participation in the conferences mentioned above regarding the Registration Statement and our review of the information made available by the Commission at <http://www.sec.gov/litigation/stoporders.shtml>, no proceedings for that purpose are pending or have been instituted or threatened by the Commission. This letter shall serve as our standing opinion to you that the Common Shares are freely transferable by the Holder pursuant to the Registration Statement, provided the Registration Statement remains effective. This opinion letter is limited to the federal securities laws of the United States of America. We express no opinion as to matters relating to state securities laws or Blue Sky laws. We assume no obligation to update or supplement this opinion letter to reflect any facts or circumstances which may hereafter come to our attention with respect to the opinion and statements expressed above, including any changes in applicable law that may hereafter occur. This opinion letter is being delivered solely for the benefit of the person to whom it is addressed; accordingly, it may not be quoted, filed with any governmental authority or other regulatory agency or otherwise circulated or utilized for any purposes without our prior written consent. Â Very truly yours, [ ]

By: Â cc: EXHIBIT B SELLING STOCKHOLDER This prospectus relates to the possible resale from time to time by Keystone Capital Partners of any or all of the common shares that may be issued by us to Keystone Capital Partners under the Purchase Agreement. For additional information regarding the issuance of common shares covered by this prospectus, see the section entitled âœKeystone Capital Partners Committed Equity Financingâ above. We are registering the common shares pursuant to the provisions of the Registration Rights Agreement we entered into with Keystone Capital Partners on [â—], 2025 in order to permit the selling shareholder to offer the shares for resale from time to time. Except for the transactions contemplated by the Purchase Agreement and the Registration Rights Agreement, Keystone Capital has not had any material relationship with us within the past three years. As used in this prospectus, the term âœselling shareholderâ means Keystone Capital Partners, LLC. The table below presents information regarding the selling shareholder and the common shares that it may offer from time to time under this prospectus. This table is prepared based on information supplied to us by the selling shareholder, and reflects holdings as of [â€¢], 2025. The number of shares in the column âœMaximum Number of Common Shares to be Offered Pursuant to this Prospectusâ represents all of the common shares that the selling shareholder may offer under this prospectus. The selling shareholder may sell some, all or none of its shares in this offering. We do not know how long the selling shareholder will hold the shares before selling them, and we currently have no agreements, arrangements or understandings with the selling shareholder regarding the sale of any of the shares. Beneficial ownership is determined in accordance with Rule 13d-3(d) promulgated by the SEC under the Exchange Act, and includes common shares with respect to which the selling shareholder has voting and investment power. The percentage of common shares beneficially owned by the selling shareholder prior to the offering shown in the table below is based on an aggregate of [â—] of our common shares outstanding on [â—], 2025. Because the purchase price of the common shares issuable under the Purchase Agreement is determined on each Fixed Purchase Date, with respect to a Fixed Purchase, on the applicable VWAP Purchase Date, with respect to a VWAP Purchase, and on the applicable Additional VWAP Purchase Date, with respect to an Additional VWAP Purchase, the number of shares that may actually be sold by the Company to Keystone Capital under the Purchase Agreement may be fewer than the number of shares being offered by this prospectus. The fourth column assumes the sale of all of the shares offered by the selling shareholder pursuant to this prospectus. Â Name of Selling Shareholder Â Number of CommonShares OwnedPrior to Offering Â Maximum Number of Common Shares to be Offered Pursuant to this Prospectus Â Number of CommonShares OwnedAfter Offering Â Number(1) Â Percent(2) Â Number(3) Â Percent(2) Keystone Capital Partners, LLC(4) Â [ ] Â \* Â [â—] Â 0 Â â€" Â \* Represents beneficial ownership of less than [ ]% of our outstanding common shares. (1) This number represents the [ ] common shares we issued to Keystone Capital Partners on [â€¢], 2025 as Commitment Shares in consideration for entering into the Purchase Agreement with us. In addition, we have agreed to issue to Keystone Capital Partners an additional [ ] common shares as Commitment Shares [ANYTHING ISSUABLE WITHIN 60 DAYS SHOULD BE INCLUDED IN THE TABLE]. In accordance with Rule 13d-3(d) under the Exchange Act, we have excluded from the number of shares beneficially owned prior to the offering all of the shares that Keystone Capital may be required to purchase under the Purchase Agreement, because the issuance of such shares is solely at our discretion and is subject to conditions contained in the Purchase Agreement, the satisfaction of which are entirely outside of Keystone Capitalâ€™s control, including the registration statement that includes this prospectus becoming and remaining effective. Furthermore, the Fixed Purchases, VWAP Purchase, or Additional VWAP Purchase, as applicable, of common shares are subject to certain agreed upon maximum amount limitations set forth in the Purchase Agreement. Also, the Purchase Agreement prohibits us from issuing and selling any of our common shares to Keystone Capital to the extent such shares, when aggregated with all other common shares then beneficially owned by Keystone Capital, would cause Keystone Capitalâ€™s beneficial ownership of our common shares to exceed the 4.99% Beneficial Ownership Cap. Â (2) Applicable percentage ownership is based on [â€¢] of our common shares outstanding as of [â€¢], 2025. Â (3) Assumes the sale of all shares being offered pursuant to this prospectus. Â (4) The business address of Keystone Capital Partners, LLC is 139 Fulton Street, Suite 412, New York, NY 10038. Keystone Capital Partners, LLCâ€™s principal business is that of a private investor. Ranz Group, LLC, a Delaware limited liability company, is the managing member of Keystone Capital Partners, LLC and the beneficial owner of 97% of the membership interests in Keystone Capital Partners, LLC. Fredric G. Zaino is the managing member of Ranz Group, LLC and has sole voting control and investment discretion over securities beneficially owned directly by Keystone Capital, LLC and indirectly by Ranz Group, LLC. We have been advised that none of Mr.Â Zaino, Ranz Group, LLC or Keystone Capital Partners, LLC is a member of the Financial Industry Regulatory Authority, or FINRA, or an independent broker-dealer, or an affiliate or associated person of a FINRA member or independent broker-dealer. The foregoing should not be construed in and of itself as an admission by Mr.Â Zaino as to beneficial ownership of the securities beneficially owned directly by Keystone Capital Partners, LLC and indirectly by Ranz Group, LLC. PLAN OF DISTRIBUTION The common shares offered by this prospectus are being offered by the selling shareholder, Keystone Capital Partners, LLC. The shares may be sold or distributed from time to time by the selling shareholder directly to one or more purchasers or through brokers, dealers, or underwriters who may act solely as agents at market prices prevailing at the time of sale, at prices related to the prevailing market prices, at negotiated prices, or at fixed prices, which may be changed. The sale of our common shares offered by this prospectus could be effected in one or more of the following methods: Â â€¢ Â ordinary brokersâ™ transactions; Â â€¢ Â transactions involving cross or block trades; Â Â â€¢ Â through brokers, dealers, or underwriters who may act solely as agents; Â Â â€¢ Â â€œat the marketâ into an

existing market for our common shares; and in other ways not involving market makers or established business markets, including direct sales to purchasers or sales effected through agents; and in privately negotiated transactions; or any combination of the foregoing. In order to comply with the securities laws of certain states, if applicable, the shares may be sold only through registered or licensed brokers or dealers. In addition, in certain states, the shares may not be sold unless they have been registered or qualified for sale in the state or an exemption from the state's registration or qualification requirement is available and complied with. None of our common shares issued pursuant to the Purchase Agreement will be offered for sale or sold by us or the selling shareholder on the [TSX] or to purchasers resident in Canada. Keystone Capital Partners, LLC is an underwriter within the meaning of Section 2(a)(11) of the Securities Act. Keystone Capital has informed us that it intends to use one or more registered broker-dealers to effectuate all sales, if any, of our common shares that it has acquired and may in the future acquire from us pursuant to the Purchase Agreement. Such sales will be made at prices and at terms then prevailing or at prices related to the then current market price. Each such registered broker-dealer will be an underwriter within the meaning of Section 2(a)(11) of the Securities Act. Keystone Capital has informed us that each such