

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

FORM S-3

REGISTRATION STATEMENT UNDER THE SECURITIES ACT OF 1933

**Blue Water Vaccines Inc.**

(Exact name of registrant as specified in its charter)

**Delaware**

(State or other jurisdiction of  
incorporation or organization)

**2834**

(Primary Standard Industrial  
Classification Code Number)

**83-2262816**

(I.R.S. Employer  
Identification Number)

**201 E. Fifth Street, Suite 1900  
Cincinnati, Ohio 45202  
(513) 620-4101**

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

**Joseph Hernandez  
c/o Blue Water Vaccines, Inc.  
201 E. Fifth Street, Suite 1900  
Cincinnati, Ohio 45202  
Telephone: (513) 620-4101**

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

Please send a copy of all communications to:

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Jessica Yuan, Esq.  
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1345 Avenue of the Americas  
New York, New York 10105-0302  
(212) 370-1300**

Approximate date of commencement proposed sale to the public: From time to time after the effective date of this Registration Statement.

If the only securities being registered on this Form are being offered pursuant to dividend or interest reinvestment plans, please check the following box.

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, other than securities offered only in connection with dividend or interest reinvestment plans, check the following box.

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

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

If this Form is a registration statement pursuant to General Instruction I.D. or a post-effective amendment thereto that shall become effective upon filing with the Commission pursuant to Rule 462(e) under the Securities Act, check the following box.

If this Form is a post-effective amendment to a registration statement filed pursuant to General Instruction I.D. filed to register additional securities or additional classes of securities pursuant to Rule 413(b) under the Securities Act, check the following box.

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

Large accelerated filer	<input type="checkbox"/>	Accelerated filer	<input type="checkbox"/>
Non-accelerated filer	<input checked="" type="checkbox"/>	Smaller reporting company	<input checked="" type="checkbox"/>
		Emerging growth company	<input checked="" type="checkbox"/>

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 7(a)(2)(B) of Securities Act.

Our shares of common stock have experienced extreme volatility in market prices and trading volume since listing. From February 18, 2022 (the date our shares were initially listed on Nasdaq) to the date hereof, the market price of our common stock has fluctuated from an intra-day low on Nasdaq of \$0.91 on November 9, 2022 to an intra-day high of \$90.90 per share on February 22, 2022. By comparison, our initial public offering, which closed on February 23, 2022, was conducted at \$9.00 per share. During this time, we have made various announcements regarding certain research developments and partnerships for our vaccine candidates. Notwithstanding the foregoing, since our initial public offering on February 18, 2022, there were no material recent publicly disclosed changes in the financial condition or results of operations of the Company, such as our earnings or revenue, that are consistent with or

related to the changes in our stock price. The trading price of our common stock has been, and may continue to be, subject to wide price fluctuations in response to various factors, many of which are beyond our control, including those described under the heading "Risk Factors" beginning on page 5 of this prospectus.

Investing in our common stock involves a high degree of risk. Please read "Risk Factors" beginning on page 5 of this prospectus.

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

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**The information in this prospectus is not complete and may be changed. We may not sell the securities until the Registration Statement filed with the Securities and Exchange Commission, of which this prospectus is a part, is effective. This prospectus is not an offer to sell these securities and is not soliciting an offer to buy these securities in any state where the offer or sale is not permitted.**

**SUBJECT TO COMPLETION, DATED MARCH 9, 2023**

**Preliminary Prospectus**



**\$100,000,000**

**COMMON STOCK  
PREFERRED STOCK  
PURCHASE CONTRACTS  
WARRANTS  
SUBSCRIPTION RIGHTS  
DEPOSITARY SHARES  
DEBT SECURITIES  
UNITS**

- common stock;
- preferred stock;
- purchase contracts;
- warrants to purchase our securities;
- subscription rights to purchase any of the foregoing securities;
- depositary shares;
- secured or unsecured debt securities consisting of notes, debentures or other evidences of indebtedness which may be senior debt securities, senior subordinated debt securities or subordinated debt securities, each of which may be convertible into equity securities; or
- units comprised of, or other combinations of, the foregoing securities.

We may offer and sell these securities separately or together, in one or more series or classes and in amounts, at prices and on terms described in one or more offerings. We may offer securities through underwriting syndicates managed or co-managed by one or more underwriters or dealers, through agents or directly to purchasers. The prospectus supplement for each offering of securities will describe in detail the plan of distribution for that offering. For general information about the distribution of securities offered, please see "Plan of Distribution" in this prospectus.

Each time our securities are offered, we will provide a prospectus supplement containing more specific information about the particular offering and attach it to this prospectus. The prospectus supplements may also add, update or change information contained in this prospectus. **This prospectus may not be used to offer or sell securities without a prospectus supplement which includes a description of the method and terms of this offering.**

Our common stock is listed on the Nasdaq Capital Market under the symbol "BWV." The last reported sale price of our common stock on the Nasdaq Capital Market on March 6, 2023 was \$1.16 per share. The aggregate market value of our outstanding common stock held by non-affiliates is \$11.7 million based on 15,911,868 shares of outstanding common stock on March 6, 2023. During the 12 calendar month period that ends on, and includes, the date of this prospectus, we have not offered and sold any of our securities pursuant to General Instruction I.B.6 of Form S-3.

If we decide to seek a listing of any preferred stock, purchase contracts, warrants, subscriptions rights, depositary shares, debt securities or units offered by this prospectus, the related prospectus supplement will disclose the exchange or market on which the securities will be listed, if any, or where we have made an application for listing, if any.

**Investing in our securities is highly speculative and involves a significant degree of risks. See "Risk Factors" beginning on page 5 and the risk factors in our most recent Annual Report on Form 10-K, which is incorporated by reference herein, as well as in any other recently filed quarterly or current reports and, if any, in the relevant prospectus supplement. We urge you to carefully read this prospectus and the accompanying prospectus supplement, together with the documents we incorporate by reference, describing the terms of these securities before investing.**

**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 March 9, 2023

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## ABOUT THIS PROSPECTUS

This prospectus is part of a registration statement on Form S-3 that we filed with the Securities and Exchange Commission, or SEC, utilizing a “shelf” registration process. Under this shelf registration process, we may offer and sell, either individually or in combination, in one or more offerings, any of the securities described in this prospectus, for total gross proceeds of up to \$100,000,000. This prospectus provides you with a general description of the securities we may offer. Each time we offer securities under this prospectus, we will provide a prospectus supplement to this prospectus that will contain more specific information about the terms of that offering. We may also authorize one or more free writing prospectuses to be provided to you that may contain material information relating to these offerings. The prospectus supplement and any related free writing prospectus that we may authorize to be provided to you may also add, update or change any of the information contained in this prospectus or in the documents that we have incorporated by reference into this prospectus.

We urge you to read carefully this prospectus, any applicable prospectus supplement and any free writing prospectuses we have authorized for use in connection with a specific offering, together with the information incorporated herein by reference as described under the heading “Incorporation of Documents by Reference,” before investing in any of the securities being offered. You should rely only on the information contained in, or incorporated by reference into, this prospectus and any applicable prospectus supplement, along with the information contained in any free writing prospectuses we have authorized for use in connection with a specific offering. We have not authorized anyone to provide you with different or additional information. This prospectus is an offer to sell only the securities offered hereby, but only under circumstances and in jurisdictions where it is lawful to do so.

The information appearing in this prospectus, any applicable prospectus supplement or any related free writing prospectus is accurate only as of the date on the front of the document and any information we have incorporated by reference is accurate only as of the date of the document incorporated by reference, regardless of the time of delivery of this prospectus, any applicable prospectus supplement or any related free writing prospectus, or any sale of a security.

This prospectus contains summaries of certain provisions contained in some of the documents described herein, but reference is made to the actual documents for complete information. All of the summaries are qualified in their entirety by the actual documents. Copies of some of the documents referred to herein have been filed, will be filed or will be incorporated by reference as exhibits to the registration statement of which this prospectus is a part, and you may obtain copies of those documents as described below under the section entitled “Where You Can Find Additional Information.”

This prospectus contains, or incorporates by reference, trademarks, tradenames, service marks and service names of Blue Water Vaccines Inc.

## CAUTIONARY NOTE REGARDING FORWARD LOOKING STATEMENTS

This prospectus and any accompanying prospectus supplement and the documents incorporated by reference herein may contain forward looking statements that involve risks and uncertainties. All statements other than statements of historical fact contained in this prospectus and any accompanying prospectus supplement and the documents incorporated by reference herein, including statements regarding future events, our future financial performance, business strategy, and plans and objectives of management for future operations, are forward-looking statements. In some cases, you can identify forward-looking statements by the words “may,” “might,” “will,” “could,” “would,” “should,” “expect,” “intend,” “plan,” “objective,” “anticipate,” “believe,” “estimate,” “predict,” “project,” “potential,” “continue” and “ongoing,” or the negative of these terms, or other comparable terminology intended to identify statements about the future, although not all forward-looking statements contain these words. These statements relate to future events or our future financial performance or condition and involve known and unknown risks, uncertainties and other factors that could cause our actual results, levels of activity, performance or achievement to differ materially from those expressed or implied by these forward-looking statements. These forward-looking statements include, but are not limited to, statements about:

- our projected financial position and estimated cash burn rate;
- our estimates regarding expenses, future revenues and capital requirements;
- our ability to continue as a going concern;
- our need to raise substantial additional capital to fund our operation;
- the success, cost and timing of our clinical trials;
- our dependence on third parties in the conduct of our clinical trials;
- our ability to obtain the necessary regulatory approvals to market and commercialize our product candidates;
- the ultimate impact of the ongoing COVID-19 pandemic, or any other health epidemic, on our business, our clinical trials, our research programs, healthcare systems or the global economy as a whole;
- the potential that results of pre-clinical and clinical trials indicate our current product candidates or any future product candidates we may seek to develop are unsafe or ineffective;
- the results of market research conducted by us or others;
- our ability to obtain and maintain intellectual property protection for our current product candidates;
- our ability to protect our intellectual property rights and the potential for us to incur substantial costs from lawsuits to enforce or protect our intellectual property rights;
- the possibility that a third party may claim we or our third-party licensors have infringed, misappropriated or otherwise violated their intellectual property rights and that we may incur substantial costs and be required to devote substantial time defending against claims against us;

- our reliance on third parties;
- the success of competing therapies and products that are or become available;
- our ability to expand our organization to accommodate potential growth and our ability to retain and attract key personnel;
- the potential for us to incur substantial costs resulting from product liability lawsuits against us and the potential for these product liability lawsuits to cause us to limit our commercialization of our product candidates;
- market acceptance of our product candidates, the size and growth of the potential markets for our current product candidates and any future product candidates we may seek to develop, and our ability to serve those markets; and
- the successful development of our commercialization capabilities, including sales and marketing capabilities.

These forward-looking statements are subject to a number of risks, uncertainties and assumptions, including those described in “Risk Factors.” Moreover, we operate in a highly regulated, very competitive and rapidly changing environment. New risks emerge from time to time. It is not possible for our management to predict all risks, nor can we assess the impact of all factors on our business or the extent to which any factor, or combination of factors, may cause actual results to differ materially from those contained in any forward-looking statements we may make. In light of these risks, uncertainties and assumptions, the forward-looking events and circumstances discussed in this prospectus may not occur and actual results could differ materially and adversely from those anticipated or implied in the forward-looking statements.

We have based these forward-looking statements largely on our current expectations and projections about future events and financial trends that we believe may affect our financial condition, results of operations, business strategy, short term and long term business operations, and financial needs. These forward-looking statements are subject to certain risks and uncertainties that could cause our actual results to differ materially from those reflected in the forward looking statements. Factors that could cause or contribute to such differences include, but are not limited to, those discussed in this prospectus and any accompanying prospectus or prospectus supplement, and in particular, the risks discussed below and under the heading “Risk Factors” and those discussed in other documents we file with the SEC, which are incorporated by reference herein. The following discussion should be read in conjunction with the financial statements for the fiscal years ended December 31, 2022 and 2021 and notes incorporated by reference herein. We undertake no obligation to revise or publicly release the results of any revision to these forward-looking statements, except as required by law. In light of these significant risks, uncertainties and assumptions, the forward-looking events and circumstances discussed in this prospectus and any accompanying prospectus or prospectus supplement may not occur and actual results could differ materially and adversely from those anticipated or implied in the forward-looking statement.

You should not place undue reliance on any forward-looking statement, each of which applies only as of the date of this prospectus, or any accompanying prospectus or prospectus supplement. Except as required by law, we undertake no obligation to update or revise publicly any of the forward-looking statements after the date of this prospectus to conform our statements to actual results or changed expectations. Any forward-looking statement you read in this prospectus, any accompanying prospectus, or any prospectus supplement or any document incorporated by reference reflects our current views with respect to future events and is subject to these and other risks, uncertainties and assumptions relating to our operations, operating results, growth strategy and liquidity. You should not place undue reliance on these forward-looking statements because such statements speak only as to the date when made. We assume no obligation to publicly update or revise these forward-looking statements for any reason, or to update the reasons actual results could differ materially from those anticipated in these forward-looking statements, even if new information becomes available in the future, except as otherwise required by applicable law. You are advised, however, to consult any further disclosures we make on related subjects in our reports on Forms 10-Q, 8-K and 10-K filed with the SEC. You should understand that it is not possible to predict or identify all risk factors. Consequently, you should not consider any such list to be a complete set of all potential risks or uncertainties.

## PROSPECTUS SUMMARY

*This summary highlights selected information contained elsewhere in this prospectus. This summary does not contain all the information that you should consider before investing in our Company. You should carefully read the entire prospectus, including all documents incorporated by reference herein. In particular, attention should be directed to our “Risk Factors,” “Information With Respect to the Company,” “Management’s Discussion and Analysis of Financial Condition and Results of Operations” and the financial statements and related notes thereto contained herein or otherwise incorporated by reference hereto, before making an investment decision.*

As used herein, and any amendment or supplement hereto, unless otherwise indicated, “we,” “us,” “our,” the “Company,” “Blue Water Vaccines,” “BWV” or similar terminology means Blue Water Vaccines Inc.

### Our Company

We are a biotechnology company focused on the research and development of transformational vaccines to prevent infectious diseases worldwide. We hold exclusive, global rights to novel technology licensed from renowned research institutions around the world, including St. Jude Children’s Research Hospital, the University of Oxford, Cincinnati Children’s Hospital Medical Center, and the University of Texas Health at San Antonio. We believe that our pipeline and vaccine platform are synergistic for developing next generation preventive vaccines to improve both health outcomes and quality of life globally.

We seek to develop vaccines that provide long-lasting immunity to harmful viral and bacterial pathogens that cause infections in patient populations with high unmet needs. Our most advanced vaccine candidate is a live-attenuated, intranasally delivered, serotype independent *Streptococcus pneumoniae* vaccine to prevent middle ear infections, also known as acute otitis media (AOM), and pneumococcal pneumonia. AOM is a significant burden globally, particularly in young children, and pneumococcal pneumonia primarily impacts the elderly population. Additionally, we believe that this attenuated bacterium can serve as a platform to protect against other infectious agents that cause acute otitis media, such as non-typeable *Haemophilus influenzae* and *Moraxella catarrhalis*, by anchoring antigens from these pathogens on the surface of BWV-201, our attenuated *Streptococcus pneumoniae* bacterial vaccine. We hold a global, exclusive license to this technology, which was generated from the laboratory of Jason Rosch, Ph.D., of St. Jude Children’s Research Hospital. Our influenza programs are based on technology developed by Sunetra Gupta, Ph.D. at the University of Oxford, for which we hold a global, exclusive license for use of epitopes of limited variability, ELVs, to develop novel influenza vaccine candidates. Identified through a proprietary computational research and discovery process, we believe a vaccine formulated with these epitopes from different influenza strains will produce a viable universal influenza vaccine candidate. We are exploring the development of these influenza ELVs utilizing our norovirus shell and protrusion (S&P) nanoparticle vaccine platform, licensed from Cincinnati Children’s Hospital Medical Center, or CHMC. We are also utilizing this platform to develop a vaccine for the prevention of gastroenteritis caused by norovirus or rotavirus, as well as novel vaccines for malaria and monkeypox. The final candidate in our vaccine pipeline is a live-attenuated, orally delivered vaccine to prevent Chlamydia, for which we have a global, exclusive license to this technology originated from the University of Texas Health at San Antonio. We leverage the expertise of each of our collaborators to pursue the discovery and development of vaccines for these diseases, each of which represent high unmet needs globally.

In addition, we have expertise in identifying business development opportunities for our platform vaccines technologies and portfolio. This allows for both internal pipeline expansion and the ability to generate non-dilutive revenue from potential licensing partners to utilize our discovery engine vaccine platform. There is potential for adjunctive or next generation therapeutic exploration to enhance current standard of care options.



Vaccination has been used as an effective method of protecting individuals against harmful diseases by utilizing the body’s natural defense system to develop resistance or immunity to infections (World Health Organization, <https://www.who.int/news-room/q-a-detail/herd-immunity-lockdowns-and-covid-19>). The body’s immune system naturally creates antibodies and cell-mediated immunity to defend against foreign pathogens. Vaccines introduce or present these foreign pathogens, prompting the body’s immune system produce a response protective against the pathogen without exposing the body to the relevant lethal or harmful infection (World Health Organization, <https://www.who.int/news-room/q-a-detail/herd-immunity-lockdowns-and-covid-19>). While vaccines are generally able to provide resistance against disease, many infectious diseases can evolve or mutate leading to shortcomings of traditional vaccines, such as yearly reformulations. We believe our vaccine candidates can provide an alternative to the current standards of care by harnessing durable and long-lived immune response to specific or multiple antigens.

The global vaccine market has recently experienced significant growth caused by rising awareness of the importance of immunization and vaccination benefits in emerging markets as well as by projects to fuel further global market expansion. For instance, The World Health Organization (WHO) has undertaken initiatives to increase immunization awareness through its Global Vaccine Action Plan and Global Immunization Vision and Strategy.

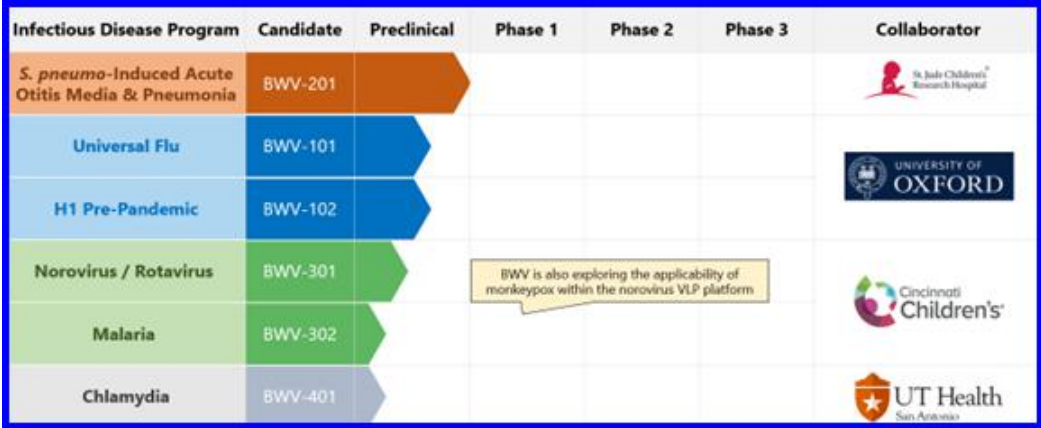
As such, market research professionals project the global vaccine market size to reach \$73.78 billion by 2028, representing a CAGR of 7.3% over the forecast period, driven by rising prevalence of infectious diseases, increasing government funding for vaccine production and growing emphasis on becoming immunized.

This market acceleration has been coupled with various strategic transactions in the sector, including consolidations and mergers and acquisitions in recent years. Major market participants have strategically acquired start-ups and mid-sized companies to broaden their products portfolios and service offerings. For instance, in February 2019, Bharat Biotech acquired Chiron Behring Vaccines, one of the leading manufacturers of rabies vaccines across the globe. Additionally, in October 2018, Emergent BioSolutions, a multinational specialty biopharmaceutical company, acquired PaxVax for \$270 million, and in July 2017 Sanofi acquired Protein Sciences for \$650 million. In the pneumococcal disease market specifically, for which we are targeting for our *Streptococcus pneumoniae* vaccine candidate, GlaxoSmithKline acquired Affinivax for up to \$3.3 billion in May 2022. The appetite of these companies to buttress their vaccine programs and pipelines reflects the increasing importance of vaccines in the healthcare sector, both nationally and worldwide.

The U.S. Centers for Disease Control, or CDC, its Advisory Committee on Immunization Practices, or ACIP, and similar international advisory bodies develop vaccine recommendations for both children and adults. New pediatric vaccines that receive ACIP preferred recommendations are almost universally adopted, and adult vaccines that receive a preferred recommendation are widely adopted. We believe that our vaccine candidates will be well-positioned to obtain these preferred recommendations, by virtue of their longer and more durable immunity, which could drive rapid and significant market adoption.

**Pipeline**

Our vaccine candidates are being developed in a manner that is scalable, designed to be cost-effective and provide long-term benefit to patients from infectious agents.



The FDA regulatory approval process is lengthy and time-consuming, and we may experience significant delays in the clinical development and regulatory approval of our vaccine candidates. Our vaccine candidates are in early stages of development and may fail in development or suffer delays that materially and adversely affect their commercial viability. We may be unable to complete development of or commercialize our vaccine candidates or experience significant delays in doing so due to regulatory or other uncertainties.

## **Our Vaccine Candidates**

### ***BWV-201: Streptococcus pneumoniae (S. pneumoniae) vaccine program***

We are developing BWV-201, licensed from St. Jude Children's Research Hospital, to prevent Acute Otitis Media, or AOM, in children and adults, a leading cause of hospital visits, prescription antibiotics and potentially permanent hearing loss. Based on information from the American Academy of Pediatrics, over 5 million cases of AOM are reported annually in the U.S., resulting in approximately 30 million medical care visits and over 10 million antibiotic prescriptions, representing approximately \$4.3 billion spent on treatment in the U.S. alone. AOM due to *S. pneumoniae* infections range from 30 to 50% of all AOM infections each year (Monsata 2012 2012; 7(4): e36226). In addition to AOM, we are exploring the potential for BWV-201 to protect against non-invasive pneumococcal pneumonia, or colonization of the bacteria within the lungs that has not spread to the blood or other major organs. According to the CDC, pneumococcal pneumonia leads to an estimated 150,000 hospitalizations each year in the US alone (CDC Fast Facts: Pneumococcal Disease) and while there are commercially available pneumococcal vaccines, efficacy rates against pneumococcal pneumonia are low (Berild 2020; 9(4): 259) and vaccines are serotype independent (CDC: Pneumococcal Disease). BWV-201 is a live attenuated serotype-independent intranasal vaccine candidate for *S. pneumoniae* induced AOM and pneumococcal pneumonia.