broker-dealer will receive commissions from Keystone Capital that will not exceed customary brokerage commissions. Brokers, dealers, underwriters or agents participating in the distribution of our common shares offered by this prospectus may receive compensation in the form of commissions, discounts, or concessions from the purchasers, for whom the broker-dealers may act as agent, of the shares sold by the selling shareholder through this prospectus. The compensation paid to any such particular broker-dealer by any such purchasers of our common shares sold by the selling shareholder may be less than or in excess of customary commissions. Neither we nor the selling shareholder can presently estimate the amount of compensation that any agent will receive from any purchasers of our common shares sold by the selling shareholder. We know of no existing arrangements between the selling shareholder or any other shareholder, broker, dealer, underwriter or agent relating to the sale or distribution of our common shares offered by this prospectus. We may from time to time file with the SEC one or more supplements to this prospectus or amendments to the registration statement of which this prospectus forms a part to amend, supplement or update information contained in this prospectus, including, if and when required under the Securities Act, to disclose certain information relating to a particular sale of shares offered by this prospectus by the selling shareholder, including the names of any brokers, dealers, underwriters or agents participating in the distribution of such shares by the selling shareholder, any compensation paid by the selling shareholder to any such brokers, dealers, underwriters or agents, and any other required information. We will pay the expenses incident to the registration under the Securities Act of the offer and sale of our common shares covered by this prospectus by the selling shareholder. As consideration for its irrevocable commitment to purchase our common shares under the Purchase Agreement, we have issued to Keystone Capital \_\_\_\_\_ common shares as Commitment Shares in accordance with the Purchase Agreement and have agreed to issue to Keystone Capital an additional \_\_\_\_\_ common shares as Commitment Shares. We have also paid to Keystone Capital \$25,000 in cash as reimbursement for the reasonable, out-of-pocket expenses incurred by Keystone Capital, including the legal fees and disbursements of Keystone Capital's legal counsel, in connection with its due diligence investigation of the Company and in connection with the preparation, negotiation and execution of the Purchase Agreement. We also have agreed to indemnify Keystone Capital and certain other persons against certain liabilities in connection with the offering of our common shares offered hereby, including liabilities arising under the Securities Act or, if such indemnity is unavailable, to contribute amounts required to be paid in respect of such liabilities. Keystone Capital has agreed to indemnify us against liabilities under the Securities Act that may arise from certain written information furnished to us by Keystone Capital specifically for use in this prospectus or, if such indemnity is unavailable, to contribute amounts required to be paid in respect of such liabilities. Insofar as indemnification for liabilities arising under the Securities Act may be permitted to our directors, officers, and controlling persons, we have been advised that in the opinion of the SEC this indemnification is against public policy as expressed in the Securities Act and is therefore, unenforceable. We estimate that the total expenses for the offering will be approximately \$[—]. Keystone Capital has represented to us that at no time prior to the date of the Purchase Agreement has Keystone Capital or its agents, representatives or affiliates engaged in or effected, in any manner whatsoever, directly or indirectly, any short sale (as such term is defined in Rule 200 of Regulation SHO of the Exchange Act) of our common shares or any hedging transaction, which establishes a net short position with respect to our common shares. Keystone Capital has agreed that during the term of the Purchase Agreement, neither Keystone Capital, nor any of its agents, representatives or affiliates will enter into or effect, directly or indirectly, any of the foregoing transactions. We have advised the selling shareholder that it is required to comply with Regulation M promulgated under the Exchange Act. With certain exceptions, Regulation M precludes the selling shareholder, any affiliated purchasers, and any broker-dealer or other person who participates in the distribution from bidding for or purchasing, or attempting to induce any person to bid for or purchase any security which is the subject of the distribution until the entire distribution is complete. Regulation M also prohibits any bids or purchases made in order to stabilize the price of a security in connection with the distribution of that security. All of the foregoing may affect the marketability of the securities offered by this prospectus. This offering will terminate on the date that all of our common shares offered by this prospectus have been sold by the selling shareholder. Our common shares are currently listed on The Nasdaq Capital Market under the symbol APTO. EXHIBIT C The business address of Keystone Capital Partners, LLC is 139 Fulton Street, Suite 412, New York, NY 10038. Keystone Capital Partners, LLC's principal business is that of a private investor. Ranz Group, LLC, a Delaware limited liability company, is the managing member of Keystone Capital Partners, LLC and the beneficial owner of 97% of the membership interests in Keystone Capital Partners, LLC. Fredric G. Zaino is the managing member of Ranz Group, LLC and has voting control and investment discretion over securities beneficially owned directly by Keystone Capital, LLC and indirectly by Ranz Group, LLC. We have been advised that none of Mr. Zaino, Ranz Group, LLC or Keystone Capital Partners, LLC is a member of the Financial Industry Regulatory Authority, or FINRA, or an independent broker-dealer, or an affiliate or associated person of a FINRA member or independent broker-dealer. The foregoing should not be construed in and of itself as an admission by Mr. Zaino as to beneficial ownership of the securities beneficially owned directly by Keystone Capital Partners, LLC and indirectly by Ranz Group, LLC. EX-23.1 5 d910194dex231.htm EX-23.1 EX-23.1 Exhibit 23.1 A KPMG LLP 100 New Park Place, Suite 1400 Vaughan, ON L4K 0J3 Tel 905-265 5900 Fax 905-265 6390 www.kpmg.ca Consent of Independent Registered Public Accounting Firm The Board of Directors Aptose Biosciences Inc. We consent to use of our report dated March 26, 2024, on the consolidated financial statements of Aptose Biosciences Inc., which comprise the consolidated statements of financial position as at December 31, 2023 and December 31, 2022, the related consolidated statements of loss and comprehensive loss, changes in shareholders' equity and cash flows for

the years then ended, and the related notes, which are incorporated by reference in the registration statement (No. 333-â€œfâ€œfâ€œfâ€œf) dated FebruaryÂ 13, 2025 on Form S-1 of Aptose Biosciences Inc. and to the reference to our firm under the heading â€œExpertsâ€ in the preliminary prospectus included in the registration statement (No. 333- ) dated FebruaryÂ 13, 2025 of Aptose Biosciences Inc. DRAFT Chartered Professional Accountants, Licensed Public Accountants FebruaryÂ 13, 2025 Vaughan, Canada KPMG LLP, an Ontario limited liability partnership and member firm of the KPMG global organization of independent member firms affiliated with KPMG International Limited, a private English company limited by guarantee. KPMG Canada provides services to KPMG LLP. Document classification: KPMG Confidential EX-FILING FEES 6 d910194dexfilingfees.htm EX-FILING FEES EX-FILING FEES Exhibit 107 Calculation of Filing Fee Table Form S-1 (Form Type) Aptose Biosciences Inc. (Exact Name of Registrant as Specified in its Charter) Table 1: Newly Registered Securities Â Â Â Â Â Security Type Â Security Class Title Â Fee Calculation Rule Â Amount Registered(1)(2) Â Proposed Maximum Offering Price Per Unit(3) Â Maximum Aggregate Offering Price(3) Â Fee Rate Â Amount of Registration Fee Â Â Â Â Â Equity Â Common Share, no par value per share Â Other(3) Â 12,030,218 Â \$0.18265 Â \$2,197,319 Â 0.00015310 Â \$336.41 Â Â Â Total Offering Amounts Â Â \$2,197,319 Â â€œ, Â Â Â Total Fee Offsets Â Â Â Â â€œ, Â Â Â Net Fee Due Â Â Â Â \$336.41 (1) Pursuant to Rule 416(a) under the Securities Act of 1933, as amended (the â€œSecurities Actâ€), this registration statement includes such indeterminable number of additional shares of the registrantâ€™s common share, no par per share (the â€œCommon Shareâ€), as may be issued as a result of an adjustment to the shares by reason of a share split, share dividend or similar capital adjustment, as required by the plans. (2) Represents 72,181 Common Shares previously issued to the selling shareholder on FebruaryÂ 7, 2025, 168,423 Common Shares to be issued pursuant to the purchase agreement with the selling shareholder, and up to 11,789,614 Common Shares that are issuable at the option of the registrant pursuant to a purchase agreement with the selling shareholder. (3) Pursuant to Rule 457(c) under the Securities Act, calculated on the basis of the average of the high and low prices per share of the Common Shares reported on the Nasdaq Capital Market on FebruaryÂ 7, 2025.

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M,S0X45%E>DY14#1F=\$@V,EHV9%7;F%L84IE869D4EAL\$\$[ M:U\$O2FQ\*1T5=&W!W35121D9%-  
%=\$\$[04Y8,R]P,790 M\*W%/4\$5%+WE8<5 U=C)J,6)V\*U8Y9FQ0+S%F9BMN5S@O-F\T.%8\*U,Y4B].  
M\*S!F\$\$[,4Q1;W1W9E-M:31M4W!8\*SE3 M3W1E2C9945%81WHV6\$II\$\$[\*VY>6Q344QE5#(O-7\$O;71R,F]F5CE(665S  
M,WA#,W1,84YW<2LU;%=19V4U3U\$T:7EO36Q)+S5Y2VAI.61P16PT9VQO04Q! M=%%F-B8C>\$\$[<6EV,\$A\$-  
FPR4TPX=V)E8GI8-6\$P=69Z,6-(>7AR1FYC5'@V M95!QDY%0U=1<5%P-59O97=X4&TU,F@Q=F=%-U=#.28C>\$\$[  
M4"]+74T0T5Q;TQC94E0SA3 M86=J9DI21%)R3E5C,"M):6U96DIX57 X=RMB9DQ8;"8C>\$\$[>3-79E\$\$[;E  
S9F%,S!F.#10>3(Q85)) M\$\$[86%D<#EZ<48U2C96<%IX4-&8371'8FI(17!D  
M,C1Q0WAO;S9!5GA:46=:14%>7=J+VQF6#54+SE8,R]P,790\*W%/4C1G-3,X  
M;#9J\*R8C>\$\$[8CEO+UB]Q:FIX0F8U3#%(.#,W M4BMT,R]+\*W9Y;B\|V=G8X03 V,VX05DA(:4,O>5AQ4#5V,FHY8E  
X028C>\$\$[ M2DJV9DPO;E153'(X,"JZ8G1T13 Y>BMI75B:G\$\$[-7=Z-E)F3U)P M5C O,5=35G1G,79-  
43%V3V4S=VUN3'34U9#)+=7A6-&0O>FQ0+WAX3D(O-28C>\$\$[5IV\*U1A-5A0;3=ZB]+9CAV9%@X:#9.<5=O-E!  
(8UAT>D)Z;FU:-WEL:35-2S!6=T\|S:&I' M24EA,6)R\$\$[\$\$[3' Y.4-P4'!T2DAY5T]:465H-4M.+S534FM!84OU3S!)4GIA  
M9GA=%=0.5!Q6\$ON,&Y9<7=H+WE5+TLY,UHR,\$=-\$\$[ M+W9Z26-!8\$!D<%HO-  
3,S4\$90.%N25!Y8C5..-8\*V128499\$\$[\*U10>6803&40 M=T1\*\*VA8,3-O:V-T,V0V9F%4,T5P:VY"85-30D=D<4-  
11&1J,GE19TA686YT M1\$Y(2DE#5W=K93=V6G8U6CAL\*U=03"8C>\$\$[0UA#8499\$\$[+UEJ6D6EN9B8C>\$\$[8T4W-  
45I>30X<4).8VYQ4&PO>7I09FPK>BMO851A2F)21VAK M66)U-4AD,TY762]02F=5=TI44\$-H:5 U;F54269-  
+VQY5D53=7 R4R8C>\$\$[ M=DYP-T1Q6' X569Y:T,P\*V1-:DE7:T9J=B]4/MP451E5F)U=T5H3GAA6%)D M-'HK>DA-  
:3A#4%ES:EE)2FLY47EB1CAG97!A\*V)0>B8C>\$\$[8VQJ,#58-U=D  
M<\$YE>E\$\$S16IN9TDP:4Q#3T%&=&Q<6]3=F)R,\$PR1DA&<"S47,Q\*T,K,:)8  
M.&U0>7(K<4ES3VE14W=U;TMY\*W)+-28C>\$\$[I654V:"M:3R]S8VY0W0C4R6&%/ M:W9E4E-  
J568X06Y(5#AV3&DW:5B3T\T\$\$[-6=+3D@X95004%!54=W2%:3C%BE(K M;B\|P,28C>\$\$[64QF9E4O<6X08FLX:6-  
05CEF;CEH:#8X1C8U0TU16&8Y&8X:F)J+T%+<5I,9T1P=C53>B8C>\$\$[ M+W!=!-S=N9CAO4B]1+,R1Q=WAF.%),C0O-  
G%9.%8\*U5S+SA!3RLU1&9N9C4S M2&QF>5A;9\*=S%45F56<%!2#1L1\$0Y-TM0.5)\$,28C>\$\$[+VU)=U1/>DQS  
M,U1E3&Q+U1(8W-(+S5X,W-V2S)H-E!C-CEO;7%73G9Q;6]K>%25%A%2U-2 M5S!:,W%R34=5>4]+,\$DV0F-  
J16AZ=28C>\$\$[35:2GE%264I4:\$EW:R8C>\$\$[0T%F3%Z>CAK9D]H, HK4TOF-G\$\$[+W=\$:FEA1"]!37A-,R]\*=&-R;GID-  
3)(.6-8V=V25@O3U%( M:S-Y.350,'928C)Z,4=3-G-99E1L94=+0F]Y95)0=VQ;U!F=4U9>28C>\$\$[ M;TYM<3=+>35-  
&M\$1VHW+T%.4TXO>B]N2U!25G1:0FJE:UA=-#!6<\$\$[>3@X>6%V-79( M;F9Z0D9\*1&)X>7E856)42U5E-  
75:2R)%1DY\$=U5V>35D0V1H,W=21G0S85=R M:\$1(-%509#=G\*VI=-&5C9&ER\$\$[+W=\$>FQ2+W@Q4\$PO05!X9W50  
M.%I85I84&TY1C)(.4UV9SEP+TPS+T%\*44AY,2(R>7)(+T%+:&MY635/#%F  
M.3E0.%R2#\$\$[G:5X5C1&-5):4L04\$,U=#E1:V(Q2DQM-VE3 M5U%M6A:  
M2C9I3B8C>\$\$[8V%J9\$LS,4\|R6'!6869(26\$O0V)\*UHO5D=5<5-8GHS+VY( M;3-U2DY3,74K2G!%231O,CA#-W-  
Z9F=&+TA)=UI393-67=E8F5F=B8C>\$\$[ M>4HXE-22&I6=F171F4K44U(6F%8  
M=%1\*:4A\$.558;G)F:T0K6C)G=5IV3%AM0D1X<59%328C>\$\$[#,EN26902\$!. M+V0X:G=L,E X<31-;3  
T+UE#:\$Q4.#)V>E8X:&Q2'!N;DM&-S(S,DQ26\$%1 M>6U);6AE0S1J,F9P\*!72&)B145H;"8C>\$\$[3%A9E!  