### ***BWV-101 and BWV-102: Influenza vaccine program***

The company's influenza vaccine programs are focused on developing transformational and novel influenza vaccines: BWV-101 for an influenza vaccine to provide protection against H1, H3 and Flu B infections; and BWV-102 for a H1 only vaccine. This program is licensed from the University of Oxford in which all relevant studies were performed to support our hypothesis. Our goal is to develop a vaccine that protects against all influenza strains that commonly infect humans by targeting specific parts of the influenza viruses, which are of limited variability across flu strains and induce a strong protective immune response. This POC will be leveraged to develop BWV-101 by studying the cross-reactivity of different flu strains, H1, H3 and influenza B. The BWV-101 vaccine candidate may potentially provide a therapeutic benefit that negates the need for annual vaccination, vaccine reformulation, and provide long-lasting broad protection against the flu to millions globally (Thompson et al. Nature Communications. 2018. 9:385).

### ***BWV Norovirus (NoV) S&P Nanoparticle Versatile Vaccine Platform***

#### *Our Approach to Stimulating the Immune System for Infectious Disease Protection*

Our S&P platform was co-invented by two researchers, Xi Jason Jiang, Ph.D., and Ming Tan, Ph.D., of the Division of Infectious Disease at the Cincinnati Children's Hospital Medical Center. The pre-clinical research conducted at CHMC provided encouraging data that supports further investigation and development of the platform for our vaccine candidates. The S&P platform combines two or more immunogenic components, a norovirus antigen plus at least one additional antigen, together creating novel constructs. The norovirus nanoparticle enhances immunogenicity of the inserted antigen. The S & P particles themselves also act as antigens, and are large enough to trigger an immune response to a foreign substance. By combining the norovirus nanoparticle with one or more antigens from other infectious disease(s), the immune system is stimulated to create antibodies to both the norovirus and the additional antigen(s). Currently, we are evaluating this platform to generate vaccine candidates for norovirus, rotavirus, malaria, monkeypox, and Marburg virus disease.

## *Key Elements of our Platform*

We are leveraging our disruptive norovirus nanoparticle platform to develop novel, broad-spectrum vaccines for adult and child infectious disease prevention by taking advantage of:

- *Flexible and Scalable discovery platform engine.* We believe we are able to design and create novel vaccines that are stable and scalable for broad spectrum prophylactics. Through this platform's adaptability, we may opportunistically expand our pipeline and potentially collaborate with third parties for additional vaccines, as well as therapeutics.
- *Cost-effective and Rapid Production of Novel Vaccines.* We are potentially able to reduce the cost and time to manufacture a vaccine candidate by utilizing an *E.coli* expression platform, compared to traditional vaccine production which uses other, longer production-time platforms, such as Chinese Hamster Ovary (CHO) cells. We have bioengineered these nanoparticles to be stable and effective, as determined through animal immunogenicity studies, using *E.coli* expression which may provide cost savings and efficiency compared to other VLPs needing a eukaryotic expression system. (Pharmaceutics 2019, 11, 472; doi:10.3390/pharmaceutics11090472).
- *Multi-antigen and Pathogen Capabilities.* One of the key features of our platform is its ability to carry multiple antigens at a time, thereby creating a multi-targeted vaccine. It also provides the opportunity to develop vaccines for protection against not only viral pathogens, but also bacterial and potentially parasitic and fungal pathogens.
- *Therapeutic potential.* We believe our platform may offer opportunities to develop non-infectious disease therapeutic products, for example being used as a carrier or vehicle to transport drugs to specific target locations.

### ***BWV-401: Chlamydia Vaccine***

We are developing a live attenuated, orally delivered chlamydia vaccine derived from a murine strain of chlamydia, *Chlamydia muridarum*, to protect individuals against chlamydia infection. By delivering this vaccine orally, BWV-401 may elicit transmucosal immunity and provide protection against chlamydia in the genital tract post-vaccination without altering the gut microbiota or the development of gut mucosal resident T cell responses to non-chlamydial infection. According to the Centers for Disease Control and Prevention, there were about 1.6 million new cases of chlamydia reported in 2020 in the United States and globally, the World Health Organization estimates about 129 million new cases each year. Additionally, given high estimations of asymptomatic cases and low availability of diagnostic testing in low- and middle-income countries, these annual estimates may be an underrepresentation. Currently, there is no vaccine available to prevent chlamydia infection, and the main treatment is through antibiotic regimens with the possibility of reinfection after antibiotics have treated the disease. If left undetected or untreated, Chlamydia represents a major cause of pelvic inflammatory disease and infertility in women. It is estimated that about 10 – 15% of women that experience untreated chlamydia develop pelvic inflammatory disease and face chronic pain or fertility problems later in life. Additionally, should women contract chlamydia during pregnancy or give birth with an active infection, newborns may develop eye infections or pneumonia resulting from the disease. We believe this vaccine candidate has the potential to protect individuals against this harmful disease and may eliminate the need for antibiotic prescriptions associated with treating chlamydia.

### ***BWV-301: Norovirus-rotavirus vaccine program***

We are developing a norovirus-rotavirus vaccine, BWV-301, to prevent gastroenteritis utilizing our S&P platform. Preclinical data from gnotobiotic pig studies have shown our vaccine can prevent severe gastroenteritis and reduces viral shedding. While rotavirus vaccines exist in the market, no norovirus vaccine is available to date. Our vaccine would protect people from two of the most globally prevalent viruses causing vomiting and diarrhea.

### ***BWV-302: Norovirus-malaria vaccine program***

Additionally, we are currently investigating a malaria vaccine, BWV-302, utilizing our norovirus S&P platform. The vaccine is designed to offer protection from both norovirus and malaria, infectious diseases that occur frequently together in geographic regions. The vaccine utilizes a protein identified on the surface of the plasmodium parasite being presented on the surface of the norovirus nanoparticle

## **Corporate Information**

Our principal executive offices are located at Blue Water Vaccines Inc., at 201 E. Fifth Street, Suite 1900, Cincinnati, OH 45202, attention: Corporate Secretary. Our telephone number is (513) 620-4101. Information about us is also available at our website at <http://www.bluewatervaccines.com>. The information on our website is not a part of, or incorporated in, this prospectus.

## RISK FACTORS

Investing in our securities is highly speculative and involves a high degree of risk. Before deciding whether to invest in our securities, you should carefully consider the risk factors we describe below, in any accompanying prospectus or any future prospectus supplement and in any related free writing prospectus for a specific offering of securities, as well as those incorporated by reference into this prospectus or such prospectus supplement. You should also carefully consider other information contained and incorporated by reference in this prospectus and any applicable prospectus supplement, including our financial statements and the related notes thereto incorporated by reference in this prospectus. The risks and uncertainties described herein and in the applicable prospectus supplement and our other filings with the SEC incorporated by reference herein are not the only ones we face. Additional risks and uncertainties not presently known to us or that we currently consider immaterial may also adversely affect us. If any of the described risks occur, our business, financial condition or results of operations could be materially harmed. In such case, the value of our securities could decline and you may lose all or part of your investment.

***We may engage in future acquisitions or strategic transactions which may require us to seek additional financing or financial commitments, increase our expenses and/or present significant distractions to our management.***

In the event we engage in an acquisition or strategic transaction, we may need to acquire additional financing (particularly, if the acquired entity is not cash flow positive or does not have significant cash on hand). Obtaining financing through the issuance or sale of additional equity and/or debt securities, if possible, may not be at favorable terms and may result in additional dilution to our current stockholders. Additionally, any such transaction may require us to incur non-recurring or other charges, may increase our near and long-term expenditures and may pose significant integration challenges or disrupt our management or business, which could adversely affect our operations and financial results. For example, an acquisition or strategic transaction may entail numerous operational and financial risks, including the risks outlined above and additionally:

- exposure to unknown liabilities;
- disruption of our business and diversion of our management's time and attention in order to develop acquired products or technologies;
- higher than expected acquisition and integration costs;
- write-downs of assets or goodwill or impairment charges;
- increased amortization expenses;
- difficulty and cost in combining the operations and personnel of any acquired businesses with our operations and personnel;
- impairment of relationships with key suppliers or customers of any acquired businesses due to changes in management and ownership; and
- inability to retain key employees of any acquired businesses.

Accordingly, although there can be no assurance that we will undertake or successfully complete any transactions of the nature described above, and any transactions that we do complete could have a material adverse effect on our business, results of operations, financial condition and prospects.

## USE OF PROCEEDS

Unless otherwise indicated in a prospectus supplement, we intend to use the net proceeds from these sales for general corporate purposes and working capital, which includes, without limitation, ongoing pre-clinical and clinical work, the development of new vaccine candidates, investing in or acquiring companies that are synergistic with or complementary to our technologies, licensing activities related to our current and future vaccine candidates, the development of emerging technologies, investing in or acquiring companies that are developing emerging technologies, or the acquisition of other businesses. The amounts and timing of these expenditures will depend on numerous factors, including the development of our current business initiatives.

## DIVIDEND POLICY

We have never paid or declared any cash dividends on our common stock, and we do not anticipate paying any cash dividends on our common stock in the foreseeable future. We intend to retain all available funds and any future earnings to fund the development and expansion of our business. Any future determination to pay dividends will be at the discretion of our board of directors and will depend upon a number of factors, including our results of operations, financial condition, future prospects, contractual restrictions, restrictions imposed by applicable law and other factors our board of directors deems relevant. Our future ability to pay cash dividends on our stock may also be limited by the terms of any future debt or preferred securities or future credit facility.

## PLAN OF DISTRIBUTION

We may sell the securities from time to time to or through underwriters or dealers, through agents, or directly to one or more purchasers. A distribution of the securities offered by this prospectus may also be effected through the issuance of derivative securities, including without limitation, warrants, rights to purchase and subscriptions. In addition, the manner in which we may sell some or all of the securities covered by this prospectus includes, without limitation, through:

- a block trade in which a broker-dealer will attempt to sell as agent, but may position or resell a portion of the block, as principal, in order to facilitate the transaction;
- purchases by a broker-dealer, as principal, and resale by the broker-dealer for its account; or
- ordinary brokerage transactions and transactions in which a broker solicits purchasers.

A prospectus supplement or supplements with respect to each series of securities will describe the terms of the offering, including, to the extent applicable:

- the terms of the offering;
- the name or names of the underwriters or agents and the amounts of securities underwritten or purchased by each of them, if any;
- the public offering price or purchase price of the securities or other consideration therefor, and the proceeds to be received by us from the sale;
- any delayed delivery requirements;
- any over-allotment options under which underwriters may purchase additional securities from us;
- any underwriting discounts or agency fees and other items constituting underwriters' or agents' compensation;
- any discounts or concessions allowed or re-allowed or paid to dealers; and
- any securities exchange or market on which the securities may be listed.

The offer and sale of the securities described in this prospectus by us, the underwriters or the third parties described above may be effected from time to time in one or more transactions, including privately negotiated transactions, either:

- at a fixed price or prices, which may be changed;
- in an "at the market" offering within the meaning of Rule 415(a)(4) of the Securities Act of 1933, as amended, or the Securities Act;
- at prices related to such prevailing market prices; or
- at negotiated prices.

Only underwriters named in the prospectus supplement will be underwriters of the securities offered by the prospectus supplement.

## **Underwriters and Agents; Direct Sales**

If underwriters are used in a sale, they will acquire the offered securities for their own account and may resell the offered securities from time to time in one or more transactions, including negotiated transactions, at a fixed public offering price or at varying prices determined at the time of sale. We may offer the securities to the public through underwriting syndicates represented by managing underwriters or by underwriters without a syndicate.

Unless the prospectus supplement states otherwise, the obligations of the underwriters to purchase the securities will be subject to the conditions set forth in the applicable underwriting agreement. Subject to certain conditions, the underwriters will be obligated to purchase all of the securities offered by the prospectus supplement, other than securities covered by any over-allotment option. Any public offering price and any discounts or concessions allowed or re-allowed or paid to dealers may change from time to time. We may use underwriters with whom we have a material relationship. We will describe in the prospectus supplement, naming the underwriter, the nature of any such relationship.

We may sell securities directly or through agents we designate from time to time. We will name any agent involved in the offering and sale of securities, and we will describe any commissions we will pay the agent in the prospectus supplement. Unless the prospectus supplement states otherwise, our agent will act on a best-efforts basis for the period of its appointment.

We may authorize agents or underwriters to solicit offers by certain types of institutional investors to purchase securities from us at the public offering price set forth in the prospectus supplement pursuant to delayed delivery contracts providing for payment and delivery on a specified date in the future. We will describe the conditions to these contracts and the commissions we must pay for solicitation of these contracts in the prospectus supplement.

## **Dealers**

We may sell the offered securities to dealers as principals. The dealer may then resell such securities to the public either at varying prices to be determined by the dealer or at a fixed offering price agreed to with us at the time of resale.

## **Institutional Purchasers**

We may authorize agents, dealers or underwriters to solicit certain institutional investors to purchase offered securities on a delayed delivery basis pursuant to delayed delivery contracts providing for payment and delivery on a specified future date. The applicable prospectus supplement or other offering materials, as the case may be, will provide the details of any such arrangement, including the offering price and commissions payable on the solicitations.

We will enter into such delayed contracts only with institutional purchasers that we approve. These institutions may include commercial and savings banks, insurance companies, pension funds, investment companies and educational and charitable institutions.

## **Indemnification; Other Relationships**

We may provide agents, underwriters, dealers and remarketing firms with indemnification against certain civil liabilities, including liabilities under the Securities Act, or contribution with respect to payments that the agents or underwriters may make with respect to these liabilities. Agents, underwriters, dealers and remarketing firms, and their affiliates, may engage in transactions with, or perform services for, us in the ordinary course of business. This includes commercial banking and investment banking transactions.

## **Market-Making; Stabilization and Other Transactions**

There is currently no market for any of the offered securities, other than our common stock, which is quoted on the Nasdaq Capital Market. If the offered securities are traded after their initial issuance, they may trade at a discount from their initial offering price, depending upon prevailing interest rates, the market for similar securities and other factors. While it is possible that an underwriter could inform us that it intends to make a market in the offered securities, such underwriter would not be obligated to do so, and any such market-making could be discontinued at any time without notice. Therefore, no assurance can be given as to whether an active trading market will develop for the offered securities. We have no current plans for listing of the debt securities, preferred stock, warrants or subscription rights on any securities exchange or quotation system; any such listing with respect to any particular debt securities, preferred stock, warrants or subscription rights will be described in the applicable prospectus supplement or other offering materials, as the case may be.

Any underwriter may engage in over-allotment, stabilizing transactions, short-covering transactions and penalty bids in accordance with Regulation M under the Securities Exchange Act of 1934, as amended, or the Exchange Act. Over-allotment involves sales in excess of the offering size, which create a short position. Stabilizing transactions permit bids to purchase the underlying security so long as the stabilizing bids do not exceed a specified maximum price. Syndicate-covering or other short-covering transactions involve purchases of the securities, either through exercise of the over-allotment option or in the open market after the distribution is completed, to cover short positions. Penalty bids permit the underwriters to reclaim a selling concession from a dealer when the securities originally sold by the dealer are purchased in a stabilizing or covering transaction to cover short positions. Those activities may cause the price of the securities to be higher than it would otherwise be. If commenced, the underwriters may discontinue any of the activities at any time.

Any underwriters or agents that are qualified market makers on the Nasdaq Capital Market may engage in passive market making transactions in our common stock on the Nasdaq Capital Market in accordance with Regulation M under the Exchange Act, during the business day prior to the pricing of the offering, before the commencement of offers or sales of our common stock. Passive market makers must comply with applicable volume and price limitations and must be identified as passive market makers. In general, a passive market maker must display its bid at a price not in excess of the highest independent bid for such security; if all independent bids are lowered below the passive market maker's bid, however, the passive market maker's bid must then be lowered when certain purchase limits are exceeded. Passive market making may stabilize the market price of the securities at a level above that which might otherwise prevail in the open market and, if commenced, may be discontinued at any time.

## **Fees and Commissions**

If 5% or more of the net proceeds of any offering of securities made under this prospectus will be received by a FINRA member participating in the offering or affiliates or associated persons of such FINRA member, the offering will be conducted in accordance with FINRA Rule 5121.

## **DESCRIPTION OF SECURITIES WE MAY OFFER**

### **General**

This prospectus describes the general terms of our capital stock. The following description is not complete and may not contain all the information you should consider before investing in our capital stock. For a more detailed description of these securities, you should read the applicable provisions of Delaware law and our amended and restated certificate of incorporation ("Amended and Restated Certificate of Incorporation") and our amended and restated bylaws ("Amended and Restated Certificate of Bylaws"). When we offer to sell a particular series of these securities, we will describe the specific terms of the series in a supplement to this prospectus. Accordingly, for a description of the terms of any series of securities, you must refer to both the prospectus supplement relating to that series and the description of the securities described in this prospectus. To the extent the information contained in the prospectus supplement differs from this summary description, you should rely on the information in the prospectus supplement.

The total number of shares of capital stock we are authorized to issue is 260,000,000 shares, of which (a) 250,000,000 are common stock and (b) 10,000,000 are preferred stock.

We, directly or through agents, dealers or underwriters designated from time to time, may offer, issue and sell, together or separately, up to \$100,000,000 in the aggregate of:

- common stock;
- preferred stock;
- purchase contracts;
- warrants to purchase our securities;
- subscription rights to purchase our securities;
- depositary shares;
- secured or unsecured debt securities consisting of notes, debentures or other evidences of indebtedness which may be senior debt securities, senior subordinated debt securities or subordinated debt securities, each of which may be convertible into equity securities; or
- units comprised of, or other combinations of, the foregoing securities.

We may issue the debt securities as exchangeable for or convertible into shares of common stock, preferred stock or other securities that may be sold by us pursuant to this prospectus or any combination of the foregoing. The preferred stock may also be exchangeable for and/or convertible into shares of common stock, another series of preferred stock or other securities that may be sold by us pursuant to this prospectus or any combination of the foregoing. When a particular series of securities is offered, a supplement to this prospectus will be delivered with this prospectus, which will set forth the terms of the offering and sale of the offered securities.



## Common Stock

As of March 6, 2023, there were 15,911,868 and 16,371,597 shares of common stock issued and outstanding, respectively, held of record by approximately 29 stockholders. Subject to preferential rights with respect to any outstanding preferred stock, all outstanding shares of common stock are of the same class and have equal rights and attributes. Under the terms of our Amended and Restated Certificate of Incorporation, holders of our common stock are entitled to one vote for each share held on all matters submitted to a vote of stockholders, including the election of directors, and do not have cumulative voting rights. The holders of outstanding shares of common stock are entitled to receive dividends out of assets or funds legally available for the payment of dividends of such times and in such amounts as our board of directors from time to time may determine. Our common stock is not entitled to pre-emptive rights and is not subject to conversion or redemption. Upon liquidation, dissolution or winding up of our company, the assets legally available for distribution to stockholders are distributable ratably among the holders of our common stock after payment of liquidation preferences, if any, on any outstanding payment of other claims of creditors. The rights, preferences and privileges of holders of common stock are subject to and may be adversely affected by the rights of the holders of shares of any series of preferred stock that we may designate and issue in the future.

## Preferred Stock

Our Amended and Restated Certificate of Incorporation empowers our board of directors, without further action by our stockholders, to establish and issue up to 10,000,000 shares of preferred stock in one or more class or series, which preferred stock may be offered by this prospectus and supplements thereto. As of March 6, 2023, no shares of preferred stock were designated or outstanding.

We will fix the rights, preferences, privileges and restrictions of the preferred stock of each series in the certificate of designation relating to that series. We will file as an exhibit to the registration statement of which this prospectus is a part, or will incorporate by reference from a current report on Form 8-K that we file with the SEC, the form of any certificate of designation that describes the terms of the series of preferred stock we are offering before the issuance of the related series of preferred stock. This description will include any or all of the following, as required:

- the title and stated value;
- the number of shares we are offering;
- the liquidation preference per share;
- the purchase price;
- the dividend rate, period and payment date and method of calculation for dividends;
- whether dividends will be cumulative or non-cumulative and, if cumulative, the date from which dividends will accumulate;
- any contractual limitations on our ability to declare, set aside or pay any dividends;
- the procedures for any auction and remarketing, if any;
- the provisions for a sinking fund, if any;
- the provisions for redemption or repurchase, if applicable, and any restrictions on our ability to exercise those redemption and repurchase rights;
- any listing of the preferred stock on any securities exchange or market;
- whether the preferred stock will be convertible into our common stock, and, if applicable, the conversion price, or how it will be calculated, and the conversion period;
- whether the preferred stock will be exchangeable into debt securities, and, if applicable, the exchange price, or how it will be calculated, and the exchange period;
- voting rights, if any, of the preferred stock;

- preemptive rights, if any;
- restrictions on transfer, sale or other assignment, if any;
- whether interests in the preferred stock will be represented by depositary shares;
- a discussion of any material or special United States federal income tax considerations applicable to the preferred stock;
- the relative ranking and preferences of the preferred stock as to dividend rights and rights if we liquidate, dissolve or wind up our affairs;
- any limitations on issuance of any class or series of preferred stock ranking senior to or on a parity with the series of preferred stock as to dividend rights and rights if we liquidate, dissolve or wind up our affairs; and
- any other specific terms, preferences, rights or limitations of, or restrictions on, the preferred stock.

If we issue shares of preferred stock under this prospectus, after receipt of payment therefor, the shares will be fully paid and non-assessable.

The Delaware General Corporation Law provides that the holders of preferred stock will have the right to vote separately as a class if the amendment would increase or decrease the aggregate number of authorized shares of such class, increase or decrease the par value of the shares of such class, or alter or change the powers, preferences, or special rights of the shares of such class so as to affect them adversely. This right is in addition to any voting rights provided for in the applicable certificate of designation.

Our board of directors may authorize the issuance of preferred stock with voting or conversion rights that could adversely affect the voting power or other rights of the holders of our common stock. Preferred stock could be issued quickly with terms designed to delay or prevent a change in control of our Company or make removal of management more difficult. Additionally, the issuance of preferred stock could have the effect of decreasing the market price of our common stock.

#### **Purchase Contracts**

We may issue purchase contracts, representing contracts obligating holders to purchase from us, and us to sell to the holders, a specific or varying number of common stock, preferred stock, warrants, depositary shares, debt securities, warrants or any combination of the above, at a future date or dates. Alternatively, the purchase contracts may obligate us to purchase from holders, and obligate holders to sell to us, a specific or varying number of common stock, preferred stock, warrants, depositary shares, debt securities, or any combination of the above. The price of the securities and other property subject to the purchase contracts may be fixed at the time the purchase contracts are issued or may be determined by reference to a specific formula set forth in the purchase contracts.

The purchase contracts may be issued separately or as a part of a unit that consists of (a) a purchase contract and (b) one or more of the other securities that may be sold by us pursuant to this prospectus or any combination of the foregoing, which may secure the holders' obligations to purchase the securities under the purchase contract. The purchase contracts may require us to make periodic payments to the holders or require the holders to make periodic payments to us. These payments may be unsecured or prefunded and may be paid on a current or on a deferred basis. The purchase contracts may require holders to secure their obligations under the contracts in a manner specified in the applicable prospectus supplement.

We will file as exhibits to the registration statement of which this prospectus is a part, or will incorporate by reference from a current report on Form 8-K that we file with the SEC, forms of the purchase contracts and purchase contract agreement, if any. The applicable prospectus supplement will describe the terms of any purchase contracts in respect of which this prospectus is being delivered, including, to the extent applicable, the following:

- whether the purchase contracts obligate the holder or us to purchase or sell, or both purchase and sell, the securities subject to purchase under the purchase contract, and the nature and amount of each of those securities, or the method of determining those amounts;
- whether the purchase contracts are to be prepaid or not;
- whether the purchase contracts are to be settled by delivery, or by reference or linkage to the value, performance or level of the securities subject to purchase under the purchase contract;
- any acceleration, cancellation, termination or other provisions relating to the settlement of the purchase contracts; and
- whether the purchase contracts will be issued in fully registered or global form.

## Warrants

We may issue warrants to purchase our securities or other rights, including rights to receive payment in cash or securities based on the value, rate or price of one or more specified commodities, currencies, securities or indices, or any combination of the foregoing. Warrants may be issued independently or together with any other securities that may be sold by us pursuant to this prospectus or any combination of the foregoing and may be attached to, or separate from, such securities. To the extent warrants that we issue are to be publicly-traded, each series of such warrants will be issued under a separate warrant agreement to be entered into between us and a warrant agent.

We will file as exhibits to the registration statement of which this prospectus is a part, or will incorporate by reference from a current report on Form 8-K that we file with the SEC, forms of the warrant and warrant agreement, if any. The prospectus supplement relating to any warrants that we may offer will contain the specific terms of the warrants and a description of the material provisions of the applicable warrant agreement, if any. These terms may include the following:

- the title of the warrants;
- the price or prices at which the warrants will be issued;
- the designation, amount and terms of the securities or other rights for which the warrants are exercisable;
- the designation and terms of the other securities, if any, with which the warrants are to be issued and the number of warrants issued with each other security;
- the aggregate number of warrants;
- any provisions for adjustment of the number or amount of securities receivable upon exercise of the warrants or the exercise price of the warrants;
- the price or prices at which the securities or other rights purchasable upon exercise of the warrants may be purchased;
- if applicable, the date on and after which the warrants and the securities or other rights purchasable upon exercise of the warrants will be separately transferable;
- a discussion of any material U.S. federal income tax considerations applicable to the exercise of the warrants;
- the date on which the right to exercise the warrants will commence, and the date on which the right will expire;
- the maximum or minimum number of warrants that may be exercised at any time;
- information with respect to book-entry procedures, if any; and
- any other terms of the warrants, including terms, procedures and limitations relating to the exchange and exercise of the warrants.

*Exercise of Warrants.* Each warrant will entitle the holder of warrants to purchase the amount of securities or other rights, at the exercise price stated or determinable in the prospectus supplement for the warrants. Warrants may be exercised at any time up to the close of business on the expiration date shown in the applicable prospectus supplement, unless otherwise specified in such prospectus supplement. After the close of business on the expiration date, if applicable, unexercised warrants will become void. Warrants may be exercised in the manner described in the applicable prospectus supplement. When the warrant holder makes the payment and properly completes and signs the warrant certificate at the corporate trust office of the warrant agent, if any, or any other office indicated in the prospectus supplement, we will, as soon as possible, forward the securities or other rights that the warrant holder has purchased. If the warrant holder exercises less than all of the warrants represented by the warrant certificate, we will issue a new warrant certificate for the remaining warrants.

### **Subscription Rights**

We may issue rights to purchase our securities. The rights may or may not be transferable by the persons purchasing or receiving the rights. In connection with any rights offering, we may enter into a standby underwriting or other arrangement with one or more underwriters or other persons pursuant to which such underwriters or other persons would purchase any offered securities remaining unsubscribed for after such rights offering. In connection with a rights offering to holders of our capital stock a prospectus supplement will be distributed to such holders on the record date for receiving rights in the rights offering set by us.

We will file as exhibits to the registration statement of which this prospectus is a part, or will incorporate by reference from a current report on Form 8-K that we file with the SEC, forms of the subscription rights, standby underwriting agreement or other agreements, if any. The prospectus supplement relating to any rights that we offer will include specific terms relating to the offering, including, among other matters:

- the date of determining the security holders entitled to the rights distribution;
- the aggregate number of rights issued and the aggregate amount of securities purchasable upon exercise of the rights;
- the exercise price;
- the conditions to completion of the rights offering;
- the date on which the right to exercise the rights will commence and the date on which the rights will expire; and
- any applicable federal income tax considerations.

Each right would entitle the holder of the rights to purchase the principal amount of securities at the exercise price set forth in the applicable prospectus supplement. Rights may be exercised at any time up to the close of business on the expiration date for the rights provided in the applicable prospectus supplement. After the close of business on the expiration date, all unexercised rights will become void.

Holders may exercise rights as described in the applicable prospectus supplement. Upon receipt of payment and the rights certificate properly completed and duly executed at the corporate trust office of the rights agent, if any, or any other office indicated in the prospectus supplement, we will, as soon as practicable, forward the securities purchasable upon exercise of the rights. If less than all of the rights issued in any rights offering are exercised, we may offer any unsubscribed securities directly to persons other than stockholders, to or through agents, underwriters or dealers or through a combination of such methods, including pursuant to standby underwriting arrangements, as described in the applicable prospectus supplement.

## Depository Shares

General. We may offer fractional shares of preferred stock, rather than full shares of preferred stock. If we decide to offer fractional shares of our preferred stock, we will issue receipts for depository shares. Each depository share will represent a fraction of a share of a particular series of our preferred stock, and the applicable prospectus supplement will indicate that fraction. The shares of preferred stock represented by depository shares will be deposited under a deposit agreement between us and a depository that is a bank or trust company that meets certain requirements and is selected by us. The depository will be specified in the applicable prospectus supplement. Each owner of a depository share will be entitled to all of the rights and preferences of the preferred stock represented by the depository share.

The depository shares will be evidenced by depository receipts issued pursuant to the deposit agreement. Depository receipts will be distributed to those persons purchasing the fractional shares of our preferred stock in accordance with the terms of the offering. We will file as exhibits to the registration statement of which this prospectus is a part, or will incorporate by reference from a current report on Form 8-K that we file with the SEC, forms of the deposit agreement, form of certificate of designation of underlying preferred stock, form of depository receipts and any other related agreements.

Dividends and Other Distributions. The depository will distribute all cash dividends or other cash distributions received by it in respect of the preferred stock to the record holders of depository shares relating to such preferred shares in proportion to the numbers of depository shares held on the relevant record date.

In the event of a distribution other than in cash, the depository will distribute securities or property received by it to the record holders of depository shares in proportion to the numbers of depository shares held on the relevant record date, unless the depository determines that it is not feasible to make such distribution. In that case, the depository may make the distribution by such method as it deems equitable and practicable. One such possible method is for the depository to sell the securities or property and then distribute the net proceeds from the sale as provided in the case of a cash distribution.

Redemption of Depository Shares. Whenever we redeem the preferred stock, the depository will redeem a number of depository shares representing the same number of shares of preferred stock so redeemed. If fewer than all of the depository shares are to be redeemed, the depository shares to be redeemed will be selected by lot, pro rata or by any other equitable method as the depository may determine.

Voting of Underlying Shares. Upon receipt of notice of any meeting at which the holders of our preferred stock of any series are entitled to vote, the depository will mail the information contained in the notice of the meeting to the record holders of the depository shares relating to that series of preferred stock. Each record holder of the depository shares on the record date will be entitled to instruct the depository as to the exercise of the voting rights represented by the number of shares of preferred stock underlying the holder's depository shares. The depository will endeavor, to the extent it is practical to do so, to vote the number of whole shares of preferred stock underlying such depository shares in accordance with such instructions. We will agree to take all action that the depository may deem reasonably necessary in order to enable the depository to do so. To the extent the depository does not receive specific instructions from the holders of depository shares relating to such preferred shares, it will abstain from voting such shares of preferred stock.

Withdrawal of Shares. Upon surrender of depository receipts representing any number of whole shares at the depository's office, unless the related depository shares previously have been called for redemption, the holder of the depository shares evidenced by the depository receipts will be entitled to delivery of the number of whole shares of the related series of preferred stock and all money and other property, if any, underlying such depository shares. However, once such an exchange is made, the preferred stock cannot thereafter be re-deposited in exchange for depository shares. Holders of depository shares will be entitled to receive whole shares of the related series of preferred stock on the basis set forth in the applicable prospectus supplement. If the depository receipts delivered by the holder evidence a number of depository shares representing more than the number of whole shares of preferred stock of the related series to be withdrawn, the depository will deliver to the holder at the same time a new depository receipt evidencing the excess number of depository shares.

**Amendment and Termination of Depositary Agreement.** The form of depositary receipt evidencing the depositary shares and any provision of the applicable depositary agreement may at any time be amended by agreement between us and the depositary. We may, with the consent of the depositary, amend the depositary agreement from time to time in any manner that we desire. However, if the amendment would materially and adversely alter the rights of the existing holders of depositary shares, the amendment would need to be approved by the holders of at least a majority of the depositary shares then outstanding.

The depositary agreement may be terminated by us or the depositary if:

- all outstanding depositary shares have been redeemed; or
- there has been a final distribution in respect of the shares of preferred stock of the applicable series in connection with our liquidation, dissolution or winding up and such distribution has been made to the holders of depositary receipts.

**Resignation and Removal of Depositary.** The depositary may resign at any time by delivering to us notice of its election to do so. We may remove a depositary at any time. Any resignation or removal will take effect upon the appointment of a successor depositary and its acceptance of appointment.

**Charges of Depositary.** We will pay all transfer and other taxes and governmental charges arising solely from the existence of any depositary arrangements. We will pay all charges of each depositary in connection with the initial deposit of the preferred shares of any series, the initial issuance of the depositary shares, any redemption of such preferred shares and any withdrawals of such preferred shares by holders of depositary shares. Holders of depositary shares will be required to pay any other transfer taxes.

**Notices.** Each depositary will forward to the holders of the applicable depositary shares all notices, reports and communications from us which are delivered to such depositary and which we are required to furnish the holders of the preferred stock represented by such depositary shares.

**Miscellaneous.** The depositary agreement may contain provisions that limit our liability and the liability of the depositary to the holders of depositary shares. Both the depositary and we are also entitled to an indemnity from the holders of the depositary shares prior to bringing, or defending against, any legal proceeding. We or any depositary may rely upon written advice of counsel or accountants, or information provided by persons presenting preferred shares for deposit, holders of depositary shares or other persons believed by us to be competent and on documents believed by us or them to be genuine.

## **Debt Securities**

We may issue debt securities and incur additional indebtedness other than through the offering of debt securities pursuant to this prospectus. As used in this prospectus, the term “debt securities” means the debentures, notes, bonds and other evidences of indebtedness that we may issue from time to time. The debt securities will either be senior debt securities, senior subordinated debt or subordinated debt securities. We may also issue convertible debt securities. Debt securities may be issued under an indenture (which we refer to herein as an Indenture), which are contracts entered into between us and a trustee to be named therein. The form of Indenture has been filed as an exhibit to the registration statement of which this prospectus forms a part. It is likely that convertible debt securities will not be issued under an Indenture.

The debt securities may be fully and unconditionally guaranteed on a secured or unsecured senior or subordinated basis by one or more guarantors, if any. The obligations of any guarantor under its guarantee will be limited as necessary to prevent that guarantee from constituting a fraudulent conveyance under applicable law. In the event that any series of debt securities will be subordinated to other indebtedness that we have outstanding or may incur, the terms of the subordination will be set forth in the prospectus supplement relating to the subordinated debt securities.

We may issue debt securities from time to time in one or more series, in each case with the same or various maturities, at par or at a discount. Unless indicated in a prospectus supplement, we may issue additional debt securities of a particular series without the consent of the holders of the debt securities of such series outstanding at the time of the issuance. Any such additional debt securities, together with all other outstanding debt securities of that series, will constitute a single series of debt securities under the applicable Indenture and will be equal in ranking.

Should an Indenture relate to unsecured indebtedness, in the event of a bankruptcy or other liquidation event involving a distribution of assets to satisfy our outstanding indebtedness or an event of default under a loan agreement relating to secured indebtedness of our company or its subsidiaries, the holders of such secured indebtedness, if any, would be entitled to receive payment of principal and interest prior to payments on the unsecured indebtedness issued under an Indenture.

Each prospectus supplement will describe the terms relating to the specific series of debt securities. These terms will include some or all of the following:

- the title of debt securities and whether the debt securities are senior or subordinated;
- any limit on the aggregate principal amount of debt securities of such series;
- the percentage of the principal amount at which the debt securities of any series will be issued;
- the ability to issue additional debt securities of the same series;
- the purchase price for the debt securities and the denominations of the debt securities;
- the specific designation of the series of debt securities being offered;
- the maturity date or dates of the debt securities and the date or dates upon which the debt securities are payable and the rate or rates at which the debt securities of the series shall bear interest, if any, which may be fixed or variable, or the method by which such rate shall be determined;
- the basis for calculating interest;
- the date or dates from which any interest will accrue or the method by which such date or dates will be determined;
- the duration of any deferral period, including the period during which interest payment periods may be extended;
- whether the amount of payments of principal of (and premium, if any) or interest on the debt securities may be determined with reference to any index, formula or other method, such as one or more currencies, commodities, equity indices or other indices, and the manner of determining the amount of such payments;
- the dates on which we will pay interest on the debt securities and the regular record date for determining who is entitled to the interest payable on any interest payment date;
- the place or places where the principal of (and premium, if any) and interest on the debt securities will be payable, where any securities may be surrendered for registration of transfer, exchange or conversion, as applicable, and notices and demands may be delivered to or upon us pursuant to the applicable Indenture;
- the rate or rates of amortization of the debt securities;
- any terms for the attachment to the debt securities of warrants, options or other rights to purchase or sell our securities;
- if the debt securities will be secured by any collateral and, if so, a general description of the collateral and the terms and provisions of such collateral security, pledge or other agreements;
- if we possess the option to do so, the periods within which and the prices at which we may redeem the debt securities, in whole or in part, pursuant to optional redemption provisions, and the other terms and conditions of any such provisions;
- our obligation or discretion, if any, to redeem, repay or purchase debt securities by making periodic payments to a sinking fund or through an analogous provision or at the option of holders of the debt securities, and the period or periods within which and the price or prices at which we will redeem, repay or purchase the debt securities, in whole or in part, pursuant to such obligation, and the other terms and conditions of such obligation;
- the terms and conditions, if any, regarding the option or mandatory conversion or exchange of debt securities;
- the period or periods within which, the price or prices at which and the terms and conditions upon which any debt securities of the series may be redeemed, in whole or in part at our option and, if other than by a board resolution, the manner in which any election by us to redeem the debt securities shall be evidenced;
- any restriction or condition on the transferability of the debt securities of a particular series;
- the portion, or methods of determining the portion, of the principal amount of the debt securities which we must pay upon the acceleration of the maturity of the debt securities in connection with any event of default;
- the currency or currencies in which the debt securities will be denominated and in which principal, any premium and any interest will or may be payable or a description of any units based on or relating to a currency or currencies in which the debt securities will be denominated;

- provisions, if any, granting special rights to holders of the debt securities upon the occurrence of specified events;
- any deletions from, modifications of or additions to the events of default or our covenants with respect to the applicable series of debt securities, and whether or not such events of default or covenants are consistent with those contained in the applicable Indenture;
- any limitation on our ability to incur debt, redeem stock, sell our assets or other restrictions;
- the application, if any, of the terms of the applicable Indenture relating to defeasance and covenant defeasance (which terms are described below) to the debt securities;
- what subordination provisions will apply to the debt securities
- the terms, if any, upon which the holders may convert or exchange the debt securities into or for our securities or property;
- whether we are issuing the debt securities in whole or in part in global form;
- any change in the right of the trustee or the requisite holders of debt securities to declare the principal amount thereof due and payable because of an event of default;
- the depository for global or certificated debt securities, if any;
- any material federal income tax consequences applicable to the debt securities, including any debt securities denominated and made payable, as described in the prospectus supplements, in foreign currencies, or units based on or related to foreign currencies;
- any right we may have to satisfy, discharge and defease our obligations under the debt securities, or terminate or eliminate restrictive covenants or events of default in the Indentures, by depositing money or U.S. government obligations with the trustee of the Indentures;
- the names of any trustees, depositories, authenticating or paying agents, transfer agents or registrars or other agents with respect to the debt securities;
- to whom any interest on any debt security shall be payable, if other than the person in whose name the security is registered, on the record date for such interest, the extent to which, or the manner in which, any interest payable on a temporary global debt security will be paid;
- if the principal of or any premium or interest on any debt securities is to be payable in one or more currencies or currency units other than as stated, the currency, currencies or currency units in which it shall be paid and the periods within and terms and conditions upon which such election is to be made and the amounts payable (or the manner in which such amount shall be determined);
- the portion of the principal amount of any debt securities which shall be payable upon declaration of acceleration of the maturity of the debt securities pursuant to the applicable Indenture;
- if the principal amount payable at the stated maturity of any debt security of the series will not be determinable as of any one or more dates prior to the stated maturity, the amount which shall be deemed to be the principal amount of such debt securities as of any such date for any purpose, including the principal amount thereof which shall be due and payable upon any maturity other than the stated maturity or which shall be deemed to be outstanding as of any date prior to the stated maturity (or, in any such case, the manner in which such amount deemed to be the principal amount shall be determined); and
- any other specific terms of the debt securities, including any modifications to the events of default under the debt securities and any other terms which may be required by or advisable under applicable laws or regulations.



Unless otherwise specified in the applicable prospectus supplement, we do not anticipate the debt securities will be listed on any securities exchange. Holders of the debt securities may present registered debt securities for exchange or transfer in the manner described in the applicable prospectus supplement. Except as limited by the applicable Indenture, we will provide these services without charge, other than any tax or other governmental charge payable in connection with the exchange or transfer.

Debt securities may bear interest at a fixed rate or a variable rate as specified in the prospectus supplement. In addition, if specified in the prospectus supplement, we may sell debt securities bearing no interest or interest at a rate that at the time of issuance is below the prevailing market rate, or at a discount below their stated principal amount. We will describe in the applicable prospectus supplement any special federal income tax considerations applicable to these discounted debt securities.

We may issue debt securities with the principal amount payable on any principal payment date, or the amount of interest payable on any interest payment date, to be determined by referring to one or more currency exchange rates, commodity prices, equity indices or other factors. Holders of such debt securities may receive a principal amount on any principal payment date, or interest payments on any interest payment date, that are greater or less than the amount of principal or interest otherwise payable on such dates, depending upon the value on such dates of applicable currency, commodity, equity index or other factors. The applicable prospectus supplement will contain information as to how we will determine the amount of principal or interest payable on any date, as well as the currencies, commodities, equity indices or other factors to which the amount payable on that date relates and certain additional tax considerations.

## Units

We may issue units consisting of any combination of the other types of securities offered under this prospectus in one or more series. We may evidence each series of units by unit certificates that we may issue under a separate agreement. We may enter into unit agreements with a unit agent. Each unit agent, if any, may be a bank or trust company that we select. We will indicate the name and address of the unit agent, if any, in the applicable prospectus supplement relating to a particular series of units. Specific unit agreements, if any, will contain additional important terms and provisions. We will file as an exhibit to the registration statement of which this prospectus is a part, or will incorporate by reference from a current report that we file with the SEC, the form of unit and the form of each unit agreement, if any, relating to units offered under this prospectus.

If we offer any units, certain terms of that series of units will be described in the applicable prospectus supplement, including, without limitation, the following, as applicable:

- the title of the series of units;
- identification and description of the separate constituent securities comprising the units;
- the price or prices at which the units will be issued;
- the date, if any, on and after which the constituent securities comprising the units will be separately transferable;
- a discussion of certain United States federal income tax considerations applicable to the units; and
- any other material terms of the units and their constituent securities.

## **Anti-Takeover Effects of Delaware Law and Our Amended and Restated Certificate of Incorporation and Amended and Restated Bylaws**

Some provisions of Delaware law, our Amended and Restated Certificate of Incorporation and our Amended and Restated Bylaws could prohibit or delay mergers or other takeover or change in control attempts and, accordingly, may discourage attempts to acquire us even though such a transaction may offer our stockholders the opportunity to sell their stock at a price above the prevailing market price.

These provisions, summarized below, are intended to discourage coercive takeover practices and inadequate takeover bids. These provisions are also designed to encourage persons seeking to acquire control of us to first negotiate with our board of directors. We believe that the benefits of the increased protection of our potential ability to negotiate with the proponent of an unfriendly or unsolicited proposal to acquire or restructure us outweigh the disadvantages of discouraging these proposals because negotiation of these proposals could result in an improvement of their terms.