(:7AB2#AC=RMJ=\$XO M0S(Q2%1R6%5,5G5D#-%1&M5D->%EP  
M0BM96"!0V=0.5@O="8C>\$\$[;%@S+T%&1%!G4\$!Y3DHO9E\$O\$\$[&DT94]01F0O,V5G+W=\$2V@O>D\O=T-P,&  
(O:V1D+S%W.\$)D M9B]1+,40O52]U6FPK5T@U8V5B+TLR\$\$[ M9FDO3EDAL:4)4\$1V-5!)=DXQ-V1F,7 K8G/-  
M;%=%:\$]L=WEF5DQA5F0Q5S)H2F%E9G0Y<6I=-&8X028C>\$\$[2D=12G-U-# X M4G!D4'A(-G5F>#9"-G(O04Y#-  
&9L="]968Y2D@O3G54-\$A5+WEX;CAV:S\$\$[>BM8>657+V PY<58U\*U=8-7,S M1V6Q(4\$LR=5  
K1TAY5FUY04Y&G5R9TY4<'A/4\$UB M+T%+=RMO.'5E5V1I\$\$[=S\$\$[9FQK33!G0V5B35E.03!+0U9:;TY=%EP:TY5:U-  
'3E=5\*TE) M5V\Y9D-(1\$]76C)\*2U!W=&)S5F1I\$\$[ M04U93&HO:6%:6%!M.48R2#E=F%8U5"MB6&M+-S%6-  
&9.9B8C>\$\$[;='M6%5B8T0Q M,'1Z5C5"169G;&E+.5A3:\$M\$8SET>&M\*1%'63(R2W U3B)01%)R<3%3,3AY M&4U-  
\$U96E.-<3!517AT->8C>\$\$[9VEN=C)X13!2V4V,RMB+T%\* M2#!Y,6%72RM854HV9G4W83%Q-5DY<78Y:%(X>FA-  
9VIH94\$K869-7(K8DYC M;3%/-5)M66EK3G9(5B8C>\$\$[;&AH5W!#1&)O2S%\*&0X#9M  
M=7IO3W%14\$%5=%5U56MH=4M5-7,V8UA7=F9H-F\$O9FLT35I05TUM>&5\$-C,K  
M96YN\$\$[>7@U:3%.S%F>2M:3DA&>DE,1#%K93%L.4%-5E%J5VIX=E5B M.40X.'T>3\$\$[  
M;C\$P<%=N:G@O:&@T>7@O:T]8.#1-23%D+U!F-7HK6F)793\$P=C9N<'1U=F]X  
M5\$AK8F5"1V%R=\$I=U@Q2#EL2&:9752-6QZ\$\$[2T]",&J.'HX M2# W;S)M4396;SE<&-%3%\$R1G9&87A-  
.U5R0V=24V9O6\$Q1.'AK;5IY36HO M3F1Z0W=31#AW=BM50CAY+SA!8DMV=B8C>\$\$[\*V]:\$(U3U)P4#\$\$[;S,O43  
K:68Y5T38S M\*U\$U+WIG-R]O86924"MR1&,O=T1-E X035P>#1Y=CA!26,O-  
7=E,7\$\$[;FEE;\$\$[327%M;GI!>61;/\$UI95I6C(O=\$!]2C1K;\$.W9R8C>\$\$[ M3V]A,C,T,&M3235,,S0T-  
#!#4G%4F1L5E%0CAG355%,G5X5C)+=7A6,DMU M>%93;G1,5V-G>G=X>6QF\$\$[4D9246E!2VEG  
M0E9!;T%,\$%1D1E2W-/+TYZ4V9-97)E471328C>\$\$[9WHU344O-7@V.&DK8W9,.7IO M9#=R545L%:DS15-  
X45=54U="34O83)Q>%I! M0DAC.32LX;B8C>\$\$[CE),#)P86)".7DS5S1J3%)312M,3D=6-68W M2W5435\$V5S!H:])-  
WE"2\$QZ93-N:5@O9E1Z2]O:28C>\$\$[3(O.693FE0,G9454)M<#-D=G1-9CE9-%'3G!H:%8R  
M2W1:/75P4G='4F=1>6M60D(V9VI&54%03'9L.% V9S!Y,#E3=DON-B8C>\$\$[ M161A.6\$Q-#EC2-  
'>GAP.34K85E!0E%!0E%\$64%D04U,5S=&6%EO,#9+-FQ( M051'0D1+4E5%2'%'#3591,S9+,'8O;&IG+S5&  
<"140B8C>\$\$[45IC8W4Y,S9+ M,'8O04I9-% K4F%F,AO3'AY-S-F;W)3+SA!;&IG+S5&<"141V=V2\$QV4E=&

M:3=&6%EQ-T95;3AY96)T1CAU2F)

),W456HOP6HNU57@SX#28(Y(3S2BVD#%U/@^SLG=%OU3,NI3P9Y(Y4X M55>1-G:A4M-IFO RJUYZ:@EA5=L2,O.]  
[=+\$T4SHK/7-15IV+)Y>) MKER5.W>PI0K5,Y3\$1AJ?!6.;5BN+5I7K!7-3-]+\*OC)SM^)R.9(QLM3 M5E\$OA\* 65  
'4NUQI+3;IZZY3LIZ2!NM)(=B) ?F,U:1---TO4LM'A MMTEMMNUN^M7\*>5.7/Y"E=K2+^XW-WH\*  
[NVG[#U,YS;=051;J<#G(V)J].J|^@S-(]LCGR.<][ES].X-9IC\_G,S/T7K5;H>LIXTXM]J7/134,B[!=!W /O M;3:D3G21?ZBF  
1S2^J.&Z:/^GW79#NA+RB^ 66WO3 P>]O\ -3UJ+=\\$1JJ\7 M8=>U.-T-7GZ%;GK,^@OBM2U7FBJ)%X(TE1'  
%5R=Z# #X38N:\$\OEN<%LÜ?HF8IV 09\*T3X MMO:N\*+79[9=9Y(\*B9K'0U'OK&QIMLT=6EJBFJW;T\$D\*MW2/Q;O^EQ  
M?U\$3LWTMNFY>IHJV7A>-\$: (5;YUH\(:U^0JWSK3,(.73)DZ7R^M'>-\$ M: (5;YUH\(:U^0JWSK3.(-)V3I?+  
[RT=X0UK\A5OG6CPAK7Y"K?.M,X@\$:- (5;YUH\(:U^ M0JWSK3.(-)V3I?+[RT=X0UK\A5OG6CPAK7Y"K?.M,X@J-  
:U,U5>!\$,::6.5.Q:C\*LK8W\*M%\$N\4J? K;J?WES7KYB^M MT%BWW PBMMI9-6ONF<\*9+M;%M>O-  
&]:AE0SKGN=%P738B;J?T@)4N";BF MC15JU>Y%J=YU,MNIP;YT:WBGF/L-1B:\$=:#::3-'U\$B<[+/48FUSEZ\$15-  
MGRX>M[+NP\_O\*];5INY48G\$S++/IX^7:133E]>OU Y6:8WG?T88MH>Q5^ M" F:2HF?T%3 AJK-=B, MNZI \*F' -C-  
-\$THHRJW=CPSX6C^?O\*9.'K;1W?2):&YT[\*FDE637B>FQV4 M;E3THAISO:8. P!/4/U5\_N9OT\$?  