### *Delaware Anti-Takeover Statute*

We are subject to Section 203 of the General Corporation Law of the State of Delaware, which prohibits persons deemed to be “interested stockholders” from engaging in a “business combination” with a publicly held Delaware corporation for three years following the date these persons become interested stockholders unless the business combination is, or the transaction in which the person became an interested stockholder was, approved in a prescribed manner or another prescribed exception applies. Generally, an “interested stockholder” is a person who, together with affiliates and associates, owns, or within three years prior to the determination of interested stockholder status did own, 15% or more of a corporation’s voting stock. Generally, a “business combination” includes a merger, asset or stock sale, or other transaction resulting in a financial benefit to the interested stockholder. The existence of this provision may have an anti-takeover effect with respect to transactions not approved in advance by the board of directors.

### *Choice of Forum*

Our Amended and Restated Certificate of Incorporation provides that, unless we consent in writing to an alternative forum, to the fullest extent permitted by law, that derivative actions brought in our name, actions against directors, officers and employees for breach of fiduciary duty and certain other actions may be brought only in the Court of Chancery in the State of Delaware, except any action (A) as to which the Court of Chancery in the State of Delaware determines that there is an indispensable party not subject to the jurisdiction of the Court of Chancery (and the indispensable party does not consent to the personal jurisdiction of the Court of Chancery within ten days following such determination), (B) which is vested in the exclusive jurisdiction of a court or forum other than the Court of Chancery or (C) for which the Court of Chancery does not have subject matter jurisdiction. If an action is brought outside of Delaware, the stockholder bringing the suit will be deemed to have consented to service of process on such stockholder’s counsel. Although we believe this provision benefits us by providing increased consistency in the application of law in the types of lawsuits to which it applies, a court may determine that this provision is unenforceable, and to the extent it is enforceable, the provision may have the effect of discouraging lawsuits against our directors and officers.

Our Amended and Restated Certificate of Incorporation provides that the exclusive forum provision will be applicable to the fullest extent permitted by applicable law, subject to certain exceptions. Section 27 of the Exchange Act creates exclusive federal jurisdiction over all suits brought to enforce any duty or liability created by the Exchange Act or the rules and regulations thereunder. As a result, the exclusive forum provision will not apply to suits brought to enforce any duty or liability created by the Exchange Act or any other claim for which the federal courts have exclusive jurisdiction. In addition, our Amended and Restated Certificate of Incorporation provides that, unless we consent in writing to the selection of an alternative forum, the federal district courts of the United States of America shall, to the fullest extent permitted by law, be the exclusive forum for the resolution of any complaint asserting a cause of action arising under the Securities Act or the rules and regulations promulgated thereunder. We note, however, that there is uncertainty as to whether a court would enforce this provision and that investors cannot waive compliance with the federal securities laws and the rules and regulations thereunder. Section 22 of the Securities Act creates concurrent jurisdiction for state and federal courts over all suits brought to enforce any duty or liability created by the Securities Act or the rules and regulations thereunder.

As permitted by Section 102 of the Delaware General Corporation Law, we have adopted provisions in our Amended and Restated Certificate of Incorporation and our Amended and Restated Bylaws that limit or eliminate the personal liability of our directors for a breach of their fiduciary duty of care as a director. The duty of care generally requires that, when acting on behalf of the corporation, directors exercise an informed business judgment based on all material information reasonably available to them. Consequently, a director will not be personally liable to us or our stockholders for monetary damages for breach of fiduciary duty as a director, except for liability for:

- any breach of the director's duty of loyalty to us or our stockholders;
- any act or omission not in good faith or that involves intentional misconduct or a knowing violation of law;
- any act related to unlawful stock repurchases, redemptions or other distributions or payment of dividends; or
- any transaction from which the director derived an improper personal benefit.

These limitations of liability do not affect the availability of equitable remedies such as injunctive relief or rescission. Our Amended and Restated Certificate of Incorporation also authorizes us to indemnify our officers, directors and other agents to the fullest extent permitted under Delaware law.

As permitted by Section 145 of the Delaware General Corporation Law, our Amended and Restated Bylaws provide that:

- we may indemnify our directors, officers and employees to the fullest extent permitted by the Delaware General Corporation Law, subject to limited exceptions;
- we may advance expenses to our directors, officers and employees in connection with a legal proceeding to the fullest extent permitted by the Delaware General Corporation Law, subject to limited exceptions; and
- the rights provided in our bylaws are not exclusive.

Our Amended and Restated Certificate of Incorporation and our Amended and Restated Bylaws provide for the indemnification provisions described above and elsewhere herein. We have entered or will enter into, and intend to continue to enter into, separate indemnification agreements with our directors and officers that may be broader than the specific indemnification provisions contained in the Delaware General Corporation Law. These indemnification agreements generally require us, among other things, to indemnify our officers and directors against certain liabilities that may arise by reason of their status or service as directors or officers, other than liabilities arising from willful misconduct. These indemnification agreements also generally require us to advance any expenses incurred by the directors or officers as a result of any proceeding against them as to which they could be indemnified. These indemnification provisions and the indemnification agreements may be sufficiently broad to permit indemnification of our officers and directors for liabilities, including reimbursement of expenses incurred, arising under the Securities Act.

We have purchased and currently intend to maintain insurance on behalf of each and every person who is or was a director or officer of the Registrant against any loss arising from any claim asserted against him or her and incurred by him or her in any such capacity, subject to certain exclusions.

## FORMS OF SECURITIES

Each security may be represented either by a certificate issued in definitive form to a particular investor or by one or more global securities representing the entire issuance of securities. Certificated securities in definitive form and global securities will be issued in registered form. Definitive securities name you or your nominee as the owner of the security, and in order to transfer or exchange these securities or to receive payments other than interest or other interim payments, you or your nominee must physically deliver the securities to the trustee, registrar, paying agent or other agent, as applicable. Global securities name a depositary or its nominee as the owner of the debt securities, warrants or units represented by these global securities. The depositary maintains a computerized system that will reflect each investor's beneficial ownership of the securities through an account maintained by the investor with its broker/dealer, bank, trust company or other representative, as we explain more fully below.

### *Registered Global Securities*

We may issue the securities in the form of one or more fully registered global securities that will be deposited with a depositary or its nominee identified in the applicable prospectus supplement and registered in the name of that depositary or nominee. In those cases, one or more registered global securities will be issued in a denomination or aggregate denominations equal to the portion of the aggregate principal or face amount of the securities to be represented by registered global securities. Unless and until it is exchanged in whole for securities in definitive registered form, a registered global security may not be transferred except as a whole by and among the depositary for the registered global security, the nominees of the depositary or any successors of the depositary or those nominees.

The specific terms of the depositary arrangement with respect to any securities to be represented by a registered global security will be described in the prospectus supplement relating to those securities. We anticipate that the following provisions will apply to all depositary arrangements.

Ownership of beneficial interests in a registered global security will be limited to persons, called participants, that have accounts with the depositary or persons that may hold interests through participants. Upon the issuance of a registered global security, the depositary will credit, on its book-entry registration and transfer system, the participants' accounts with the respective principal or face amounts of the securities beneficially owned by the participants. Any dealers, underwriters or agents participating in the distribution of the securities will designate the accounts to be credited. Ownership of beneficial interests in a registered global security will be shown on, and the transfer of ownership interests will be effected only through, records maintained by the depositary, with respect to interests of participants, and on the records of participants, with respect to interests of persons holding through participants. The laws of some states may require that some purchasers of securities take physical delivery of these securities in definitive form. These laws may impair your ability to own, transfer or pledge beneficial interests in registered global securities.

So long as the depositary, or its nominee, is the registered owner of a registered global security, that depositary or its nominee, as the case may be, will be considered the sole owner or holder of the securities represented by the registered global security for all purposes under the applicable indenture, warrant agreement or unit agreement.

Except as described below, owners of beneficial interests in a registered global security will not be entitled to have the securities represented by the registered global security registered in their names, will not receive or be entitled to receive physical delivery of the securities in definitive form and will not be considered the owners or holders of the securities under the applicable indenture, warrant agreement or unit agreement. Accordingly, each person owning a beneficial interest in a registered global security must rely on the procedures of the depository for that registered global security and, if that person is not a participant, on the procedures of the participant through which the person owns its interest, to exercise any rights of a holder under the applicable indenture, warrant agreement or unit agreement. We understand that under existing industry practices, if we request any action of holders or if an owner of a beneficial interest in a registered global security desires to give or take any action that a holder is entitled to give or take under the applicable indenture, warrant agreement or unit agreement, the depository for the registered global security would authorize the participants holding the relevant beneficial interests to give or take that action, and the participants would authorize beneficial owners owning through them to give or take that action or would otherwise act upon the instructions of beneficial owners holding through them.

Payments to holders with respect to securities represented by a registered global security registered in the name of a depository or its nominee will be made to the depository or its nominee, as the case may be, as the registered owner of the registered global security. None of the Company, the trustees, the warrant agents, the unit agents or any other agent of the Company, agent of the trustees, the warrant agents or unit agents will have any responsibility or liability for any aspect of the records relating to payments made on account of beneficial ownership interests in the registered global security or for maintaining, supervising or reviewing any records relating to those beneficial ownership interests.

We expect that the depository for any of the securities represented by a registered global security, upon receipt of any payment of principal, premium, interest or other payment or distribution to holders of that registered global security, will immediately credit participants' accounts in amounts proportionate to their respective beneficial interests in that registered global security as shown on the records of the depository. We also expect that payments by participants to owners of beneficial interests in a registered global security held through participants will be governed by standing customer instructions and customary practices, as is now the case with the securities held for the accounts of customers or registered in "street name," and will be the responsibility of those participants.

If the depository for any of these securities represented by a registered global security is at any time unwilling or unable to continue as depository or ceases to be a clearing agency registered under the Exchange Act and a successor depository registered as a clearing agency under the Exchange Act is not appointed by us within 90 days, we will issue securities in definitive form in exchange for the registered global security that had been held by the depository. Any securities issued in definitive form in exchange for a registered global security will be registered in the name or names that the depository gives to the relevant trustee, warrant agent, unit agent or other relevant agent of ours or theirs. It is expected that the depository's instructions will be based upon directions received by the depository from participants with respect to ownership of beneficial interests in the registered global security that had been held by the depository.

## **LEGAL MATTERS**

Unless otherwise indicated in the applicable prospectus supplement, the validity of the securities offered by this prospectus will be passed upon for us by Ellenoff Grossman & Schole LLP, New York, New York. If legal matters in connection with offerings made by this prospectus are passed on by counsel for the underwriters, dealers or agents, if any, that counsel will be named in the applicable prospectus supplement.

## **EXPERTS**

The financial statements as of and for the years ended December 31, 2022 and 2021, included in our Annual Report on Form 10-K for the year ended December 31, 2022, have been audited by Mayer Hoffman McCann P.C., independent registered public accounting firm, as set forth in their report, and have been incorporated herein by reference in reliance upon such report given on the authority of such firm as experts in auditing and accounting.

## **WHERE YOU CAN FIND ADDITIONAL INFORMATION**

We file annual, quarter and periodic reports, proxy statements and other information with the Securities and Exchange Commission using the Commission's EDGAR system. The Commission maintains a web site that contains reports, proxy and information statements and other information regarding registrants that file electronically with the Commission. The address of such site is <http://www.sec.gov>.

## INCORPORATION OF DOCUMENTS BY REFERENCE

We are “incorporating by reference” in this prospectus certain documents we file with the SEC, which means that we can disclose important information to you by referring you to those documents. The information in the documents incorporated by reference is considered to be part of this prospectus. Statements contained in documents that we file with the SEC and that are incorporated by reference in this prospectus will automatically update and supersede information contained in this prospectus, including information in previously filed documents or reports that have been incorporated by reference in this prospectus, to the extent the new information differs from or is inconsistent with the old information. We have filed or may file the following documents with the SEC and they are incorporated herein by reference as of their respective dates of filing.

1. Our Annual Report on [Form 10-K](#) for the year ended December 31, 2022, filed with the SEC on March 9, 2023;
2. Our Current Reports on Form 8-K filed with the SEC on [January 6, 2023](#), [January 9, 2023](#), [January 17, 2023](#) and [February 16, 2023](#); and
3. The description of our common stock contained in our Registration Statement on [Form 8-A](#), filed on February 17, 2022 pursuant to Section 12(b) of the Exchange Act, which incorporates by reference the description of the shares of our common stock contained in the section entitled “Description of Securities” in our Registration Statement on [Form S-1](#) (File No. 333-249690), as updated by the description of common stock included in [Exhibit 4.2](#) to our Annual Report on Form 10-K for the year ended December 31, 2021, filed with the SEC on March 31, 2022, together with any subsequent amendment or report for the purpose of updating such description.

All documents that we filed with the SEC pursuant to Sections 13(a), 13(c), 14, and 15(d) of the Exchange Act subsequent to the date of this registration statement and prior to the filing of a post-effective amendment to this registration statement that indicates that all securities offered under this prospectus have been sold, or that deregisters all securities then remaining unsold, will be deemed to be incorporated in this registration statement by reference and to be a part hereof from the date of filing of such documents.

Any statement contained in a document incorporated or deemed to be incorporated by reference in this prospectus shall be deemed modified, superseded or replaced for purposes of this prospectus to the extent that a statement contained in this prospectus, or in any subsequently filed document that also is deemed to be incorporated by reference in this prospectus, modifies, supersedes or replaces such statement. Any statement so modified, superseded or replaced shall not be deemed, except as so modified, superseded or replaced, to constitute a part of this prospectus. None of the information that we disclose under Items 2.02 or 7.01 of any Current Report on Form 8-K or any corresponding information, either furnished under Item 9.01 or included as an exhibit therein, that we may from time to time furnish to the SEC will be incorporated by reference into, or otherwise included in, this prospectus, except as otherwise expressly set forth in the relevant document. Subject to the foregoing, all information appearing in this prospectus is qualified in its entirety by the information appearing in the documents incorporated by reference.

You may request, orally or in writing, a copy of these documents, which will be provided to you at no cost (other than exhibits, unless such exhibits are specifically incorporate by reference), by contacting the Company at Blue Water Vaccines Inc., at 201 E. Fifth Street, Suite 1900, Cincinnati, OH 45202, attention: Corporate Secretary. Our telephone number is (513) 620-4101. Information about us is also available at our website at <http://www.bluewatervaccines.com>. However, the information in our website is not a part of this prospectus and is not incorporated by reference.

## PART II

### INFORMATION NOT REQUIRED IN PROSPECTUS

#### Item 14. Other Expenses of Issuance and Distribution.

The Company is paying all expenses of the offering. The following table sets forth all expenses to be paid by the registrant. All amounts shown are estimates except for the registration fee.

SEC registration fee	\$ 11,020
Legal fees and expenses	\$ 35,000
Accounting fees and expenses	\$ 50,000
Trustees' Fees and Expenses	*
Warrant Agent Fees and Expenses	*
Miscellaneous	*
Total	<u>\$ 96,020</u>

\* These fees are calculated based on the securities offered and the number of issuances and accordingly cannot be estimated at this time. The applicable prospectus supplement will set forth the estimated amount of expenses of any offering of securities.

#### Item 15. Indemnification of Directors and Officers.

As permitted by Section 102 of the Delaware General Corporation Law, provisions in our Amended and Restated Certificate of Incorporation and our Amended and Restated Bylaws limit or eliminate the personal liability of our directors for a breach of their fiduciary duty of care as a director. The duty of care generally requires that, when acting on behalf of the corporation, directors exercise an informed business judgment based on all material information reasonably available to them. Consequently, a director will not be personally liable to us or our stockholders for monetary damages for breach of fiduciary duty as a director, except for liability for:

- any breach of the director's duty of loyalty to us or our stockholders;
- any act or omission not in good faith or that involves intentional misconduct or a knowing violation of law;
- any act related to unlawful stock repurchases, redemptions or other distributions or payment of dividends; or
- any transaction from which the director derived an improper personal benefit.

These limitations of liability do not affect the availability of equitable remedies such as injunctive relief or rescission. Our Amended and Restated Certificate of Incorporation also authorizes us to indemnify our officers, directors and other agents to the fullest extent permitted under Delaware law.

As permitted by Section 145 of the Delaware General Corporation Law, our Amended and Restated Bylaws provide that:

- we may indemnify our directors, officers and employees to the fullest extent permitted by the Delaware General Corporation Law, subject to limited exceptions;
- we may advance expenses to our directors, officers and employees in connection with a legal proceeding to the fullest extent permitted by the Delaware General Corporation Law, subject to limited exceptions; and
- the rights provided in our bylaws are not exclusive.

Our Amended and Restated Certificate of Incorporation and our Amended and Restated Bylaws provide for the indemnification provisions described above and elsewhere herein. We have entered or will enter into, and intend to continue to enter into, separate indemnification agreements with our directors and officers that may be broader than the specific indemnification provisions contained in the Delaware General Corporation Law. These indemnification agreements generally require us, among other things, to indemnify our officers and directors against certain liabilities that may arise by reason of their status or service as directors or officers, other than liabilities arising from willful misconduct. These indemnification agreements also generally require us to advance any expenses incurred by the directors or officers as a result of any proceeding against them as to which they could be indemnified. These indemnification provisions and the indemnification agreements may be sufficiently broad to permit indemnification of our officers and directors for liabilities, including reimbursement of expenses incurred, arising under the Securities Act.

The Registrant has purchased and currently intends to maintain insurance on behalf of each and every person who is or was a director or officer of the Registrant against any loss arising from any claim asserted against him or her and incurred by him or her in any such capacity, subject to certain exclusions.

The foregoing summaries are necessarily subject to the complete text of the referenced sections of the Delaware General Corporation Law, our Amended and Restated Certificate of Incorporation, Amended and Restated Bylaws, and the form indemnification agreements and are qualified in their entirety by reference thereto.



**Item 16. Exhibits.**

The following exhibits are filed with this Registration Statement.

The agreements included or incorporated by reference as exhibits to this registration statement contain representations and warranties by each of the parties to the applicable agreement. These representations and warranties were made solely for the benefit of the other parties to the applicable agreement and (i) were not intended to be treated as categorical statements of fact, but rather as a way of allocating the risk to one of the parties if those statements prove to be inaccurate; (ii) may have been qualified in such agreement by disclosures that were made to the other party in connection with the negotiation of the applicable agreement; (iii) may apply contract standards of “materiality” that are different from “materiality” under the applicable securities laws; and (iv) were made only as of the date of the applicable agreement or such other date or dates as may be specified in the agreement.

The undersigned registrant acknowledges that, notwithstanding the inclusion of the foregoing cautionary statements, it is responsible for considering whether additional specific disclosures of material information regarding material contractual provisions are required to make the statements in this registration statement not misleading.

<b>Exhibit Number</b>	<b>Description of Document</b>
1.1	Form of Underwriting Agreement**
4.1	Form of Certificate of Designation of Preferred Stock**
4.2	Form of Warrant Agreement and Form of Warrant Certificate**
4.3	Form of Subscription Rights Agreement and Form Subscription Rights Certificate**
4.4	<a href="#">Form of Indenture*</a>
4.5	Form of Note**
4.6	Form of Debt Securities**
5.1	<a href="#">Opinion of Ellenoff Grossman &amp; Schole LLP*</a>
12.1	Computation of Ratio of Earnings to Fixed Charges**
23.1	<a href="#">Consent of Mayer Hoffman McCann P.C.*</a>
23.2	<a href="#">Consent of Ellenoff Grossman &amp; Schole LLP (included in Exhibit 5.1)*</a>
24.1	<a href="#">Power of Attorney (included in Part II of this Registration Statement)</a>
25.1	Statement of Eligibility of trustee on Form T-1**+
107	<a href="#">Filing Fee Table*</a>

\* Filed herewith.

\*\* If applicable, to be filed by an amendment or as an exhibit to a report pursuant to section 13(a) or section 15(d) of the Exchange Act and incorporated by reference

+ To be filed pursuant to Rule 305(b)(2) of the Trust Indenture Act.

**Item 17. Undertakings.**

(a) 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 of 1933;

(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 Commission pursuant to Rule 424(b) if, in the aggregate, the changes in volume and price represent no more than a 20% 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) 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 Commission by the registrant pursuant to Section 13 or 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 of 1933, 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.

(4) That, for the purpose of determining liability under the Securities Act of 1933 to any purchaser:

(i) Each prospectus filed by the registrant 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

(ii) 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 of 1933 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 the purpose of determining liability of the registrant under the Securities Act of 1933 to any purchaser in the initial distribution of the securities, the undersigned registrant undertakes that in a primary offering of securities of the undersigned registrant pursuant to this registration statement, regardless of the underwriting method used to sell the securities to the purchaser, if the securities are offered or sold to such purchaser by means of any of the following communications, the undersigned registrant will be a seller to the purchaser and will be considered to offer or sell such securities to such purchaser:

(i) Any preliminary prospectus or prospectus of the undersigned registrant relating to the offering required to be filed pursuant to Rule 424;

(ii) Any free writing prospectus relating to the offering prepared by or on behalf of the undersigned registrant or used or referred to by the undersigned registrant;

(iii) The portion of any other free writing prospectus relating to the offering containing material information about the undersigned registrant or its securities provided by or on behalf of the undersigned registrant; and

(iv) Any other communication that is an offer in the offering made by the undersigned registrant to the purchaser.

(b) The undersigned registrant hereby undertakes that, for purposes of determining any liability of the registrant under the Securities Act of 1933, each filing of the registrant's annual report pursuant to Section 13(a) or Section 15(d) of the Securities Exchange Act of 1934 (and, where applicable, each filing of an employee benefit plan's annual report pursuant to section 15(d) of the Securities Exchange Act of 1934) 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.

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

(d) Insofar as indemnification for liabilities arising under the Securities Act of 1933 may be permitted to directors, officers and controlling persons of the registrant pursuant to the foregoing provisions, or otherwise, the registrant has been advised that in the opinion of the Securities and Exchange Commission such indemnification is against public policy as expressed in the Securities Act and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment by the registrant of expenses incurred or paid by a director, officer or controlling person of the registrant in the successful defense of any action, suit or proceeding) is asserted by such director, officer or controlling person in connection with the securities being registered, the registrant will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question whether such indemnification by it is against public policy as expressed in the Securities Act of 1933 and will be governed by the final adjudication of such issue.

(e) The undersigned registrant hereby undertakes to file an application for the purpose of determining the eligibility of the trustee to act under subsection (a) of Section 310 of the Trust Indenture Act in accordance with the rules and regulations prescribed by the Commission under Section 305(b)(2) of the Trust Indenture Act.