&I9.F7[EYK|M1'1Y7&+M=%Z(IJF.GCY1 M#O:8. T]0 57^X[VF#O]4/U5\_N2%\L0\G\Q=\ 640[VF#O]4/U5\_N=.MT  
M1X\*JV\*BV5D2\3H9I\*&G8[(G8&(3&IO1M7/UE0>\*]S 'O3YL+7)^)M2FK,E1 M>9'HB9=-:91EZM-  
=9+C 076EDI:N)UJP5Y I .2>T38\$8A?\ ,WO/ M/UE">]5@KR!3^M5%9=(5VM)KIVT  
M]^"L>I\$U55&YQM5>P][#B:= C4OG3#]RP@)E,]LM+,S9HF?"LMW<]X7L MV):R]LOM!'6-@CB6-'N: M-&  
\*8Z,]5@KR!3^JP5Y I .2>T>KAW\6L.5LF79+9%25#XUB<]CG\*JM547+;J\:)V M\$A Q" M6HNU1BJJ9CUD !+(  
(UI)O<^L#7BYT?XS!#E\$N6>JYSD:CN179106 MHHFNJ\*(WEW[KB6R6FI93W.[T%). +\*.:=K7;>95/4BD9-&V2)[7QN3-  
KFKFB MIS\*8)JJB;JJ)ZF5T\CE<^1[EXW!N,Y?/\*ZWOI7R20] MY58BHK5IG\$V37TD%?  
13TE7&DE/Q6/8O&BF3<66=IAO'7VQSE?W/JLV#=%5ILR,J+JC;E7)M\= M/>F+S-  
X^E>O#W='&&X<-89IH\$C1\*R9J2U+MJO5.#H3@3 ]0333XHF1J(U\$ M1](B)L1\$X@ 75 =\*]6NDO-LGH+A\$DM-  
,W)R<:GB5.4UB0O2QAE,1X7F6%F=?1HLT"HFUH#,Z&QG+>,1OL5)\*J6ZW.U9\$ M:NR2;C5?  
U>!.?J(YJVIDK\*R>IG76EFD=(>557-?6<C,Y=UI[-BW%NGN> MEAZR7#-\$UAMUHIG5%)P-38B)QJJ"(G\*I?F%  
%O@B9+B6X354^6:P4J[W& MG,KE36= ZG-N7K731X7N5T1K5JYZI8%-QHOK6JB=KE7L+I+TTQC+PN(1NO<  
MFU;G\$14-H-&#:%J%A^D?EQSZTJ \LJGIMP7AAJ9)AVT9?0X ['O@MAX\ MW[M614 5%ZG1]A\*H14DP[,\$S^9  
UB]J9'@W'0O@NL1=[M U(Y?E4)0]0Y53 MT%C 8A:G57J/TUS]5#WK<]0.1SK?)6+O1U<2.S 'FY?PE;8ET3XML+7R26  
MY:VG;PS42[ZGU?A)V&P01-/MM<7U%'ZIYH^/.YAPXKZ^Z7ZIC5@3N2#63 MY:Y\*>E\$U4 >4T,+  
(V1ZV]L:W676=JIEFO\*O.?1,1B'R:K43J;LW)Z ?, M %6[I'XMW 2XOZBTBK=TC\6I \*%7 41.SZM#\11ZPRH>O@RE@KL8  
M6\*DJXTEIJBO@BE8O YKI&HJ=:\*>.> H^ /S#7^YTWWK3\*9W9Q15,>#5'>JP M5Y I .2>T.]5@KR!3^\\ 64)  
[U6"O%/YR3VAWJL%>0\*?S MDGM\$V Q!^9O>?K\*\$]ZK!7D"G\Y)[0[U6"O%/YR3VB; 8@ ,WO/UE">]5@ MKR!3^JP5Y  
I .2>T.]5@KR!3^R\*-TDCD:QB\*YSE7)\$1.%5/HJC=#XL]Q\*):63\* MNNF;%R7:R%/AKU[&]:\A\$SAM8LS?  
N1;][U"Z4,4OO=C"MN#7+W(U=YI6KQ1- M5IOSJ+LW)[U";IK"FM%28FI(IK,J:KR3B^0Y>O-O6TSZ;NO  
MUJIKW9JVV5K=:GJHG1/YL^=.%R5.:@Q#B"TU-C05;,\*UN512RK&[D7+@5.94  
MR5.DI5'>Z'@^I \$MS:G>G]9H7Q5^"V::2>35H\*S\*FJG L@ +O' /F61D M43Y)7(R-B\*YSE7)\$1.%5 Q-I%HV4&[\_ \$T2(V-  
E;+JHG\$BN543TD=/6Q=28N|M1,44Q5OB%[IE6=R5V(J?/Q71PORYT5 MZ?S-#%!:E:B=RK^/XC\_90>MYH8TIVYYK.  
[7]1WVG[C5%66%V^(G.B;%7K M0M31KH(MN!J6;N61]575"(DU3(F2JB?):GR4[>G@)H>%C?#?  
<XAKER\_B4J8QGI+2.L-GQO:)&U:DU,U@DX M-  
:+C14R1>/8AJ\*U7.ANU&RKME7!5T\$^"2%Z.3T\$1:5=\*\*LYH9FN5.E\$7-  
>EABX1VG\$EIN,S/BHZN\*H>UG"Y&/1RHG/L,8=G\$'8?-T\_X :N;"JG:GR2N<%,>\$'8?) -T\_X :A! MV'R3=Λ C]H]4  
MS%^3\$W/5[=JKSJI?&Z,Q:[CX999:23\*MN>:29+M; GPOK+LZ-8R^9USW.DX- MIN6F;]7?  
TCT#3>YPPE[E8>EOU7'E5W),HE>!.=4-ITT,= -3Q00, '#\$U&,8U,D:U\$R1\$%\$=YOG4 M\,M,6:=YW](  
#1S89 W36%,GTF)J2/8N5-5Y)Q[=1Z^EOU30!YN]+/3W^Q5U MJK4S@JHEC5HG3W8N=W?Z,\*%@Z\$.5 @OC6!\*B35M]  
M?E33YKL;FOB/ZEX^15(7>[946:[UEMK6ZM12RNB>G,B\\*36KZ/ #5:[55\$]5W6F21.9.S.:KB+MNJU7- M%6#,  
&=]U3^5.Λ [&:^)I11>NZI \*F' P!C- \$THHRJW=CP MSX6C^?O?:"/C4LG3+]R\U^8BP#B%,\*XKH;RZF6J2F5\_O2/U-  
:68YO#DN7#G MP%O^\$3# \*;D^V![-,O\$/@XI[U^%5NG,8^7C^@4+X1,/^FI/MJ>P/")A  
M P!-2?;4)@MS0\SL05>3WC^U] H7PB8?]-2?;4)@Z==NAZIS%2@P !\$ B=-4 MJ].Q&IZQS0F.%Z]?  
^OO'JM#\*N29KP%: M-]K:QK9P9; --\%=<%AHWI%IJ5-[8J[BZD1J= M1,P#: CBKER;E<  
\$\*TRTRU.CVY;J9K\$LW(B=B&/R2Z-I\$COW8W.X%6MZUV)ZR./8Z-[F/16N:N2HO\$1 MV;16.M]UHZQOPJ>9DJ?NN1?Y&4-  
&Q0?,\$,K)H8Y8G(Z-]4[U(G&O,A2F--+U37PRT>'87TD+LVK4 MR+[Z]? BB;&I.U>@B9B\$Q&7CZ;:W%=L8+!3/1-  
#&D"N1J-\*?J>=< 8G'M'E"MOP39J=R9.2G;1 MRT54\$3>&5&Z\?UVYIZ2N)A]UK5V;O2BJ)>EAS2=BRP.:E=I  
MJB!O 1JUWYF7)XVU,I4+EP5IVM=R?38DI %7Y;?YI0)J&-[9(VOCEKY M9ZQ.TOH \$OC "K=TC\6I \*%7 46D5;ND?  
BW?] +B J(G9]6A^([H]8 M94 /7P=1P7#%UCHJQF^4U3700RLS5-9CI&HJ9IM38\!B[6JKEB9GN>#8'> M?P-Y#3[3-  
[8[S^!O(:?;90;+DO([;L>^W]L?@V!WG\#>0T^TS>V.\ @;R& MGVF;VOR2=MV"?;^V/P; [S^!O(:?;90;'^?P-Y#3[3-  
[8Y).V\A/M ,Y: M^YH^,2Z#+ \$PNGO/X&AI]IF]L]7#6 ,8:N\*UUDMB4U4K%C5^ 2\ %7)5 M3)SE3B013,2PU/%K-  
VU5;IB#CJ9XJ6FEJ\*A[8X8F\*][W+DC6 MHF:JO4AR%.I#%ON7AZ\*PTDF57)9<68LKKK(KDA)>[4@8OR(F&I \_->=5(X  
B9\!B[BBB\*\*8IIVA:.A 'ICP-2 M5KZRW5M3<:IR(LL6]JMC3@:F:Y\,KU11JKR\*6BJ M8?%=-X=805S77'6?  
FTGX0EC\D7/M9[0(2O^2+GVLJHS9JKR\*->11S2S]TW MA(M)^\$18 )%S[6>T/"\$L?DBY]K/.V]BC57D4J?!13)  
(?:MO:HBBG:%C,".5 @W MC6&"HDU;"Y94TV:[&NS\1W4NSH&?"T?S]Y 330U04ESTCVDN--%4T  
MLBRZ4K4I#MDQ0^>[QNN8Q;I0ZJO MT?Z'+AJ2,LN3DNMS9DYKI&Y11KRM9QSKGS(A: !:(P>)?N7JN:Y.9 2R M 9  
T[ &?F'EA 2?:= C4OG3#]RP@)C.[N-)^Q1Z1]E M|[E7?Q'>R@];S0QGGKG,WF548EI\$YAI70S?FWG!-  
/[JM^5.1,INJGP%-G4I,S+&CG M%#]\*XBCJG:SJ,7WJ18G&S/A3G3A[4XS4=+4155-%44TC9896H]CVKFC7@5"  
M]YA28<@ +( C>/40X5P +5N5KJN3.FB7Y3^7H3A7 I I 3IB%UQ  
MO(EK@D5:6@3)R(NOTJ[57J3).TK,Y\*B:2IJ)9YWJ^61RO>Y>%RJN:J<9C,Y: M1T#UL)VE\O';  
[I\$4\DN'<6N\*6MNESDR66!K8(T^;K9 MJ\ ^JVB(S)\*F-1C4:U\$1J)DB)Q(?H!LS \_-1S5:Y\$5J[I  
M%1>\_0!2NF;15,JFT5E\ P]3L\*ZF8LTT\$291S,3.Y4;O,1-NSAZ=IFPW+C\*X  
MP6K"EVK,MS4AAII%7/Y2JU41O6JHG68; ZH=1P>]M/ /T??GYAK\_JJI\$C@A8Z21[N!K43-5[\$,48]Q'-BK%5?  
=IM9&2ORA80R(T MV;-V#::DH MF]50.WH&CMS3A)\*6U5.(ZV+WZKSAIDHO-  
KG=29FV[=106Z@IJ\*CC2.FIXVQ1L3B:B9(\*[T8U/1%FG M>= 1S;VSYC>P;VSYC>P^@:.9?.]L^8WL&]L^8WL/H  
?.]L^8WL&]L^8WL/H M?.]L^8WL,O;HK"GN-BEMWI(16BNF;G9L;GPDZ]CNG6-1D7TEX89BW!]=:  
M5.Z=7?:9R\_E;FK>W:B\ RJ15&8?;H-3^7O15.T)8J+,T!8K\_!&.\*.IDU;" MYY4F:  
[&R9^]N[55/WBM98WPROCE:YDC%5KFN3)45.%//OJJUR\*U5147-%3B M,HG#KKUJF;FW5M+?@(=HFO2F+,%T=;  
(1%K8DWBJ3CWQO'UID[K)B: 'N6YM MU315O H SONJ?RIA \ 8S?Q-\*\*+UW5/Y4P ^OF B:4495;NOX9]  
M+1 /WE/M!QJ63IE^Y>: \_@:/C4LG3+]R\U^6HV>-OK]7/3 P.D !=XX M  
,@:= C4OG3#]RP@)M. QJ7SIA^Y80\$QG=W&D M 8H](R]RK^/XC\_&4'K>:&,[E7?Q'>R@];S0QI3LYCBOQ57)?8  
!9YP M "[4VF;]+F#8=N[JVBC7W\*JW\*K,DV1/X59T<:Q\\*TZKQIRM MY4ZTY 'T@X%K<)UBO1'5%KD=[U4(G!\_XOY%]?

H2'&76)7W:+I:B&KIXZBEE9 M-!(FLR1CLVN3E13E,K8.QM=!\*RY4,V^TCES?2RYJO>=/FKSIZ2Z\,Z5,/W=C  
M&5DJVRJ7A94+XF?, @[ZLNMM2Z:5=C4X&L3D:G\$AY9G-65XC "JP2K1SBJ7" M CGS5: M\*94CJ8^5F?  