**SIGNATURES**

Pursuant to the requirements of the Securities Act of 1933, as amended, the registrant certifies that it has reasonable grounds to believe that it meets all of the requirements for filing of a Registration Statement on Form S-3, and has duly caused this Registration Statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of Cincinnati, State of Ohio, on this 9<sup>th</sup> day of March, 2023.

**BLUE WATER VACCINES INC.**

By: /s/ Joseph Hernandez  
Joseph Hernandez  
Chief Executive Officer

KNOW ALL PERSONS BY THESE PRESENTS that each individual whose signature appears below hereby constitutes and appoints Joseph Hernandez as his or her true and lawful attorney-in-fact and agent with full power of substitution, for him or her and in his or her name, place and stead, in any and all capacities, to sign any and all amendments, including post-effective amendments, to this registration statement, and to sign any registration statement for the same offering covered by this registration statement that is to be effective upon filing pursuant to Rule 462(b) promulgated under the Securities Act of 1933 increasing the number of shares for which registration is sought, and all post-effective amendments thereto, and to file the same, with all exhibits thereto and all documents in connection therewith, making such changes in this registration statement as such attorney-in-fact and agent so acting deem appropriate, with the SEC, granting unto said attorney-in-fact and agent full power and authority to do and perform each and every act and thing requisite and necessary to be done with respect to the offering of securities contemplated by this registration statement, as fully to all intents and purposes as he or she might or could do in person, hereby ratifying and confirming all that said attorney-in-fact and agent, or his, her or their substitute or substitutes, may lawfully do or cause to be done or by virtue hereof.

Pursuant to the requirements of the Securities Act of 1933, as amended, this Registration Statement has been signed by the following persons in the capacities and on the dates indicated.

<u>Signature</u>	<u>Title</u>	<u>Date</u>
<u>/s/ Joseph Hernandez</u> Joseph Hernandez	Chairman of the Board and Chief Executive Officer (Principal Executive Officer)	March 9, 2023
<u>/s/ Jon Garfield</u> Jon Garfield	Chief Financial Officer (Principal Financial Officer)	March 9, 2023
<u>/s/ Vuk Jeremic</u> Vuk Jeremic	Director	March 9, 2023
<u>/s/ Timothy Ramdeen</u> Timothy Ramdeen	Director	March 9, 2023
<u>/s/ James Sapirstein</u> James Sapirstein	Director	March 9, 2023
<u>/s/ Simon Tarsh</u> Simon Tarsh	Director	March 9, 2023

BLUE WATER VACCINES INC., as  
ISSUER

and  
[ ], as  
INDENTURE TRUSTEE

**INDENTURE**  
Dated as of [ ]

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**CUENTAS INC.**  
**Reconciliation and tie between Trust Indenture Act of 1939 and**  
**Indenture, dated as of.**

Section 310 (a)(1)	7.10
(a)(2)	7.10
(a)(3)	NOT APPLICABLE
(a)(4)	NOT APPLICABLE
(a)(5)	7.10
(b)	7.10
Section 311 (a)	7.11
(b)	7.11
(c)	NOT APPLICABLE
Section 312 (a)	2.06
(b)	10.03
(c)	10.03
Section 313 (a)	7.06
(b)(1)	7.06
(b)(2)	7.06
(c)(1)	7.06
(d)	7.06
Section 314 (a)	4.02, 10.05
(b)	NOT APPLICABLE
(c)(1)	10.04
(c)(2)	10.04
(c)(3)	NOT APPLICABLE
(d)	NOT APPLICABLE
(e)	10.05
(f)	NOT APPLICABLE
Section 315 (a)	7.01
(b)	7.05
(c)	7.01
(d)	7.01
(e)	6.14
Section 316 (a)	2.10
(a)(1)(a)	6.12
(a)(1)(b)	6.13
(b)	6.08
Section 317 (a)(1)	6.03
(a)(2)	6.04
(b)	2.05
Section 318 (a)	10.01

INDENTURE, dated as of [ ], between Blue Water Vaccines Inc., a Delaware corporation (“Company”), and [ ], as trustee (“Trustee”).

Each party agrees as follows for the benefit of the other party and for the equal and ratable benefit of the Holders of the Securities issued under this Indenture.

**ARTICLE I**  
**DEFINITIONS AND INCORPORATION BY REFERENCE**

**Section 1.01 Definitions.**

“*Additional Amounts*” means any additional amounts which are required hereby or by any Security, under circumstances specified herein or therein, to be paid by the Company in respect of certain taxes imposed on Holders specified herein or therein and which are owing to such Holders, as calculated by the Company.

“*Affiliate*” of any specified person means any other person directly or indirectly controlling or controlled by or under direct or indirect common control with such specified person. For the purposes of this definition, “control” (including, with correlative meanings, the terms “controlled by” and “under common control with”), as used with respect to any person, shall mean the possession, directly or indirectly, of the power to direct or cause the direction of the management or policies of such person, whether through the ownership of voting securities or by agreement or otherwise.

“*Agent*” means any Registrar or Paying Agent.

“*Applicable Procedures*” means, with respect to any transfer or transaction involving a Global Security or beneficial interest therein, the rules and procedures of DTC or any successor Depository, in each case to the extent applicable to such transaction and as in effect from time to time.

“*Board of Directors*” means the Board of Directors of the Company or any duly authorized committee thereof.

“*Board Resolution*” means a copy of a resolution certified by the Secretary of the Company to have been adopted by the Board of Directors or pursuant to authorization by the Board of Directors and to be in full force and effect on the date of the certificate and delivered to the Trustee.

“*Business Day*” means any day other than a Saturday, Sunday or other day on which banking institutions are authorized or required by law, regulation or executive order to close or be closed in the State of New York.

“*Capital Interests*” means any and all shares, interests, participations, rights or other equivalents (however designated) of capital stock, including, without limitation, with respect to partnerships, partnership interests (whether general or limited) and any other interest or participation that confers on a person the right to receive a share of the profits and losses of, or distributions of assets of, such partnership.

“*Company*” means the party named as such above until a successor replaces it and thereafter means the successor.

“*Company Order*” means a written order signed in the name of the Company by two Officers, one of whom must be the Company’s principal executive officer, principal financial officer or principal accounting officer.

“*Company Request*” means a written request signed in the name of the Company by its Chief Executive Officer or Chief Financial Officer and delivered to the Trustee.

“*Corporate Trust Office*” means the address of the Trustee specified in Section 10.02, or such other address as to which the Trustee may give notice to the Holders and the Company.

“*Default*” means any event which is, or after notice or passage of time or both would be, an Event of Default.

“*Depository*” means, with respect to the Securities of any Series issuable or issued in whole or part in the form of one or more Global Securities, the person designated as Depository for such Series by the Company, which Depository shall be a clearing agency registered under the Exchange Act; and if at any time there is more than one such person, “*Depository*” as used with respect to the Securities of any Series shall mean the Depository with respect to the Securities of such Series.

“*Discount Security*” means any Security that provides for an amount less than the stated principal amount thereof to be due and payable upon declaration of acceleration of the maturity thereof pursuant to Section 6.02.

“*Dollars*” and “*\$*” means the currency of The United States of America.

“*DTC*” means the Depository Trust Company, a New York corporation.

“*Exchange Act*” means the Securities Exchange Act of 1934, as amended, and the rules and regulations promulgated thereunder.

“*Foreign Currency*” means any currency or currency unit issued by a government other than the government of The United States of America.

“*Foreign Government Obligations*” means, with respect to Securities of any Series that are denominated in a Foreign Currency, (i) direct obligations of the government that issued or caused to be issued such currency for the payment of which obligations its full faith and credit is pledged or (ii) obligations of a person controlled or supervised by or acting as an agency or instrumentality of such government the timely payment of which is unconditionally guaranteed as a full faith and credit obligation by such government, which, in either case under clauses (i) or (ii), are not callable or redeemable at the option of the issuer thereof.

“*GAAP*” means generally accepted accounting principles set forth in the opinions and pronouncements of the Accounting Principles Board of the American Standards Board or in such other statements by such other entity as have been approved by a significant segment of the accounting profession.

“*Global Security*” or “*Global Securities*” means a Security or Securities, as the case may be, in the form established pursuant to Section 2.02 evidencing all or part of a Series of Securities, issued to the Depository for such Series or its nominee, and registered in the name of such Depository or nominee.

“*Holder*” means a person in whose name a Security is registered.

“*Indenture*” means this Indenture as amended or supplemented from time to time and shall include the form and terms of particular Series of Securities established as contemplated hereunder.

“*interest*” with respect to any Discount Security which by its terms bears interest only after Maturity means interest payable after Maturity.

“*Maturity*,” when used with respect to any Security or installment of principal thereof, means the date on which the principal of such Security or such installment of principal becomes due and payable as therein or herein provided, whether at the Stated Maturity or by declaration of acceleration, call for redemption or otherwise.

“*Officer*” means the Chief Executive Officer, Chief Financial Officer, any Vice-President, the Treasurer, the Secretary, any Assistant Treasurer or any Assistant Secretary of the Company.

“*Officers’ Certificate*” means a certificate signed by two Officers, one of whom must be the Company’s principal executive officer, principal financial officer or principal accounting officer.

“*Opinion of Counsel*” means a written opinion of legal counsel who is reasonably acceptable to the Trustee. The counsel may be an employee of or counsel to the Company.

“*person*” means any individual, corporation, partnership, joint venture, association, limited liability company, joint-stock company, trust, unincorporated organization or government or any agency or political subdivision thereof.

“*principal*” of a Security means the principal of the Security plus, when appropriate, the premium, if any, on, and any Additional Amounts in respect of, the Security.

“*Responsible Officer*” means any officer of the Trustee in its Corporate Trust Office with direct responsibility for the administration of this Indenture and also means, with respect to a particular corporate trust matter, any other officer to whom any corporate trust matter is referred because of his or her knowledge of and familiarity with a particular subject.

“*SEC*” means the Securities and Exchange Commission.

“*Securities*” means the debentures, notes or other debt instruments of the Company of any Series authenticated and delivered under this Indenture.

“*Series*” or “*Series of Securities*” means each series of debentures, notes or other debt instruments of the Company created pursuant to Sections 2.01 and 2.02 hereof.

“*Stated Maturity*” means when used with respect to any Security or any installment of principal thereof or interest thereon, the date specified in such Security as the fixed date on which the principal of such Security or such installment of principal or interest is due and payable.

“*Subsidiary*” means, with respect to any person, any corporation, association or other business entity of which more than 50% of the total voting power of shares of Capital Interests entitled (without regard to the occurrence of any contingency) to vote in the election of directors, managers or trustees thereof or, in the case of a partnership, more than 50% of the partners’ Capital Interests (considering all partners’ Capital Interests as a single class), is at the time owned or controlled, directly or indirectly, by such person or one or more of the other Subsidiaries of such person or combination thereof.

“TIA” means the Trust Indenture Act of 1939 (15 U.S. Code Sections 77aaa-77bbb) as in effect on the date of this Indenture and the rules and regulations promulgated thereunder; provided, however, that in the event the Trust Indenture Act of 1939 is amended after such date, “TIA” means, to the extent required by any such amendment, the Trust Indenture Act as so amended.

“Trustee” means the person named as the “Trustee” in the first paragraph of this instrument until a successor Trustee shall have become such pursuant to the applicable provisions of this Indenture, and thereafter “Trustee” shall mean each person who is then a Trustee hereunder, and if at any time there is more than one such person, “Trustee” as used with respect to the Securities of any Series shall mean the Trustee with respect to Securities of that Series.

“U.S. Government Obligations” means securities which are (i) direct obligations of The United States of America for the payment of which its full faith and credit is pledged or (ii) obligations of a person controlled or supervised by and acting as an agency or instrumentality of The United States of America the payment of which is unconditionally guaranteed as a full faith and credit obligation by The United States of America, and which are not callable or redeemable at the option of the issuer thereof, and shall also include a depository receipt issued by a bank or trust company as custodian with respect to any such U.S. Government Obligation or a specific payment of interest on or principal of any such U.S. Government Obligation held by such custodian for the account of the holder of a depository receipt, provided that (except as required by law) such custodian is not authorized to make any deduction from the amount payable to the holder of such depository receipt from any amount received by the custodian in respect of the U.S. Government Obligation evidenced by such depository receipt.

### Section 1.02 Other Definitions.

<b>TERM</b>	<b>Defined in Section</b>
<i>Bankruptcy Law</i>	6.01
<i>Custodian</i>	6.01
<i>Event of Default</i>	6.01
<i>Legal Holiday</i>	10.07
<i>mandatory sinking fund payment</i>	11.01
<i>Market Exchange Rate</i>	10.15
<i>optional sinking fund payment</i>	11.01
<i>Paying Agent</i>	2.04
<i>Registrar</i>	2.04
<i>Successor Person</i>	5.01

### Section 1.03 Incorporation by Reference of Trust Indenture Act.

Whenever this Indenture refers to a provision of the TIA, the provision is incorporated by reference in and made a part of this Indenture. The following TIA terms used in this Indenture have the following meanings:

“*Commission*” means the SEC.

“*indenture securities*” means the Securities.

“*indenture security holder*” means a Holder.

“*indenture to be qualified*” means this Indenture.

“*indenture trustee*” or “*institutional trustee*” means the Trustee.

“*obligor*” on the indenture securities means the Company and any successor obligor upon the Securities.

All other terms used in this Indenture that are defined by the TIA, defined by TIA reference to another statute or defined by SEC rule under the TIA and not otherwise defined herein are used herein as so defined.

#### **Section 1.04 Rules of Construction.**

Unless the context otherwise requires:

- (a) a term has the meaning assigned to it;
- (b) an accounting term not otherwise defined has the meaning assigned to it in accordance with generally accepted accounting principles;
- (c) references to “generally accepted accounting principles” and “GAAP” shall mean generally accepted accounting principles in effect as of the time when and for the period as to which such accounting principles are to be applied;
- (d) “or” is not exclusive;
- (e) words in the singular include the plural, and in the plural include the singular; and
- (f) provisions apply to successive events and transactions.

## **ARTICLE II THE SECURITIES**

**Section 2.01 Issuable in Series.** The aggregate principal amount of Securities that may be authenticated and delivered under this Indenture is unlimited. The Securities may be issued in one or more Series. All Securities of a Series shall be identical except as may be set forth or determined in the manner provided in a Board Resolution, supplemental indenture or Officers’ Certificate detailing the adoption of the terms thereof pursuant to authority granted under a Board Resolution. In the case of Securities of a Series to be issued from time to time, the Board Resolution, Officers’ Certificate or supplemental indenture detailing the adoption of the terms thereof pursuant to authority granted under a Board Resolution may provide for the method by which specified terms (such as interest rate, maturity date, record date or date from which interest shall accrue) are to be determined. Securities may differ between Series in respect of any matters, provided that all Series of Securities shall be equally and ratably entitled to the benefits of the Indenture.

**Section 2.02 Establishment of Terms of Series of Securities.** At or prior to the issuance of any Securities within a Series, the following shall be established (as to the Series generally, in the case of Subsection 2.02(a) and either as to such Securities within the Series or as to the Series generally in the case of Subsections 2.02(b) through 2.02(s)) by or pursuant to a Board Resolution, and set forth or determined in the manner provided in a Board Resolution, supplemental indenture or an Officers’ Certificate:

- (a) the form and title of the Series (which shall distinguish the Securities of that particular Series from the Securities of any other Series);

(b) the price or prices (expressed as a percentage of the principal amount thereof) at which the Securities of the Series will be issued;

(c) any limit upon the aggregate principal amount of the Securities of the Series which may be authenticated and delivered under this Indenture (except for Securities authenticated and delivered upon registration of transfer of, or in exchange for, or in lieu of, other Securities of the Series pursuant to Sections 2.07, 2.08, 2.11, 3.06 or 9.06);

(d) the date or dates on which the principal of the Securities of the Series is payable;

(e) the rate or rates (which may be fixed or variable) per annum or, if applicable, the method used to determine such rate or rates (including, but not limited to, any commodity, commodity index, stock exchange index or financial index) at which the Securities of the Series shall bear interest, if any, the date or dates from which such interest, if any, shall accrue, the date or dates on which such interest, if any, shall commence and be payable and any regular record date for the interest payable on any interest payment date;

(f) the place or places where the principal of and interest, if any, on the Securities of the Series shall be payable, where the Securities of such Series may be surrendered for registration of transfer or exchange and where notices and demands to or upon the Company in respect of the Securities of such Series and this Indenture may be served, and the method of such payment, if by wire transfer, mail or other means;

(g) if applicable, the period or periods within which, the price or prices at which and the terms and conditions upon which the Securities of the Series may be redeemed, in whole or in part, at the option of the Company;

(h) the obligation, if any, of the Company to redeem or purchase the Securities of the Series pursuant to any sinking fund or analogous provisions or at the option of a Holder thereof and the period or periods within which, the price or prices at which and the terms and conditions upon which Securities of the Series shall be redeemed or purchased, in whole or in part, pursuant to such obligation;

(i) the dates, if any, on which and the price or prices at which the Securities of the Series will be repurchased by the Company at the option of the Holders thereof and other detailed terms and provisions of such repurchase obligations;

(j) if other than denominations of \$1,000 and any integral multiple thereof, the denominations in which the Securities of the Series shall be issuable;

(k) if other than the principal amount thereof, the portion of the principal amount of the Securities of the Series that shall be payable upon declaration of acceleration of the maturity thereof pursuant to Section 6.02;

(l) the currency of denomination of the Securities of the Series, which may be Dollars or any Foreign Currency, and the agency or organization, if any, responsible for overseeing such composite currency;

(m) the provisions, if any, relating to any security provided for the Securities of the Series;

(n) any addition to or change in the Events of Default which applies to any Securities of the Series and any change in the right of the Trustee or the requisite Holders of such Securities to declare the principal amount thereof due and payable pursuant to Section 6.02;

(o) any addition to or change in the covenants set forth in Articles IV or V which applies to Securities of the Series;

(p) the provisions, if any, relating to conversion of any Securities of such Series, including, if applicable, the securities into which the Securities are convertible, the conversion price, the conversion period, provisions as to whether conversion will be mandatory, at the option of the Holders or at the option of the Company, the events requiring an adjustment of the conversion price and provisions affecting conversion if such Series of Securities are redeemed;

(q) whether the Securities of such Series will be senior debt securities or subordinated debt securities and, if applicable, a description of the subordination terms thereof;

(r) any depositaries, interest rate calculation agents, exchange rate calculation agents or other agents with respect to Securities of such Series if other than those appointed herein; and

(s) any other terms of the Securities of the Series (which may modify or delete any provision of this Indenture insofar as it applies to such Series).

All Securities of any one Series need not be issued at the same time and may be issued from time to time, consistent with the terms of this Indenture, if so provided by or pursuant to the Board Resolution, supplemental indenture hereto or Officers' Certificate referred to above, and, unless otherwise provided in such Board Resolution, a Series may be reopened, without the consent of the Holders, for increases in the aggregate principal amount of such Series and issuances of additional Securities of such Series.

**Section 2.03 Execution and Authentication.** At least one Officer shall sign the Securities for the Company by manual or facsimile signature. If an Officer whose signature is on a Security no longer holds that office at the time the Security is authenticated, the Security shall nevertheless be valid. A Security shall not be valid until authenticated by the manual signature of the Trustee or an authenticating agent. The signature shall be conclusive evidence that the Security has been authenticated under this Indenture. The Trustee shall at any time, and from time to time, authenticate Securities for original issue in the principal amount provided in the Board Resolution, supplemental indenture hereto or Officers' Certificate, upon receipt by the Trustee of a Company Order. Such Company Order may authorize authentication and delivery pursuant to electronic instructions in PDF from the Company or its duly authorized agent or agents. Each Security shall be dated the date of its authentication unless otherwise provided by a Board Resolution, a supplemental indenture hereto or an Officers' Certificate. The aggregate principal amount of Securities of any Series outstanding at any time may not exceed any limit upon the maximum principal amount for such Series set forth in the Board Resolution, supplemental indenture hereto or Officers' Certificate delivered pursuant to Section 2.02, except as provided in Section 2.02 or 2.08. Prior to the issuance of Securities of any Series, the Trustee shall have received and (subject to Section 7.02) shall be fully protected in relying on: (a) the Board Resolution, supplemental indenture hereto or Officers' Certificate establishing the form of the Securities of that Series or of Securities within that Series and the terms of the Securities of that Series or of Securities within that Series, (b) an Officers' Certificate complying with Section 10.04 and (c)(1) an Opinion of Counsel complying with Section 10.04 or (2) an Opinion of Counsel (or reliance letter with respect to an Opinion of Counsel) that the Securities have been duly authorized, executed and delivered by the Company and such Securities will constitute valid and binding obligations of the Company, enforceable against the Company in accordance with its terms. The Trustee may appoint an authenticating agent acceptable to the Company to authenticate Securities. An authenticating agent may authenticate Securities whenever the Trustee may do so. Each reference in this Indenture to authentication by the Trustee includes authentication by such agent. An authenticating agent has the same rights as an Agent to deal with the Company or an Affiliate of the Company.



**Section 2.04 Registrar and Paying Agent.** The Company shall maintain, with respect to each Series of Securities, at the place or places specified with respect to such Series pursuant to Section 2.02, an office or agency where Securities of such Series may be presented or surrendered for payment (“*Paying Agent*”), and where Securities of such Series may be surrendered for registration of transfer or exchange (“*Registrar*”). The Registrar shall keep a register with respect to each Series of Securities and of their transfer and exchange. The Company hereby appoints the Trustee as Paying Agent and Registrar. The Company will give prompt written notice to the Trustee of the name and address, and any change in the name or address, of each Registrar or Paying Agent. The Company may also from time to time designate one or more co-registrars or additional paying agents and may from time to time rescind such designations; provided, however, that no such designation or rescission shall in any manner relieve the Company of its obligations to maintain a Registrar and a Paying Agent in each place so specified pursuant to Section 2.02 for Securities of any Series for such purposes. The Company will give prompt written notice to the Trustee of any such designation or rescission and of any change in the name or address of any such co-registrar or additional paying agent. The term “Registrar” includes any co-registrar; and the term “Paying Agent” includes any additional paying agent. The Company hereby appoints the Trustee as the initial Registrar and Paying Agent for each Series unless another Registrar or Paying Agent, as the case may be, is appointed prior to the time Securities of that Series are first issued.