PDYTX>U\_.BIS4E/+5U4-3L5\TSTC8U.%7\*N2(3"&RFJCD16JB MHNU%0%20]STL.,>MO;&LSYMG19:"%97  
MOA>K5UY%X%RX?:WZOT<+:+O1-9#B&BAN4:;%FB1ZEZ5^208A=)TMPJ<<7 MBKNM)44LL]0YS&3QJO= [1G W5KJPZ8L' MW9&I)<'6^9?^G61JS+JY,V^DF|ONE!GH4P\ 38\_,TV)[J2HB4U[ND\*)Q1U=\\#K|JX:=KZNI \_3.? ZU.F1SM;? Z8G-RO/HL+2EI M,K;2)2Q1K1V>-VLRG1V;I%XG/7CYDX\$Y^\$KT\$CP;@R]8NK4@L](YT:+E)4/ M\6\*(I= ).UYBN[V\*:;6FMXCI3#J82P\_68GO):K>O5EF=XSLMD;E/7F1#,- MEML%GM';J-NK3TL386)QY(F6;Y&M&V :=@>V.CIO\ \$5\,R)W15N;DK^9\$X MF\W:3\$TIC#E^):W\|S7BCI,>X "SS0 JW=(- %N P"EQ?U%I%6[I'XM MW\_2XOZB)V? 5H?B\*/6&5#W\WY^8: P!S1OO6G@'ZU5:Y%:JHJ:45.(Q=I73S M4S3XM^ P3W74\_I\$WUU'==3^D3?74TYW@=A3\_ )/; :>P,\$]UU/Z1-]=1W74 MI\$WUU'.=A3\_D]O\ :>P,\$]UU/Z1-]=1W74\_I\$WUU'.=A3\_D]O]MI P3W74\_I M\$WUU'==3^D3?74),NO,VO%8OY+=]H7V350)Y8?) M3Q: 13%- 1B/DJK0CHVJ<&K7UUZWAURGRACWIVLC(MBKMR3:JY?53E+5 )B, M/@OWJ]E5(EWBL7\EN^T+ IJH%>6'IV^+;BW3%\$8Z\*:T+8&Q7@J|U/NBE&ZU5<> M4K8Y|960;M:Y\$RZ4Z^8N4 F(P^+47ZM17^)7N EB J33C@"I8SK; M3+9NYM6FCD;)OTFIM545,MB\A6'>\*Q?R6[J0OLFJ@5FF)>C9XG>L41;IOB&? M]%^B;\$F& \<6VZW\*+N2G637WN;6=MCO?8 !+ MYP 9 TH:)V28DQO<[K:4HNY\*A8]3?)M5VR- MK5S3+E12\*]XK% );OM"^R:J!7EAZ=OBU^W3%\$8O'394N@W -YP757>21=S: M M4R-L>R: ^UJNSSV)RH6T 3\$8?%? OU7ZYN5[R EB ^99&0Q/DE>UD M; \$5SG.7)&HG"J55B33GANUU#X+=%4W61BY\*^)D74Y=J]29%]+ MAFBE5D]P A=%VB+M[OVAKO".EW"^( M6LCDJ 8L%KDHUZ.S:G-FW/K44U9Z\* <0X938HF[;G!CI\*O"STOY:>=O"R5JM7TG6-A7>T6^4^72C@JH^))&(N700"G45[>M#-EJE< M^V5530/7@80OK\$ZEV^DI-\$K14H:EJZFD?K4M1- [EC>K5!|WUO+?%;JK>:DK M>3NI\_P#D>717BYBY-MLHEDE? \Y[EBS%SER=:VL3E=4Q?R<>I0Z&13\*G=,U! M3-X]1.7+V(F7I&),PK0Y((9\*B5D4\$;Y97KDUC&JJJO,B%YV? 0I;H51\VN515 M\*GR(6I\$WK5K:::"G54R5Z)F]W2Y=J|I:\*)1S\*3PGHANER1 MD] [D]S:9=NJY:TSDZ.!O7MYB8U&A6QNBR@K(C'E)SF.3LU4]9:(+G4B(GI-@GDAE7QG45:8A5.&-!N&K6YDMT?/ M=IV[BIF41!%3T:9.CB8C6M3F1#F!.1AY]W47+T MYN59 20 (1IAPS7XLP>Z5J(Y?7ZK?Q? R6[J0OLCO%8OY+=]H7V350')!VSJ/E]&5>\*5B DMWVA?9'>\*Q?R M6[J0OLFJ@.2#MG4? +Z,J]XK% );OM"^R.5B DMWVA?9-5 M2 M RQNDZ:&GTA=TR-7>:JEC=&[B\7-JIZ/2A5)M72# M@JW8VM"4=PUHIHE5U/4L3-T3EX>E%V9H475Z ,2,J%;2W"U30Y^\*][WL7+G3 M47+M4S]IG+I]Q&S^#%R<3'13Q][NU4YD1.DN^GABIH(X\*)>-D4,:48QC\$ MR:UJ:\$1\$XD)IIQUE\O\$^\*(6[M'X5KKXR^P 7>\$ M M M M 9FJ48LJ25 M%!:KM7OE?4OBBC:- EGXRHB)GL(F<)B,M,@S)2:4H&[XYUV5\$VY-F:]>Q%7, M^%.5;Y:+BE+B9CJ!KM25'QI'-%Z\$SZ%3K(YC" @<5+415=- #44[TDAE8CV M/3@Z2@ CF-<86W"=\$DM M:9B^\_. GYDY 6!(P9TK1(>+J35JT]G26!KO@P4,:N?ESNVKU[\$/UN=&.),Z;]J MW:/A>X(CNQ7YE>:P6PT4#. "XGOYA=&B7\*2N1F>6K7-65C^9'+\_)2TM^DBA MO,YM'5L2BNF6R-79LE\_47EYEV] (BK\*)Z "R "HM\*.DFKMURDLN' M39JC5UE1R\_(8G!GRKU\$3.\$O&5N@SU%AW27<(TJUFNC5=XR))7;V[ZJN3+T]> MPKBC&5DQ5:;1?UJ'PU4[(5:6.UER54(YC"]P 60 13..+; MA\*G1\*C.HKI\$SCI6+DJIRN7Y\* <\_8!\*P9RJL>XSQ16.AM"SQHO!#01+FU.=VU> MO-\$/MN'-;DWY?7?/AS6X9.-? ,KS>"W\*T4#.BXHT@87VW.JIH.Y6/U(GJB9JKMOH+?PO-48:M,\W2324D+WOF "4 H#20BF^6W'5PI:"ZU=3,:%JQQR\*C4SC:J|E3:0: M4G-1S9+H]F:+W4SVBO,G#0 \* ]SM\*?S[I]J9[1<& X|T%A2A9B!95N:;^> MZY'.^&[+4YLB8G),/? !\* 9PO)CC\$-KOO=\$IKI4+!35TJ,>@[.51ZHC M53DRV%W8(Q718KM+:JD5&3LR;/ J^-&[ ^:+O\*1%64S"0@ E "@M+6\*+Y;<5 MM+;[K5T].OD:MCCD5\$3-B\*I? <:YOM5>")"(G\*MKZZZ M3)%"W8U\$VN>[YK4XU\*0O^EB WBJ6GL\$7<43EU6-C9ODS^O)?0G61,O"8C+00 M,Y,LVDFX)OV=ZV?? \*M8U^JKDR[#Z=6:2.,IOD[K003=JNE3NAB)SJNLB\$T1S?)." P5QHKL7P7" N7%CJM8% B1(M\_E:1- M;/ED]18Y,3E4 !( %6:5=(TUBJUM%CU,|T:BS3N36WK:/B(G KLMNW@S|(F M<\$1E:8,06325=XDK\$ENJ->FLW7K- Y5>AJN3+L0[%FO/C:#-JH:&^+4OAGF9 M&K\*UNNC5D5R(JM?PKU\*J\$=5>'4:JKVI MM(|9I&8:O[\*C%EBJJ1^MKT'4JZ- <\ A9\*GC>PB9R1&@&1&1/38&LL56BME M2G1F1KBFX.