**Section 2.05 Paying Agent to Hold Money in Trust.** The Company shall require each Paying Agent other than the Trustee to agree in writing that the Paying Agent will hold in trust, for the benefit of Holders of any Series of Securities, or the Trustee, all money held by the Paying Agent for the payment of principal of or interest on the Series of Securities, and will notify the Trustee of any default by the Company in making any such payment. While any such default continues, the Trustee may require a Paying Agent to pay all money held by it to the Trustee. The Company at any time may require a Paying Agent to pay all money held by it to the Trustee. Upon payment over to the Trustee, the Paying Agent (if other than the Company or a Subsidiary of the Company) shall have no further liability for the money. If the Company or a Subsidiary of the Company acts as Paying Agent, it shall segregate and hold in a separate trust fund for the benefit of Holders of any Series of Securities all money held by it as Paying Agent. Upon an Event of Default under Section 6.01(d) or (e), the Trustee shall be the Paying Agent.

**Section 2.06 Holder Lists.** The Trustee shall preserve in as current a form as is reasonably practicable the most recent list available to it of the names and addresses of Holders of each Series of Securities and shall otherwise comply with TIA Section 312(a). If the Trustee is not the Registrar, the Company shall furnish to the Trustee at least ten (10) days before each interest payment date and at such other times as the Trustee may request in writing a list, in such form and as of such date as the Trustee may reasonably require, of the names and addresses of Holders of each Series of Securities.

**Section 2.07 Transfer and Exchange.** Where Securities of a Series are presented to the Registrar or a co-registrar with a request to register a transfer or to exchange them for an equal principal amount of Securities of the same Series, the Registrar shall register the transfer or make the exchange if its requirements for such transactions are met. To permit registrations of transfers and exchanges, the Trustee shall authenticate Securities at the Registrar’s request. No service charge shall be made for any registration of transfer or exchange (except as otherwise expressly permitted herein), but the Company may require payment of a sum sufficient to cover any transfer tax or similar governmental charge payable in connection therewith (other than any such transfer tax or similar governmental charge payable upon exchanges pursuant to Sections 2.11, 3.06 or 9.06). Neither the Company nor the Registrar shall be required (a) to issue, register the transfer of, or exchange Securities of any Series for the period beginning at the opening of business fifteen days immediately preceding the delivery of a notice of redemption of Securities of that Series selected for redemption and ending at the close of business on the day of such delivery, or (b) to register the transfer of or exchange Securities of any Series selected, called or being called for redemption as a whole or the portion being redeemed of any such Securities selected, called or being called for redemption in part.

## **Section 2.08 Mutilated, Destroyed, Lost and Stolen Securities.**

(a) If any mutilated Security is surrendered to the Trustee, the Company shall execute and the Trustee shall authenticate and make available for delivery in exchange therefor a new Security of the same Series and of like tenor and principal amount and bearing a number not contemporaneously outstanding. If there shall be delivered to the Company and the Trustee (i) evidence to their satisfaction of the destruction, loss or theft of any Security and (ii) such security or indemnity as may be required by them to save each of them and any agent of either of them harmless, then, in the absence of notice to the Company or the Trustee that such Security has been acquired by a protected purchaser, the Company shall execute and upon its request the Trustee shall authenticate and make available for delivery, in lieu of any such destroyed, lost or stolen Security, a new Security of the same Series and of like tenor and principal amount and bearing a number not contemporaneously outstanding. In case any such mutilated, destroyed, lost or stolen Security has become due and payable, the Company in its discretion may, instead of issuing a new Security, pay such Security.

(b) Upon the issuance of any new Security under this Section, the Company may require the payment of a sum sufficient to cover any tax or other governmental charge that may be imposed in relation thereto and any other expenses (including the fees and expenses of the Trustee) connected therewith. Every new Security of any Series issued pursuant to this Section in lieu of any destroyed, lost or stolen Security shall constitute an original additional contractual obligation of the Company, whether or not the destroyed, lost or stolen Security shall be at any time enforceable by anyone, and shall be entitled to all the benefits of this Indenture equally and proportionately with any and all other Securities of that Series duly issued hereunder. The provisions of this Section are exclusive and shall preclude (to the extent lawful) all other rights and remedies with respect to the replacement or payment of mutilated, destroyed, lost or stolen Securities.

**Section 2.09 Outstanding Securities.** The Securities outstanding at any time are all the Securities authenticated by the Trustee except for those canceled by it, those delivered to it for cancellation, those reductions in the interest on a Global Security effected by the Trustee in accordance with the provisions hereof and those described in this Section as not outstanding. If a Security is replaced pursuant to Section 2.08, it ceases to be outstanding until the Trustee receives proof satisfactory to it that the replaced Security is held by a protected purchaser. If the Paying Agent (other than the Company, a Subsidiary of the Company or an Affiliate of the Company) holds on the Maturity of Securities of a Series money sufficient to pay such Securities payable on that date, then on and after that date such Securities of the Series cease to be outstanding and interest on them ceases to accrue. A Security does not cease to be outstanding because the Company or an Affiliate of the Company holds the Security. In determining whether the Holders of the requisite principal amount of outstanding Securities have given any request, demand, authorization, direction, notice, consent or waiver hereunder, the principal amount of a Discount Security that shall be deemed to be outstanding for such purposes shall be the amount of the principal thereof that would be due and payable as of the date of such determination upon a declaration of acceleration of the Maturity thereof pursuant to Section 6.02.

**Section 2.10 Treasury Securities.** In determining whether the Holders of the required principal amount of Securities of a Series have concurred in any request, demand, authorization, direction, notice, consent or waiver, Securities of a Series owned by the Company shall be disregarded, except that for the purposes of determining whether the Trustee shall be protected in relying on any such request, demand, authorization, direction, notice, consent or waiver, only Securities of a Series that a Responsible Officer of the Trustee knows are so owned shall be so disregarded.

**Section 2.11 Temporary Securities.** Until definitive Securities are ready for delivery, the Company may prepare and the Trustee shall authenticate temporary Securities upon a Company Order. Temporary Securities shall be substantially in the form of definitive Securities but may have variations that the Company considers appropriate for temporary Securities. Without unreasonable delay, the Company shall prepare and the Trustee upon request shall authenticate definitive Securities of the same Series and date of maturity in exchange for temporary Securities. Until so exchanged, temporary securities shall have the same rights under this Indenture as the definitive Securities.

**Section 2.12 Cancellation.** The Company at any time may deliver Securities to the Trustee for cancellation. The Registrar and the Paying Agent shall forward to the Trustee any Securities surrendered to them for registration of transfer, exchange or payment. The Trustee shall cancel all Securities surrendered for registration of transfer, exchange, payment, replacement or cancellation in accordance with its customary procedures. The Company may not issue new Securities to replace Securities that it has paid or delivered to the Trustee for cancellation.

**Section 2.13 Defaulted Interest.** If the Company defaults in a payment of interest on a Series of Securities, it shall pay the defaulted interest at the rate established for the particular Series, if any, plus, to the extent permitted by law, any interest payable on the defaulted interest, to the persons who are Holders of the Series on a subsequent special record date. The Company shall fix the special record date and payment date; provided that if no rate for defaulted interest is specified for any Series of Securities, then the defaulted interest rate shall be the interest rate specified for such Series of Securities. At least ten (10) days before the special record date, the Company shall deliver to the Trustee and to each Holder of the Series a notice that states the record date, the related payment date and the amount of interest to be paid. The Company may also pay defaulted interest in any other lawful manner.

#### **Section 2.14 Global Securities**

(a) Terms of Securities. A Board Resolution, a supplemental indenture hereto or an Officers' Certificate shall establish whether the Securities of a Series shall be issued in whole or in part in the form of one or more Global Securities and the Depositary for such Global Security or Securities.

(b) Transfer and Exchange. Notwithstanding any provisions to the contrary contained in Section 2.07 of the Indenture and in addition thereto, any Global Security shall be exchangeable pursuant to Section 2.07 of the Indenture for Securities registered in the names of Holders other than the Depositary for such Security or its nominee only if (i) such Depositary notifies the Company that it is unwilling or unable to continue as Depositary for such Global Security or if at any time such Depositary ceases to be a clearing agency registered under the Exchange Act, and, in either case, the Company fails to appoint a successor Depositary registered as a clearing agency under the Exchange Act within 90 days of such event, (ii) the Company executes and delivers to the Trustee an Officers' Certificate to the effect that such Global Security shall be so exchangeable or (iii) an Event of Default with respect to the Securities represented by such Global Security shall have happened and be continuing. Any Global Security that is exchangeable pursuant to the preceding sentence shall be exchangeable for Securities registered in such names as the Depositary shall direct in writing in an aggregate principal amount equal to the principal amount of the Global Security with like tenor and terms.

(c) Except as provided in this Section 2.14(c), a Global Security may not be transferred except as a whole by the Depositary with respect to such Global Security to a nominee of such Depositary, by a nominee of such Depositary to such Depositary or another nominee of such Depositary or by the Depositary or any such nominee to a successor Depositary or a nominee of such a successor Depositary.

(d) Legend. Any Global Security issued hereunder shall bear a legend in substantially the following form:

**“This Security is a Global Security within the meaning of the Indenture hereinafter referred to and is registered in the name of the Depositary or a nominee of the Depositary. This Security is exchangeable for Securities registered in the name of a person other than the Depositary or its nominee only in the limited circumstances described in the Indenture, and may not be transferred except as a whole by the Depositary to a nominee of the Depositary, by a nominee of the Depositary to the Depositary or another nominee of the Depositary or by the Depositary or any such nominee to a successor Depositary or a nominee of such a successor Depositary.”**

(e) Acts of Holders. The Depositary, as a Holder, may appoint agents and otherwise authorize participants to give or take any request, demand, authorization, direction, notice, consent, waiver or other action which a Holder is entitled to give or take under the Indenture.

(f) Payments. Notwithstanding the other provisions of this Indenture, unless otherwise specified as contemplated by Section 2.02, payment of the principal of and interest, if any, on any Global Security shall be made to the Holder thereof.

(g) Consents, Declaration and Directions. Except as provided in Section 2.14(g), the Company, the Trustee and any Agent shall treat a person as the Holder of such principal amount of outstanding Securities of such Series represented by a Global Security as shall be specified in a written statement of the Depositary with respect to such Global Security, for purposes of obtaining any consents, declarations, waivers or directions required to be given by the Holders pursuant to this Indenture.

(h) The Depositary or its nominee, as registered owner of a Global Security, shall be the Holder of such Global Security for all purposes under the Indenture and the Securities, and owners of beneficial interests in a Global Security shall hold such interests pursuant to the Applicable Procedures. Accordingly, any such owner’s beneficial interest in a Global Security will be shown only on, and the transfer of such interest shall be effected only through, records maintained by the Depositary or its nominee and such owners of beneficial interests in a Global Security will not be considered the owners or holders thereof. Notwithstanding any other provision of this Indenture or any Security, where this Indenture or any Global Security provides for notice of any event (including any notice of redemption or repurchase) to a Holder of a Global Security (whether by mail or otherwise), such notice shall be sufficiently given if given to the Depositary (or its designee) pursuant to the standing instructions from the Depositary or its designee, including by electronic mail in accordance with applicable Depositary procedures.

**Section 2.15 CUSIP Numbers.** The Company in issuing the Securities may use “CUSIP” numbers (if then generally in use), and, if so, the Trustee shall use “CUSIP” numbers in notices of redemption as a convenience to Holders; provided that any such notice may state that no representation is made as to the correctness of such numbers either as printed on the Securities or as contained in any notice of a redemption and that reliance may be placed only on the other elements of identification printed on the Securities, and any such redemption shall not be affected by any defect in or omission of such numbers. The Company shall promptly notify the Trustee of any change in “CUSIP” numbers of which the Company becomes aware.

### ARTICLE III REDEMPTION

**Section 3.01 Notice to Trustee.** The Company may, with respect to any Series of Securities, reserve the right to redeem and pay the Series of Securities or may covenant to redeem and pay the Series of Securities or any part thereof prior to the Stated Maturity thereof at such time and on such terms as provided for in such Securities. If a Series of Securities is redeemable and the Company wants or is obligated to redeem prior to the Stated Maturity thereof all or part of the Series of Securities pursuant to the terms of such Securities, it shall notify the Trustee of the redemption date and the principal amount of the Series of Securities to be redeemed.

**Section 3.02 Selection of Securities to be Redeemed.** Unless otherwise indicated for a particular Series by a Board Resolution, a supplemental indenture or an Officers' Certificate, if less than all the Securities of a Series are to be redeemed, the Trustee shall select the Securities of the Series to be redeemed in any manner that the Trustee deems fair and appropriate. The Trustee shall make the selection from Securities of the Series outstanding not previously called for redemption. Securities of a Series and portions selected for redemption shall be in amounts of \$1,000 or whole multiples of \$1,000 or, with respect to Securities of any Series issuable in other denominations pursuant to Section 2.02(j), the minimum principal denomination for each Series and integral multiples thereof. Provisions of this Indenture that apply to Securities of a Series called for redemption also apply to portions of Securities of that Series called for redemption. The Trustee shall not be liable for the selection made in accordance with this Section 3.02.

**Section 3.03 Notice of Redemption.**

(a) Unless otherwise specified for a particular Series by a Board Resolution, a supplemental indenture or an Officers' Certificate, at least 30 days but not more than 60 days before a redemption date, the Company shall deliver notice of redemption to each Holder whose Securities are to be redeemed. The notice shall identify the Securities of the Series to be redeemed and shall state:

- (i) the redemption date;
- (ii) the redemption price or the manner of the calculation of the redemption price;
- (iii) the name and address of the Paying Agent;
- (iv) that Securities of the Series called for redemption must be surrendered to the Paying Agent to collect the redemption price;
- (v) that interest on Securities of the Series called for redemption ceases to accrue on and after the redemption date;
- (vi) the CUSIP number, if any; and
- (vii) any other information as may be required by the terms of the particular Series or the Securities of a Series being redeemed.

At the Company's request, the Trustee shall give the notice of redemption in the Company's name and at its expense; provided that the Company shall have delivered to the Trustee, at least five Business Days (or such shorter period as the Trustee may consent to in writing) before notice of redemption is required to be delivered or caused to be delivered to Holders pursuant to this Section 3.03, an Officers' Certificate of the Company requesting that the Trustee give such notice and setting forth the information to be stated in such notice as provided in the preceding paragraph.

**Section 3.04 Effect of Notice of Redemption.** Once notice of redemption is delivered as provided in Section 3.03, Securities of a Series called for redemption become due and payable on the redemption date and at the redemption price. A notice of redemption may not be conditional. Upon surrender to the Paying Agent, such Securities shall be paid at the redemption price plus accrued interest to the redemption date; provided that installments of interest whose Stated Maturity is on or prior to the redemption date shall be payable to the Holders of such Securities (or one or more predecessor Securities) registered at the close of business on the relevant record date therefor according to their terms and the terms of this Indenture.

**Section 3.05 Deposit of Redemption Price.** Unless otherwise indicated for a particular Series by a Board Resolution, a supplemental indenture or an Officers' Certificate, on or before 11:00 a.m., New York City time, on the redemption date, the Company shall deposit with the Paying Agent money sufficient to pay the redemption price of and accrued interest, if any, on all Securities to be redeemed on that date.

**Section 3.06 Securities Redeemed in Part.** Upon surrender of a Security that is redeemed in part, the Company shall issue and the Trustee shall authenticate for the Holder a new Security of the same Series and the same maturity equal in principal amount to the unredeemed portion of the Security surrendered.

#### **ARTICLE IV COVENANTS**

**Section 4.01 Payment of Principal and Interest.** The Company covenants and agrees for the benefit of the Holders of each Series of Securities that it will duly and punctually pay the principal of and interest, if any, on the Securities of that Series in accordance with the terms of such Securities and this Indenture.

**Section 4.02 SEC Reports.** Any information, documents or other reports that the Company shall file with the Commission pursuant to Section 13 or 15(d) of the Exchange Act shall be filed with the Trustee within 15 days after the same is filed with the Commission; provided that any such information, documents or reports filed or furnished with the Commission pursuant to its Electronic Data Gathering, Analysis and Retrieval (or EDGAR) system shall be deemed filed with the Trustee as of the time such information, documents or reports are filed or furnished via EDGAR.

**Section 4.03 Compliance Certificate.** The Company shall, so long as any of the Securities are outstanding, deliver to the Trustee, within 120 days after the end of each fiscal year of the Company, an Officers' Certificate stating whether or not to the knowledge of the signers thereof the Company is in default in the performance and observance of any of the terms, provisions and conditions hereof (without regard to any period of grace or requirement of notice provided hereunder), and if a Default or Event of Default shall have occurred, specifying all such Defaults or Events of Default and the nature and status thereof of which they may have knowledge.

**Section 4.04 Stay, Extension and Usury Laws.** The Company covenants (to the extent that it may lawfully do so) that it will not at any time insist upon, plead or in any manner whatsoever claim or take the benefit or advantage of, any stay, extension or usury law wherever enacted, now or at any time hereafter in force, which may affect the covenants or the performance of this Indenture or the Securities or any other law that would prohibit or forgive the Company from paying all or any portion of the principal of, or interest on, the Securities as contemplated in the Indenture, any indenture supplemental thereto relating to the Securities or the Securities and the Company (to the extent it may lawfully do so) hereby expressly waives all benefit or advantage of any such law and covenants that it will not, by resort to any such law, hinder, delay or impede the execution of any power herein granted to the Trustee, but will suffer and permit the execution of every such power as though no such law has been enacted.

**ARTICLE V  
SUCCESSORS**

**Section 5.01 When Company May Merge, Etc.** The Company shall not consolidate with or merge with or into, or convey, transfer or lease all or substantially all of its properties and assets to, another person (a “*Successor Person*”) unless:

(a) the Company is the surviving corporation or the Successor Person (if other than the Company) is organized and validly existing under the laws of any U.S. domestic jurisdiction and expressly assumes the Company’s obligations on the Securities and under this Indenture; and

(b) immediately after giving effect to the transaction, no Default or Event of Default shall have occurred and be continuing.

The Company shall deliver to the Trustee prior to the consummation of the proposed transaction an Officers’ Certificate to the foregoing effect and an Opinion of Counsel stating that the proposed transaction and any supplemental indenture comply with this Indenture.

**Section 5.02 Successor Corporation Substituted.** Upon any consolidation or merger, or any sale, lease, conveyance or other disposition of all or substantially all of the assets of the Company in accordance with Section 5.01, the successor corporation formed by such consolidation or into or with which the Company is merged or to which such sale, lease, conveyance or other disposition is made shall succeed to, and be substituted for, and may exercise every right and power of, the Company under this Indenture with the same effect as if such Successor Person has been named as the Company herein; provided, however, that the predecessor Company in the case of a sale, conveyance or other disposition (other than a lease) shall be released from all obligations and covenants under this Indenture and the Securities.

**ARTICLE VI  
DEFAULTS AND REMEDIES**

**Section 6.01 Events of Default.**

“*Event of Default*,” wherever used herein with respect to Securities of any Series, means any one of the following events, unless in the establishing Board Resolution, supplemental indenture or Officers’ Certificate, it is provided that such Series shall not have the benefit of said Event of Default or the terms of such Event of Default have been modified or superceded as set forth in the Board Resolution, supplemental indenture or Officers’ Certificate for such Securities of any Series:

(a) default in the payment of any interest on any Security of that Series when it becomes due and payable, and continuance of such default for a period of 30 days (unless the entire amount of such payment is deposited by the Company with the Trustee or with a Paying Agent prior to the expiration of such period of 30 days); or

(b) default in the payment of principal of any Security of that Series at its Maturity; or

(c) default in the performance or breach of any covenant or warranty of the Company in this Indenture (other than a covenant or warranty for which the consequences of nonperformance or breach are addressed elsewhere in this Section 6.01 and other than a covenant or warranty that has been included in this Indenture solely for the benefit of a Series of Securities other than that Series), which default continues uncured for a period of 60 days after there has been given, by registered or certified mail, to the Company by the Trustee or to the Company and the Trustee by the Holders of not less than a majority in principal amount of the outstanding Securities of that Series a written notice specifying such default or breach and requiring it to be remedied and stating that such notice is a “*Notice of Default*” hereunder; or

(d) the Company pursuant to or within the meaning of any Bankruptcy Law:

- (i) commences a voluntary case or proceeding;
- (ii) consents to the entry of an order for relief against it in an involuntary case,
- (iii) consents to the appointment of a Custodian of it or for all or substantially all of its property,
- (iv) makes a general assignment for the benefit of its creditors, or
- (v) makes an admission in writing that it is generally unable to pay its debts as the same become due; or

(e) a court of competent jurisdiction enters 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 or for all or substantially all of its property, or
- (iii) orders the liquidation of the Company, and the order or decree remains unstayed and in effect for 90 days; or

(f) any other Event of Default provided with respect to Securities of that Series, which is specified in a Board Resolution, a supplemental indenture hereto or an Officers' Certificate, in accordance with Section 2.02(n).

The term "*Bankruptcy Law*" means Title 11 of the U.S. Code or any similar federal or state law for the relief of debtors. The term "*Custodian*" means any receiver, trustee, assignee, liquidator or similar official under any Bankruptcy Law.

**Section 6.02 Acceleration of Maturity; Rescission and Annulment.** If an Event of Default with respect to Securities of any Series at the time outstanding occurs and is continuing (other than an Event of Default referred to in Section 6.01(d) or (e)), then in every such case the Trustee or the Holders of not less than a majority in principal amount of the outstanding Securities of that Series may declare the principal amount (or, if any Securities of that Series are Discount Securities, such portion of the principal amount as may be specified in the terms of such Securities) of and accrued and unpaid interest, if any, on all of the Securities of that Series to be due and payable immediately, by a notice in writing to the Company (and to the Trustee if given by Holders), and upon any such declaration such principal amount (or specified amount) and accrued and unpaid interest, if any, shall become immediately due and payable. If an Event of Default specified in Section 6.01(d) or (e) shall occur, the principal amount (or specified amount) of and accrued and unpaid interest, if any, on all outstanding Securities shall be immediately due and payable without any declaration or other act on the part of the Trustee or any Holder. At any time after such a declaration of acceleration with respect to any Series has been made and before a judgment or decree for payment of the money due has been obtained by the Trustee as hereinafter in this Article; provided that the Holders of a majority in principal amount of the outstanding Securities of that Series, by written notice to the Company and the Trustee, may rescind and annul such declaration and its consequences if all Events of Default with respect to Securities of that Series, other than the non-payment of the principal and interest, if any, of Securities of that Series which have become due solely by such declaration of acceleration, have been cured or waived as provided in Section 6.13. No such rescission shall affect any subsequent Default or impair any right consequent thereon.