=EOC:=-7HUVY P B ME76<+1ME=.'!;.\VYE':Z=L3\$3QGY>/(O\*Y>-3U "ZKAK:2GKJ62FK(8YX) M\$R?'(W-%3H,X:3).P=? 8\*BVOD:0SJLE.Y%76B>U=K<^;8J+ 8TJ5GN@&QK@ MVF< +?K&:GU'YE:HZ)I2;1QB% <2X4I:V94[J:G#/E\|O'UIDO628J?<[N|I M@75JY|VE2BITZJ9\_R+8)CK!("4!F.X5+L.:5ZFLN4\*R-@N+IW-5-KF. [N:XQMRJC&IGFGS7)QIZ4\*U1E,3A)+1=\*\*4,-=9; M:B.HIWIL#F5.)>93EJJ2GJT2IACEWJ1LK- =N>J]JYHY.14,U5MLO5HZN M. QNEIV\*N25\*\$Z\,O,O%U.3,M;1QI,I1RLM]TC92W14\16 YU'-5,E14S1 M3JVRV45KCECMU+%31RR+\*|D3=5JN5\$15RX\$X.V #.VGO/AGT2/\ MB<7G@ \ -R? 08/NVE&:> SX9]\$C B<7G@ \T|)!@^|:4IWE:=GK NJ # M, ^FCXO:G^K#]TTTG2?BL/ZC?49LTT?&+< U8? NFGJ1W32>D;4CCNVIDF65&G M!|4SB<3\*V.PT#/ONKI1 P" W= L:>R79A\*2NEPU;7W9)\$KW0M6??&ZKM;CS3 MB+O.43#U@ 2@ &8+E01732O64%0KDAJ;K]\$16KDJ(LB\1.6MI,WHQO8V2)^ M;=JQR9+O=3'GM14]:<2]2G-%=:=|T|U2 <4X>H<2VF2@N+,V.VLD3X4;N) MS5,XC\*^<.+!)J% -H96T+LG)XLL\*KXT3N1? Y+QGN&9/ F1&&+>5.O>ZJ+\_ M /N=%-.86Q!0XEM,=?GYL=L?&OPHW<7)REJ9RK,\* TV?&'7 \_LXONVFE(O\ MIG0AFO39\8=?^SB^I::4B\_RF=""G>4SL^@ 65 #J7ESV6BN=%GOBO/5N7+JK MD!F '5ZK.:8TIGHU62%)NYJ.)%V99Y:W6NU5Y,N0O3 ^#:=A2WL93QLEKG-1M^JG)XSUXT3D:S%&Z&&1OTAVW? GH%\_5?I4GJ:6\*9CPE78V\I3J8997K0:XJYP4Z;K|,I|NJO,> MU|JZ4?\ MW?&GLD15T3,-! @.B>JQ/4Q7\&+&U;7- ='O'=\$\*1I/&ULLD3/B M)6CJ D#,^ .G26;2K55="LK(ZOE4C'<C,TQ8;S07VWLK+74,GA=PY+M:O(Y.)>8|-91T M|;"D57#-&CD" T 60 M 9API\U) N3OXU-/&)\$NMKQ:/ M<\*\*CG6:"K?&KH7\*W/67+\*5+4M5D6TG4=#58(NRW%K- 6!&TD3W)M:(B>+DO M\*JY)SYY%3KI+QNJ9)2,3G2C<="X.QYCA8Z>IIJV2G1V:,WG>8D7E551\$7K51 M- 1AW]S]53QXMJJ:-56"6E MSX+&I\EO\UX^HFY-,8A@ +("A-T-^GFE:E) MDJL8KD1==W(5JV33NM+1S^8MC^BL1(B/Z/6.CP19&2-@K5&=DQ\*46NXTEUH8 MIRWSLGII4S:|B^CF7F.T9K|R< X\$|I|T<=7% GMIDWZ%.J9\*G:B\*=UNE % M\$;=Z? %0.DX,W0.1W8CD3T#F4\K0SWMC8Y|W(UC4S5RKDB(9VTQ8OBO)=H:& MV/WR@HU5\$>W@ED78JIS)P)UG!5UN.\DB9FKI!1(=%>Y\_,X0IH\*ENI5SN6H MF:O"USLLF]2(B=.9+@"\=)% #JV^X4MP2=:=DN\2O@E1%VL>U5145.+AV MB@|36/&.%L5W.V5L[J>JJ)]>E3? \$5KGJY&O9EQ9\:9Q[4 M72[BE(UIUI\*)\*C@UMX?K9]&MEGU'OA/!%]QA?TNN)&3OTCGI)-+W5?,B?): MWDXL^!\$X"DSS;)B,+|M\|SJB@IIWMU7R1->J/ MB^SI?>VJJ(Z>-48J\|/3:U>U\$,^Z,.1/P7BR1ESC?'3R9T]6Q4VQJB[|9 MU@H5DY5@=K=FM (.1\+M61K'(JL7D7D4SO/-(& M\*D6&%+BL+|FK30[RSK#/ MHS\$3E&.)V "R 9VTI\_GPSZ)' \$XO/! P":=D^@P?=M\*4TZ455/C5CX\*:5 MG;N0NS"37.PK9FO16N;10HJ\*F2HNHA2G>5IV>J "ZH ,SZ:/C M%N?ZL/W332=)^(P J-1G33%0UO=E7:^ J|KJ MY;ZNW/D-&%5I>C#/#-#BBT/HJ\N3D\:>9J>-\$|E3^:<90- #5701CBQ\)>M#31'L;84HL5VEU+5HC)V9N@G1/&C= -%XT\$QG9\$2 MSUI+O%?) L63W&@(:\*)4UDR5JHO\$5%YT5,C4D7^4SH0R5>< W:T7\*>BJJ\* M=9(ERUHV\*YKDXE143:BFM8O\MG0A%>FI]

NJ!4145%3-%V\* !EZ^4E7@+' MVO"QLT9AJ\_4.(K7%76V5'QN3QV9^-&[C:Y.)3HXW MPC08MMR05F<51'FL-0U,W1K  
#1>.-"D:K"6,L%5[ZBV-J7,3@J\*+-[7] P"3 M>'J5,BG6E:=I\$&>(I+F\*Z-N]545')(FQ5GIU:[L143T'Q-CW'-]18J!)FH[9  
ME0TJY\_6R54ZE)YX.5H1U53MJF4SIXTJ7M5[8M9-96IPKEPY',5!HEPAB&@O' M)>  
[^\QT:/A='[ +K2O553:O#R<:YEODO.42 E 5/NB/R#:OI+OX5+8\*LW0%/\_M-46.UMIX9)52I551C5=EX]\A6K9.:N]H%\_,5?  
I4GJ:6\*9HPQBS%.&[9W!;\*- M4@UUD]\I7.7-MWS, \*(S|&XB\*HB\$S#0(\*NT78PQ%?\03TM[@;3- MIG2-  
5\*=8 &1S43:OJEHEHG\*N \$@=6BN%+6R5,=+,R22FD6\*9B+M8Y.)4.T M49C>P8ML6,\*^ P!@;.Z&HDUT?  
2^J\U[.MO8J\$3.\$Q&5XROLEC='\*OKXW)D MYKDS14Y%0S9I=P]2X:Q6O+6N]05\$.5#8VK\_E.UE143FS3/- \*/4[[^)X&;O  
M-1T/=";-9\+T=GT:W#U'6L6\$\18]OR7&^I/%2.5%EJ)FZF;4^3&W^VQ/729S MLF(POG#55)78=M=7/\_G3TL4K\_P!9S\$5?  
6>B?\$\$3((X86HR\*-J.:U.!\$1,D0 5^S14 ? 9 end ""