### **Section 6.03 Collection of Indebtedness and Suits for Enforcement by Trustee.**

The Company covenants that if:

(a) default is made in the payment of any interest on any Security when such interest becomes due and payable and such default continues for a period of 30 days, or

(b) default is made in the payment of principal of any Security at the Maturity thereof, then the Company will, upon demand of the Trustee, pay to it, for the benefit of the Holders of such Securities, the whole amount then due and payable on such Securities for principal and interest and, to the extent that payment of such interest shall be legally enforceable, interest on any overdue principal and any overdue interest at the rate or rates prescribed therefor in such Securities and, in addition thereto, such further amount as shall be sufficient to cover the costs and expenses of collection, including the reasonable compensation, expenses, disbursements and advances of the Trustee, its agents and counsel.

If the Company fails to pay such amounts forthwith upon such demand, the Trustee, in its own name and as trustee of an express trust, may institute a judicial proceeding for the collection of the sums so due and unpaid, may prosecute such proceeding to judgment or final decree and may enforce the same against the Company or any other obligor upon such Securities and collect the moneys adjudged or deemed to be payable in the manner provided by law out of the property of the Company or any other obligor upon such Securities, wherever situated.

If an Event of Default with respect to any Securities of any Series occurs and is continuing, the Trustee may in its discretion proceed to protect and enforce its rights and the rights of the Holders of Securities of such Series by such appropriate judicial proceedings as the Trustee shall deem most effectual to protect and enforce any such rights, whether for the specific enforcement of any covenant or agreement in this Indenture or in aid of the exercise of any power granted herein, or to enforce any other proper remedy.

**Section 6.04 Trustee May File Proofs of Claim.** In case of the pendency of any receivership, insolvency, liquidation, bankruptcy, reorganization, arrangement, adjustment, composition or other judicial proceeding relative to the Company or any other obligor upon the Securities or the property of the Company or of such other obligor or their creditors, the Trustee (irrespective of whether the principal of the Securities shall then be due and payable as therein expressed or by declaration or otherwise and irrespective of whether the Trustee shall have made any demand on the Company for the payment of overdue principal or interest) shall be entitled and empowered, by intervention in such proceeding or otherwise, (a) to file and prove a claim for the whole amount of principal and interest owing and unpaid in respect of the Securities and to file such other papers or documents as may be necessary or advisable in order to have the claims of the Trustee (including any claim for the reasonable compensation, expenses, disbursements and advances of the Trustee, its agents and counsel) and of the Holders allowed in such judicial proceeding, and (b) to collect and receive any moneys or other property payable or deliverable on any such claims and to distribute the same, and any custodian, receiver, assignee, trustee, liquidator, sequestrator or other similar official in any such judicial proceeding is hereby authorized by each Holder to make such payments to the Trustee and, in the event that the Trustee shall consent to the making of such payments directly to the Holders, to pay to the Trustee any amount due it for the reasonable compensation, expenses, disbursements and advances of the Trustee, its agents and counsel, and any other amounts due the Trustee under Section 7.07. Nothing herein contained shall be deemed to authorize the Trustee to authorize or consent to or accept or adopt on behalf of any Holder any plan of reorganization, arrangement, adjustment or composition affecting the Securities or the rights of any Holder thereof or to authorize the Trustee to vote in respect of the claim of any Holder in any such proceeding.

**Section 6.05 Trustee May Enforce Claims Without Possession of Securities.** All rights of action and claims under this Indenture or the Securities may be prosecuted and enforced by the Trustee without the possession of any of the Securities or the production thereof in any proceeding relating thereto, and any such proceeding instituted by the Trustee shall be brought in its own name as trustee of an express trust, and any recovery of judgment shall, after provision for the payment of the reasonable compensation, expenses, disbursements and advances of the Trustee, its agents and counsel, be for the ratable benefit of the Holders of the Securities in respect of which such judgment has been recovered.

**Section 6.06 Application of Money Collected.**

Any money collected by the Trustee pursuant to this Article shall be applied in the following order, at the date or dates fixed by the Trustee and, in case of the distribution of such money on account of principal or interest, upon presentation of the Securities and the notation thereon of the payment if only partially paid and upon surrender thereof if fully paid:

First: To the payment of all amounts due the Trustee under Section 7.07; and

Second: To the payment of the amounts then due and unpaid for principal of and interest on the Securities in respect of which or for the benefit of which such money has been collected, ratably, without preference or priority of any kind, according to the amounts due and payable on such Securities for principal and interest, respectively; and

Third: To the Company.

**Section 6.07 Limitation on Suits.** No Holder of any Security of any Series shall have any right to institute any proceeding, judicial or otherwise, with respect to this Indenture, or for the appointment of a receiver or trustee, or for any other remedy hereunder, unless:

(a) such Holder has previously given written notice to the Trustee of a continuing Event of Default with respect to the Securities of that Series;

(b) the Holders of at least a majority in principal amount of the outstanding Securities of that Series shall have made written request to the Trustee to institute proceedings in respect of such Event of Default in its own name as Trustee hereunder;

(c) such Holder or Holders shall have offered to the Trustee security or indemnity satisfactory to it against the costs, expenses and liabilities to be incurred in compliance with such request;

(d) the Trustee for 60 days after its receipt of such notice, request and offer of indemnity has failed to institute any such proceeding; and

(e) no direction inconsistent with such written request has been given to the Trustee during such 60-day period by the Holders of a majority in principal amount of the outstanding Securities of that Series; it being understood and intended that no one or more of such Holders shall have any right in any manner whatever by virtue of, or by availing of, any provision of this Indenture to affect, disturb or prejudice the rights of any other of such Holders, or to obtain or to seek to obtain priority or preference over any other of such Holders or to enforce any right under this Indenture, except in the manner herein provided and for the equal and ratable benefit of all such Holders.

**Section 6.08 Unconditional Right of Holders to Receive Principal and Interest.** Notwithstanding any other provision in this Indenture, the Holder of any Security shall have the right, which is absolute and unconditional, to receive payment of the principal of and interest, if any, on such Security on the Stated Maturity or Stated Maturities expressed in such Security (or, in the case of redemption, on the redemption date) and to institute suit for the enforcement of any such payment, and such rights shall not be impaired without the consent of such Holder.

**Section 6.09 Restoration of Rights and Remedies.** If the Trustee or any Holder has instituted any proceeding to enforce any right or remedy under this Indenture and such proceeding has been discontinued or abandoned for any reason, or has been determined adversely to the Trustee or to such Holder, then and in every such case, subject to any determination in such proceeding, the Company, the Trustee and the Holders shall be restored severally and respectively to their former positions hereunder and thereafter all rights and remedies of the Trustee and the Holders shall continue as though no such proceeding had been instituted.

**Section 6.10 Rights and Remedies Cumulative.** Except as otherwise provided with respect to the replacement or payment of mutilated, destroyed, lost or stolen Securities in Section 2.08, no right or remedy herein conferred upon or reserved to the Trustee or to the Holders is intended to be exclusive of any other right or remedy, and every right and remedy shall, to the extent permitted by law, be cumulative and in addition to every other right and remedy given hereunder or now or hereafter existing at law or in equity or otherwise. The assertion or employment of any right or remedy hereunder, or otherwise, shall not, to the extent permitted by law, prevent the concurrent assertion or employment of any other appropriate right or remedy.

**Section 6.11 Delay or Omission Not Waiver.** No delay or omission of the Trustee or of any Holder of any Securities to exercise any right or remedy accruing upon any Event of Default shall impair any such right or remedy or constitute a waiver of any such Event of Default or an acquiescence therein. Every right and remedy given by this Article or by law to the Trustee or to the Holders may be exercised from time to time, and as often as may be deemed expedient, by the Trustee or by the Holders, as the case may be.

**Section 6.12 Control by Holders.** Subject to Section 7.02(f), the Holders of a majority in principal amount of the outstanding Securities of any Series shall have the right to direct the time, method and place of conducting any proceeding for any remedy available to the Trustee, or exercising any trust or power conferred on the Trustee, with respect to the Securities of such Series, provided that:

(a) such direction shall not be in conflict with any rule of law or with this Indenture,

(b) the Trustee may take any other action deemed proper by the Trustee which is not inconsistent with such direction, and

(c) subject to the provisions of Section 7.01, the Trustee shall have the right to decline to follow any such direction if the Trustee in good faith shall, by a Responsible Officer of the Trustee, determine that the proceeding so directed would involve the Trustee in personal liability.

**Section 6.13 Waiver of Past Defaults.** The Holders of not less than a majority in principal amount of the outstanding Securities of any Series may on behalf of the Holders of all the Securities of such Series waive any past Default hereunder with respect to such Series and its consequences, except a Default (i) in the payment of the principal of or interest on any Security of such Series (provided, however, that the Holders of a majority in principal amount of the outstanding Securities of any Series may rescind an acceleration and its consequences, including any related payment default that resulted from such acceleration) or (ii) in respect of a covenant or provision hereof which cannot be modified or amended without the consent of the Holder of each outstanding Security of such Series affected. Upon any such waiver, such Default shall cease to exist, and any Event of Default arising therefrom shall be deemed to have been cured, for every purpose of this Indenture; but no such waiver shall extend to any subsequent or other Default or impair any right consequent thereon.

**Section 6.14 Undertaking for Costs.** All parties to this Indenture agree, and each Holder of any Security by his acceptance thereof shall be deemed to have agreed, that any court may in its discretion require, in any suit for the enforcement of any right or remedy under this Indenture, or in any suit against the Trustee for any action taken, suffered or omitted by it as Trustee, the filing by any party litigant in such suit of an undertaking to pay the costs of such suit, and that such court may in its discretion assess reasonable costs, including reasonable attorneys' fees, against any party litigant in such suit, having due regard to the merits and good faith of the claims or defenses made by such party litigant; but the provisions of this Section shall not apply to any suit instituted by the Company, to any suit instituted by the Trustee, to any suit instituted by any Holder, or group of Holders, holding in the aggregate more than 10% in principal amount of the outstanding Securities of any Series, or to any suit instituted by any Holder for the enforcement of the payment of the principal of or interest on any Security on or after the Stated Maturity or Stated Maturities expressed in such Security (or, in the case of redemption, on the redemption date).

## ARTICLE VII TRUSTEE

### Section 7.01 Duties of Trustee.

(a) If an Event of Default has occurred and is continuing, the Trustee shall exercise the rights and powers vested in it by this Indenture and use the same degree of care and skill in their exercise as a prudent person would exercise or use under the circumstances in the conduct of such person's own affairs.

(b) Except during the continuance of an Event of Default:

(i) The Trustee need perform only those duties that are specifically set forth in this Indenture and no others and no implied covenants or obligations shall be read into this Indenture against the Trustee.

(ii) In the absence of bad faith on its part, the Trustee may conclusively rely and is fully protected, as to the truth of the statements and the correctness of the opinions expressed therein, upon Officers' Certificates or Opinions of Counsel furnished to the Trustee and conforming to the requirements of this Indenture; however, in the case of any such Officers' Certificates or Opinions of Counsel which by any provisions hereof are specifically required to be furnished to the Trustee, the Trustee shall examine such Officers' Certificates and Opinions of Counsel to determine whether or not they conform to the requirements of this Indenture (but need not confirm or investigate the accuracy of mathematical calculations or other facts stated therein).

(c) The Trustee may not be relieved from liability for its own negligent action, its own negligent failure to act or its own willful misconduct, except that:

(i) This paragraph does not limit the effect of paragraph (b) of this Section.

(ii) The Trustee shall not be liable for any error of judgment made in good faith by a Responsible Officer, unless it is proved that the Trustee was negligent in ascertaining the pertinent facts.

(iii) The Trustee shall not be liable with respect to any action taken, suffered or omitted to be taken by it with respect to Securities of any Series in good faith in accordance with the direction of the Holders of a majority in principal amount of the outstanding Securities of such Series relating to the time, method and place of conducting any proceeding for any remedy available to the Trustee, or exercising any trust or power conferred upon the Trustee, under this Indenture with respect to the Securities of such Series.

(d) Every provision of this Indenture that in any way relates to the Trustee is subject to paragraph (a), (b) and (c) of this Section.

(e) The Trustee may refuse to perform any duty or exercise any right or power at the request or direction of any Holder unless it receives indemnity reasonably satisfactory to it against any loss, liability or expense.

(f) The Trustee shall not be liable for interest on any money received by it except as the Trustee may agree in writing with the Company. Money held in trust by the Trustee need not be segregated from other funds except to the extent required by law.

(g) No provision of this Indenture shall require the Trustee to risk its own funds or otherwise incur any financial liability in the performance of any of its duties, or in the exercise of any of its rights or powers, if it shall have reasonable grounds for believing that repayment of such funds or adequate indemnity against such risk is not reasonably assured to it.

(h) The rights, privileges, protections, immunities and benefits given to the Trustee, including the right to be indemnified, are extended to, and shall be enforceable by the Trustee in each of its capacities hereunder and to its agents. The provisions set forth in paragraphs (a), (b) and (c) of this Section shall apply to the Trustee in each of its capacities hereunder and its agents.

#### **Section 7.02 Rights of Trustee.**

(a) The Trustee may conclusively rely on and shall be protected in acting or refraining from acting upon any document believed by it to be genuine and to have been signed or presented by the proper person. The Trustee need not investigate any fact or matter stated in the document.

(b) Before the Trustee acts or refrains from acting at the direction of the Company, it may require an Officers' Certificate. The Trustee shall not be liable for any action it takes or omits to take in good faith in reliance on such Officers' Certificate.

(c) The Trustee may act through agents and shall not be responsible for the misconduct or negligence of any agent appointed with due care. No Depository shall be deemed an agent of the Trustee, and the Trustee shall not be responsible for any act or omission by any Depository.

(d) The Trustee shall not be liable for any action it takes or omits to take in good faith which it believes to be authorized or within its rights or powers, provided that the Trustee's conduct does not constitute negligence or willful misconduct.

(e) The Trustee may consult with counsel, and the advice of such counsel or any Opinion of Counsel shall be full and complete authorization and protection in respect of any action taken, suffered or omitted by it hereunder without negligence and in good faith and in reliance thereon.

(f) The Trustee shall be under no obligation to exercise any of the rights or powers vested in it by this Indenture at the request or direction of any of the Holders of Securities unless such Holders shall have offered to the Trustee security or indemnity satisfactory to it against the costs, expenses and liabilities which might be incurred by it in compliance with such request or direction.

(g) The Trustee shall not be bound to make any investigation into the facts or matters stated in any resolution, certificate, statement, instrument, opinion, report, notice, request, direction, consent, order, bond, debenture, note, other evidence of indebtedness or other paper or document believed by the Trustee to be genuine and to have been signed or delivered by the proper person.

(h) The Trustee shall not be deemed to have notice of any Default or Event of Default, other than a failure by the Company to make any payment hereunder when due if the Trustee is the Paying Agent, unless a Responsible Officer of the Trustee has actual knowledge thereof or unless written notice of any event which is in fact such a default is received by the Trustee at the Corporate Trust Office of the Trustee, and such notice references the Securities generally or the Securities of a particular Series and this Indenture and states that it is a "notice of default."

(i) The permissive rights of the Trustee enumerated herein shall not be construed as duties.

(j) In no event shall the Trustee be responsible or liable for any special, indirect, punitive, incidental or consequential loss or damage of any kind whatsoever (including, but not limited to, lost profits) irrespective of whether the Trustee has been advised of the likelihood of such loss or damage and regardless of the form of action.

(k) Neither the Trustee nor any Agent shall be responsible or liable for any failure or delay in the performance of its obligation under this Indenture arising out of or caused, directly or indirectly, by circumstances beyond its reasonable control, including, without limitation, acts of God; earthquakes; fire; flood; wars; acts of terrorism; civil or military disturbances; sabotage; epidemic; riots; interruptions, loss or malfunctions of utilities, computer (hardware or software) or communications services; accidents; labor disputes; acts of civil or military authority or governmental action; it being understood that each of the Trustee and Agents shall use commercially reasonable efforts which are consistent with accepted practices in the banking industry to resume performance as soon as reasonably practicable under the circumstances.

(l) The Trustee shall not be required to give any bond or surety in respect of the performance of its powers and duties hereunder.

**Section 7.03 Individual Rights of Trustee.** The Trustee in its individual or any other capacity may become the owner or pledgee of Securities and may otherwise deal with the Company or an Affiliate of the Company with the same rights it would have if it were not Trustee. Any Agent may do the same with like rights. The Trustee is also subject to Sections 7.10 and 7.11.

**Section 7.04 Trustee's Disclaimer.** The Trustee makes no representation as to the validity or adequacy of this Indenture or the Securities, it shall not be accountable for the Company's use of the proceeds from the Securities, and it shall not be responsible for any statement in the Securities other than its authentication.

**Section 7.05 Notice of Defaults.** If a Default or Event of Default occurs and is continuing with respect to the Securities of any Series and if it is known to a Responsible Officer of the Trustee, the Trustee shall deliver to each Holder of the Securities of that Series notice of a Default or Event of Default within 90 days after it occurs or, if later, after a Responsible Officer of the Trustee has knowledge of such Default or Event of Default. Except in the case of a Default or Event of Default in payment of principal of or interest on any Security of any Series, the Trustee may withhold the notice if and so long as it in good faith determines that withholding the notice is in the interests of Holders of that Series.

**Section 7.06 Reports by Trustee to Holders.** Within 60 days after March 15 in each year, the Trustee shall transmit by deliver to all Holders, as their names and addresses appear on the register kept by the Registrar a brief report dated as of such March 15, in accordance with, and to the extent required under, TIA Section 313. A copy of each report at the time of its delivery to Holders of any Series shall be filed with the SEC and each stock exchange on which the Securities of that Series are listed. The Company shall promptly notify the Trustee when Securities of any Series are listed on any stock exchange.

**Section 7.07 Compensation and Indemnity.** The Company shall pay to the Trustee from time to time compensation for its services as the Company and the Trustee shall from time to time agree upon in writing. The Trustee's compensation shall not be limited by any law on compensation of a trustee of an express trust. The Company shall reimburse the Trustee upon request for all reasonable out-of-pocket expenses incurred by it. Such expenses shall include the reasonable compensation and expenses of the Trustee's agents and counsel. The Company shall indemnify each of the Trustee and any predecessor Trustee (including the cost of defending itself) against any loss, liability or expense, including taxes (other than taxes based upon, measured by or determined by the income of the Trustee) incurred by it except as set forth in this Section 7.07 in the performance of its duties under this Indenture as Trustee or Agent. The Trustee shall notify the Company promptly of any claim for which it may seek indemnity. Failure or delay by the Trustee to so notify the Company of any claim for which it may seek indemnity shall not relieve the Company of its obligations hereunder except to the extent such failure or delay shall have materially prejudiced the Company. The Company shall defend the claim and the Trustee shall cooperate in the defense. The Trustee may have one separate counsel and the Company shall pay the reasonable fees and expenses of such counsel. The Company need not pay for any settlement made without its consent, which consent shall not be unreasonably withheld. This indemnification shall apply to officers, directors, employees, shareholders and agents of the Trustee. The Company need not reimburse any expense or indemnify against any loss or liability incurred by the Trustee or by any officer, director, employee, shareholder or agent of the Trustee through the gross negligence or willful misconduct of any such persons as determined by a final order of a court of competent jurisdiction. When the Trustee incurs expenses or renders services after an Event of Default specified in Section 6.01(d) or (e) occurs, the expenses and the compensation for the services are intended to constitute expenses of administration under any insolvency, bankruptcy or similar law. The provisions of this Section shall survive the resignation or removal of the Trustee and the termination or discharge of this Indenture.

**Section 7.08 Replacement of Trustee.** A resignation or removal of the Trustee and appointment of a successor Trustee shall become effective only upon the successor Trustee's acceptance of appointment as provided in this Section. The Trustee may resign with respect to the Securities of one or more Series by so notifying the Company at least 30 days prior to the date of the proposed resignation. The Holders of a majority in principal amount of the Securities of any Series may remove the Trustee with respect to that Series by so notifying the Trustee and the Company. The Company may remove the Trustee with respect to Securities of one or more Series if:

(a) the Trustee fails to comply with Section 7.10;

(b) the Trustee is adjudged bankrupt or insolvent or an order for relief is entered with respect to the Trustee under any insolvency, bankruptcy or similar law;

(c) a custodian or public officer takes charge of the Trustee or its property; or

(d) the Trustee becomes incapable of acting.

If the Trustee resigns or is removed or if a vacancy exists in the office of Trustee for any reason, the Company shall promptly appoint a successor Trustee.

If a successor Trustee with respect to the Securities of any one or more Series does not take office within 60 days after the retiring Trustee resigns or is removed, the retiring Trustee, the Company or the Holders of at least a majority in principal amount of the Securities of the applicable Series may petition any court of competent jurisdiction for the appointment of a successor Trustee.

A successor Trustee shall deliver a written acceptance of its appointment to the retiring Trustee and to the Company. Immediately after that, the retiring Trustee shall transfer all property held by it as Trustee to the successor Trustee subject to the lien provided for in Section 7.07, the resignation or removal of the retiring Trustee shall become effective, and the successor Trustee shall have all the rights, powers and duties of the Trustee with respect to each Series of Securities for which it is acting as Trustee under this Indenture. A successor Trustee shall deliver a notice of its succession to each Holder of each such Series. Notwithstanding replacement of the Trustee pursuant to this Section 7.08, the Company's obligations under Section 7.07 hereof shall continue for the benefit of the retiring Trustee with respect to expenses and liabilities incurred by it prior to the date of such replacement.

**Section 7.09 Successor Trustee by Merger, etc.** If the Trustee consolidates with, merges or converts into, or transfers all or substantially all of its corporate trust business (including administration of this Indenture) to, another corporation, the successor corporation without any further act shall be the successor Trustee.

**Section 7.10 Eligibility; Disqualification.** This Indenture shall always have a Trustee who satisfies the requirements of TIA Section 310(a)(1), (2) and (5) and has a combined capital and surplus of at least \$50,000,000. The Trustee shall comply with TIA Section 310(b).

**Section 7.11 Preferential Collection of Claims Against Company.** The Trustee is subject to TIA Section 311(a), excluding any creditor relationship listed in TIA Section 311(b). A Trustee who has resigned or been removed shall be subject to TIA Section 311(a) to the extent indicated.

## ARTICLE VIII SATISFACTION AND DISCHARGE; DEFEASANCE

### **Section 8.01 Satisfaction and Discharge of Indenture.**

This Indenture shall upon Company Order cease to be of further effect (except as hereinafter provided in this Section 8.01), and the Trustee, at the expense of the Company, shall execute proper instruments acknowledging satisfaction and discharge of this Indenture, when

(a) any of the following shall have occurred:

(i) no Securities have been issued hereunder;

(ii) all Securities theretofore authenticated and delivered (other than Securities that have been destroyed, lost or stolen and that have been replaced or paid) have been delivered to the Trustee for cancellation; or



(iii) all such Securities not theretofore delivered to the Trustee for cancellation (1) have become due and payable, or (2) will become due and payable at their Stated Maturity within one year, or (3) are to be called for redemption within one year under arrangements satisfactory to the Trustee for the giving of notice of redemption by the Trustee in the name, and at the expense, of the Company; and the Company has irrevocably deposited or caused to be deposited with the Trustee as trust funds in trust an amount sufficient for the purpose of paying and discharging the entire indebtedness on such Securities not theretofore delivered to the Trustee for cancellation, for principal and interest to the date of such deposit (in the case of Securities which have become due and payable on or prior to the date of such deposit) or to the Stated Maturity or redemption date, as the case may be;

(b) the Company has paid or caused to be paid all other sums payable hereunder by the Company; and

(c) the Company has delivered to the Trustee an Officers' Certificate and an Opinion of Counsel, each stating that all conditions precedent herein provided for relating to the satisfaction and discharge of this Indenture have been complied with. Notwithstanding the satisfaction and discharge of this Indenture, the obligations of the Company to the Trustee under Section 7.07 and, if money shall have been deposited with the Trustee pursuant to clause (a) of this Section, the provisions of Sections 2.04, 2.05, 2.07, 2.08, 8.01, 8.02 and 8.05 shall survive.

#### **Section 8.02 Application of Trust Funds; Indemnification.**

(a) Subject to the provisions of Section 8.05, all money deposited with the Trustee pursuant to Section 8.01, all money and U.S. Government Obligations or Foreign Government Obligations deposited with the Trustee pursuant to Section 8.03 or 8.04 and all money received by the Trustee in respect of U.S. Government Obligations or Foreign Government Obligations deposited with the Trustee pursuant to Section 8.03 or 8.04, shall be held in trust and applied by it, in accordance with the provisions of the Securities and this Indenture, to the payment, either directly or through any Paying Agent (other than the Company acting as its own Paying Agent) as the Trustee may determine, to the persons entitled thereto, of the principal and interest for whose payment such money has been deposited with or received by the Trustee or analogous payments as contemplated by Sections 8.03 or 8.04.

(b) The Company shall pay and shall indemnify the Trustee against any tax, fee or other charge imposed on or assessed against U.S. Government Obligations or Foreign Government Obligations deposited pursuant to Sections 8.03 or 8.04 or the interest and principal received in respect of such obligations other than any payable by or on behalf of Holders.

(c) The Trustee shall deliver or pay to the Company from time to time upon Company Request any U.S. Government Obligations or Foreign Government Obligations or money held by it as provided in Sections 8.03 or 8.04 which, in the opinion of a nationally recognized firm of independent certified public accountants expressed in a written certification thereof delivered to the Trustee, are then in excess of the amount thereof which then would have been required to be deposited for the purpose for which such U.S. Government Obligations or Foreign Government Obligations or money were deposited or received. This provision shall not authorize the sale by the Trustee of any U.S. Government Obligations or Foreign Government Obligations held under this Indenture.

**Section 8.03 Legal Defeasance of Securities of any Series.** Unless this Section 8.03 is otherwise specified, pursuant to Section 2.02(s), to be inapplicable to Securities of any Series, the Company shall be deemed to have paid and discharged the entire indebtedness on all the outstanding Securities of any Series on the 91st day after the date of the deposit referred to in subparagraph (d) hereof, and the provisions of this Indenture, as it relates to such outstanding Securities of such Series, shall no longer be in effect (and the Trustee, at the expense of the Company, shall, at Company Request, execute such instruments reasonably requested by the Company acknowledging the same), except as to:

(a) the rights of Holders of Securities of such Series to receive, from the trust funds described in subparagraph (d) hereof, (i) payment of the principal of and each installment of principal of and interest on the outstanding Securities of such Series on the Stated Maturity of such principal or installment of principal or interest, and (ii) the benefit of any mandatory sinking fund payments applicable to the Securities of such Series on the day on which such payments are due and payable in accordance with the terms of this Indenture and the Securities of such Series; and

(b) the provisions of Sections 2.04, 2.05, 2.07, 2.08, 8.02, 8.03 and 8.05; and

(c) the rights, powers, trust and immunities of the Trustee hereunder; provided that, the following conditions shall have been satisfied:

(d) with reference to this Section 8.03, the Company shall have deposited or caused to be irrevocably deposited (except as provided in Section 8.02(c)) with the Trustee as trust funds in trust for the purpose of making the following payments, specifically pledged as security for and dedicated solely to the benefit of the Holders of such Securities (i) in the case of Securities of such Series denominated in Dollars, cash in Dollars and/or U.S. Government Obligations, or (ii) in the case of Securities of such Series denominated in a Foreign Currency (other than a composite currency), money and/or Foreign Government Obligations, which through the payment of interest and principal in respect thereof in accordance with their terms, will provide (and without reinvestment and assuming no tax liability will be imposed on such Trustee), not later than one day before the due date of any payment of money, an amount in cash, sufficient, in the opinion of a nationally recognized firm of independent public accountants expressed in a written certification thereof delivered to the Trustee, to pay and discharge each installment of principal of and interest, if any, on and any mandatory sinking fund payments in respect of all the Securities of such Series on the dates such installments of interest or principal and such sinking fund payments are due;

(e) such deposit will not result in a breach or violation of, or constitute a default under, this Indenture or any other agreement or instrument to which the Company is a party or by which it is bound;

(f) no Default or Event of Default with respect to the Securities of such Series shall have occurred and be continuing on the date of such deposit or during the period ending on the 91st day after such date;

(g) the Company shall have delivered to the Trustee an Officers' Certificate and an Opinion of Counsel to the effect that (i) the Company has received from, or there has been published by, the Internal Revenue Service a ruling, or (ii) since the date of execution of this Indenture, there has been a change in the applicable Federal income tax law, in either case to the effect that, and based thereon such Opinion of Counsel shall confirm that, the Holders of the Securities of such Series will not recognize income, gain or loss for Federal income tax purposes as a result of such deposit, defeasance and discharge and will be subject to Federal income tax on the same amounts and in the same manner and at the same times as would have been the case if such deposit, defeasance and discharge had not occurred;

(h) the Company shall have delivered to the Trustee an Officers' Certificate stating that the deposit was not made by the Company with the intent of preferring the Holders of the Securities of such Series over any other creditors of the Company or with the intent of defeating, hindering, delaying or defrauding any other creditors of the Company;

(i) the Company shall have delivered to the Trustee an Officers' Certificate and an Opinion of Counsel, each stating that all conditions precedent provided for relating to the defeasance contemplated by this Section have been complied with; and

(j) such defeasance shall not result in the trust arising from such deposit constituting an investment company within the meaning of the Investment Company Act of 1940, as amended, unless such trust shall be registered under such Act or exempt from registration thereunder.

**Section 8.04 Covenant Defeasance.** Unless this Section 8.04 is otherwise specified, pursuant to Section 2.02(s), to be inapplicable to Securities of any Series, on and after the 91st day after the date of the deposit referred to in subparagraph (a) hereof, the Company may omit to comply with respect to the Securities of any Series with any term, provision or condition set forth under Sections 4.02, 4.03, and 5.01 as well as any additional covenants specified in a supplemental indenture for such Series of Securities or a Board Resolution or an Officers' Certificate delivered pursuant to Section 2.02 (and the failure to comply with any such covenants shall not constitute a Default or Event of Default with respect to such Series under Section 6.01) and the occurrence of any event specified in a supplemental indenture for such Series of Securities or a Board Resolution or an Officers' Certificate delivered pursuant to Section 2.02 and designated as an Event of Default shall not constitute a Default or Event of Default hereunder, with respect to the Securities of such Series, provided that the following conditions shall have been satisfied:

(a) with reference to this Section 8.04, the Company has deposited or caused to be irrevocably deposited (except as provided in Section 8.02(c)) with the Trustee as trust funds in trust for the purpose of making the following payments specifically pledged as security for, and dedicated solely to, the benefit of the Holders of such Securities (i) in the case of Securities of such Series denominated in Dollars, cash in Dollars and/or U.S. Government Obligations, or (ii) in the case of Securities of such Series denominated in a Foreign Currency (other than a composite currency), money and/or Foreign Government Obligations, which through the payment of interest and principal in respect thereof in accordance with their terms, will provide (and without reinvestment and assuming no tax liability will be imposed on such Trustee), not later than one day before the due date of any payment of money, an amount in cash, sufficient, in the opinion of a nationally recognized firm of independent certified public accountants expressed in a written certification thereof delivered to the Trustee, to pay and discharge each installment of principal of and interest, if any, on and any mandatory sinking fund payments in respect of the Securities of such Series on the dates such installments of interest or principal and such sinking fund payments are due;

(b) such deposit will not result in a breach or violation of, or constitute a default under, this Indenture or any other agreement or instrument to which the Company is a party or by which it is bound;

(c) no Default or Event of Default with respect to the Securities of such Series shall have occurred and be continuing on the date of such deposit or during the period ending on the 91st day after such date;

(d) the Company shall have delivered to the Trustee an Opinion of Counsel to the effect that Holders of the Securities of such Series will not recognize income, gain or loss for federal income tax purposes as a result of such deposit and covenant defeasance and will be subject to federal income tax on the same amounts, in the same manner and at the same times as would have been the case if such deposit and covenant defeasance had not occurred;

(e) the Company shall have delivered to the Trustee an Officers' Certificate and an Opinion of Counsel, each stating that all conditions precedent herein provided for relating to the covenant defeasance contemplated by this Section have been complied with; and

(f) Such defeasance shall not result in the trust arising from such deposit constituting an investment company within the meaning of the Investment Company Act of 1940, as amended, unless such trust shall be registered under such Act or exempt from registration thereunder.

**Section 8.05 Repayment to Company.** The Trustee and the Paying Agent shall pay to the Company upon written request any money held by them for the payment of principal and interest that remains unclaimed for two years, and after such time, Holders entitled to the money must look to the Company for payment as general creditors unless an applicable abandoned property law designates another person.

**Section 8.06 Reinstatement.** If the Trustee or the Paying Agent is unable to apply any money deposited with respect to Securities of any series in accordance with Section 8.01 by reason of any legal proceeding or by reason of any order or judgment of any court or governmental authority enjoining, restraining or otherwise prohibiting such application, the obligations of the Company under this Indenture with respect to the Securities of such series and under the Securities of such series shall be revived and reinstated as though no deposit had occurred pursuant to Section 8.01 until such time as the Trustee or the Paying Agent is permitted to apply all such money in accordance with Section 8.01; provided, however, that if the Company has made any payment of principal of, premium (if any) or interest on any Additional Amounts with respect to any Securities because of the reinstatement of its obligations, the Company shall be subrogated to the rights of the Holders of such Securities to receive such payment from the money held by the Trustee or the Paying Agent.

## ARTICLE IX AMENDMENTS AND WAIVERS

**Section 9.01 Without Consent of Holders.** Unless otherwise specified for a particular Series by a Board Resolution, a supplemental indenture or an Officers' Certificate, the Company and the Trustee may amend or supplement this Indenture or the Securities of one or more Series without the consent of any Holder:

(a) to evidence the succession of another person to the Company under this Indenture and the Securities and the assumption by any such Successor Person of the obligations of the Company hereunder and under the Securities;

(b) to add covenants of the Company for the benefit of the Holders of all or any series of Securities (and if such covenants are to be for the benefit of less than all series of Securities, stating that such covenants are expressly being included for the benefit of such series) or to surrender any right or power herein conferred upon the Company provided such action does not adversely affect the interests of the Holders;

(c) to add any additional Events of Default;

(d) to add to or change any of the provisions of this Indenture to such extent as shall be necessary to permit or facilitate the issuance of Securities in bearer form, registrable or not registrable as to principal, and with or without interest coupons, or to permit or facilitate the issuance of Securities in uncertificated form;

(e) to add to, change or eliminate any of the provisions of this Indenture in respect of one or more series of Securities, provided that any such addition, change or elimination (A) shall neither (i) apply to any Security of any series created prior to the execution of such supplemental indenture and entitled to the benefit of such provision nor (ii) modify the rights of the Holder of any such Security with respect to such provision or (B) shall become effective only when there is no such Security Outstanding;

(f) to establish the forms or terms of the Securities of any series issued pursuant to the terms hereof;

(g) to cure any ambiguity or correct any inconsistency in this Indenture;

(h) to evidence and provide for the acceptance of appointment hereunder by a successor Trustee with respect to the Securities of one or more series and to add to or change any of the provisions of this Indenture as shall be necessary to provide for or facilitate the administration of the trusts hereunder by more than one Trustee;

(i) to qualify this Indenture under the Trust Indenture Act;

(j) to provide for uncertificated securities in addition to certificated securities;

(k) to supplement any provisions of this Indenture necessary to permit or facilitate the defeasance and discharge of any series of Securities, provided that such action does not adversely affect the interests of the Holders of Securities of such series or any other series;

(l) to conform the Indenture to any Description of Securities for a particular Series of Securities; and

(m) to comply with the rules or regulations of any securities exchange or automated quotation system on which any of the Securities may be listed or traded.

**Section 9.02 With Consent of Holders.** The Company and the Trustee may enter into a supplemental indenture with the written consent of the Holders of at least a majority in principal amount of the outstanding Securities of each Series affected by such supplemental indenture (including consents obtained in connection with a tender offer or exchange offer for the Securities of such Series), for the purpose of adding any provisions to or changing in any manner or eliminating any of the provisions of this Indenture or of any supplemental indenture or of modifying in any manner the rights of the Holders of each such Series. Except as provided in Section 6.13, the Holders of at least a majority in principal amount of the outstanding Securities of any Series by notice to the Trustee (including consents obtained in connection with a tender offer or exchange offer for the Securities of such Series) may waive compliance by the Company with any provision of this Indenture or the Securities with respect to such Series. It shall not be necessary for the consent of the Holders of Securities under this Section 9.02 to approve the particular form of any proposed supplemental indenture or waiver, but it shall be sufficient if such consent approves the substance thereof. After a supplemental indenture or waiver under this section becomes effective, the Company shall deliver to the Holders of Securities affected thereby a notice briefly describing the supplemental indenture or waiver. Any failure by the Company to deliver such notice, or any defect therein, shall not, however, in any way impair or affect the validity of any such supplemental indenture or waiver.

**Section 9.03 Limitations.** Unless otherwise specified for a particular Series by a Board Resolution, a supplemental indenture or an Officers' Certificate, without the consent of each Holder affected, an amendment or waiver may not:

(a) reduce the amount of Securities whose Holders must consent to an amendment, supplement or waiver;

(b) reduce the rate of or extend the time for payment of interest (including default interest) on any Security;

(c) reduce the principal or change the Stated Maturity of any Security or reduce the amount of, or postpone the date fixed for, the payment of any sinking fund or analogous obligation;

(d) reduce the principal amount of Discount Securities payable upon acceleration of the maturity thereof;

(e) waive a Default or Event of Default in the payment of the principal of or interest, if any, on any Security (except a rescission of acceleration of the Securities of any Series by the Holders of at least a majority in principal amount of the outstanding Securities of such Series and a waiver of the payment default that resulted from such acceleration);

(f) make the principal of or interest, if any, on any Security payable in any currency other than that stated in the Security;

(g) make any change in Sections 6.08, 6.13, or 9.03; or

(h) waive a redemption payment with respect to any Security.

**Section 9.04 Compliance with Trust Indenture Act.** Every amendment to this Indenture or the Securities of one or more Series shall be set forth in a supplemental indenture hereto that complies with the TIA as then in effect.

**Section 9.05 Revocation and Effect of Consents.** Until an amendment is set forth in a supplemental indenture or a waiver becomes effective, a consent to it by a Holder of a Security is a continuing consent by the Holder and every subsequent Holder of a Security or portion of a Security that evidences the same debt as the consenting Holder's Security, even if notation of the consent is not made on any Security. However, any such Holder or subsequent Holder may revoke the consent as to his Security or portion of a Security if the Trustee receives the notice of revocation before the date of the supplemental indenture or the date the waiver becomes effective. Any amendment or waiver once effective shall bind every Holder of each Series affected by such amendment or waiver unless it is of the type described in any of clauses (a) through (h) of Section 9.03. In that case, the amendment or waiver shall bind each Holder of a Security who has consented to it and every subsequent Holder of a Security or portion of a Security that evidences the same debt as the consenting Holder's Security.

**Section 9.06 Notation on or Exchange of Securities.** The Trustee may place an appropriate notation about an amendment or waiver on any Security of any Series thereafter authenticated. The Company in exchange for Securities of that Series may issue and the Trustee shall authenticate upon request new Securities of that Series that reflect the amendment or waiver.

**Section 9.07 Trustee Protected.** In executing, or accepting the additional trusts created by, any supplemental indenture permitted by this Article or the modifications thereby of the trusts created by this Indenture, the Trustee shall receive, in addition to the documents required by Section 10.04, and (subject to Section 7.01) shall be fully protected in relying upon, an Opinion of Counsel stating that all conditions precedent in this Indenture to the execution of such supplemental indenture, if any, have been complied with, such supplemental indenture is authorized hereunder, and, that such supplemental indenture is the valid and legally binding obligation of the Company. The Trustee shall sign all supplemental indentures, except that the Trustee need not sign any supplemental indenture that adversely affects its rights.

**ARTICLE X  
MISCELLANEOUS**

**Section 10.01 Trust Indenture Act Controls.** If any provision of this Indenture limits, qualifies or conflicts with another provision which is required or deemed to be included in this Indenture by the TIA, such required or deemed provision shall control.

**Section 10.02 Notices.**

(a) Any notice or communication by the Company or the Trustee to the other, or by a Holder to the Company or the Trustee, is duly given if in writing and delivered in person or mailed by first-class mail or sent by telecopier transmission or electronic transmission in PDF addressed as follows:

if to the Company:

Blue Water Vaccines Inc.  
201 E. Fifth Street, Suite 1900  
Cincinnati, OH 45202  
Attention: []  
Telephone: (513) 620-4101

if to the Trustee:

[     ]

(b) The Company or the Trustee by notice to the other may designate additional or different addresses for subsequent notices or communications. Any notice or communication to a Holder shall be delivered to his address shown on the register kept by the Registrar. Failure to deliver a notice or communication to a Holder of any Series or any defect in it shall not affect its sufficiency with respect to other Holders of that or any other Series. If a notice or communication is delivered in the manner provided above, within the time prescribed, it is duly given, whether or not the Holder receives it. If the Company delivers a notice or communication to Holders, it shall deliver a copy to the Trustee and each Agent at the same time.

(c) Any notice or demand that by any provision of this Indenture is required or permitted to be given or served by the Company may, at the Company's written request received by the Trustee not fewer than five (5) Business Days prior (or such shorter period of time as may be acceptable to the Trustee) to the date on which such notice must be given or served, be given or served by the Trustee in the name of and at the expense of the Company.

**Section 10.03 Communication by Holders with Other Holders.** Holders of any Series may communicate pursuant to TIA Section 312(b) with other Holders of that Series or any other Series with respect to their rights under this Indenture or the Securities of that Series or all Series. The Company, the Trustee, the Registrar and anyone else shall have the protection of TIA Section 312(c).

**Section 10.04 Certificate and Opinion as to Conditions Precedent.** Upon any request or application by the Company to the Trustee to take any action under this Indenture, the Company shall furnish to the Trustee:

(a) an Officers' Certificate stating that, in the opinion of the signers, all conditions precedent, if any, provided for in this Indenture relating to the proposed action have been complied with; and

(b) an Opinion of Counsel stating that, in the opinion of such counsel, all such conditions precedent have been complied with.

**Section 10.05 Statements Required in Certificate or Opinion.** Each certificate or opinion with respect to compliance with a condition or covenant provided for in this Indenture (other than a certificate provided pursuant to TIA Section 314(a)(4)) shall comply with the provisions of TIA Section 314(e) and shall include:

(a) a statement that the person making such certificate or opinion has read such covenant or condition;

(b) a brief statement as to the nature and scope of the examination or investigation upon which the statements or opinions contained in such certificate or opinion are based;

(c) a statement that, in the opinion of such person, he has made such examination or investigation as is necessary to enable him to express an informed opinion as to whether or not such covenant or condition has been complied with; and

(d) a statement as to whether or not, in the opinion of such person, such condition or covenant has been complied with.

**Section 10.06 Rules by Trustee and Agents.** The Trustee may make reasonable rules for action by or a meeting of Holders of one or more Series. Any Agent may make reasonable rules and set reasonable requirements for its functions.

**Section 10.07 Legal Holidays.** Unless otherwise provided by Board Resolution, Officers' Certificate or supplemental indenture hereto for a particular Series, a "Legal Holiday" is any day that is not a Business Day. If a payment date is a Legal Holiday at a place of payment, payment may be made at that place on the next succeeding day that is not a Legal Holiday, and no interest shall accrue for the intervening period.

**Section 10.08 No Recourse Against Others.** A director, officer, employee or stockholder, as such, of the Company shall not have any liability for any obligations of the Company under the Securities or the Indenture or for any claim based on, in respect of or by reason of such obligations or their creation. Each Holder by accepting a Security waives and releases all such liability. The waiver and release are part of the consideration for the issue of the Securities.

**Section 10.09 Counterparts.** This Indenture may be executed in any number of counterparts and by the parties hereto in separate counterparts, each of which when so executed shall be deemed to be an original and all of which taken together shall constitute one and the same agreement. The exchange of copies of this Indenture and of signature pages by facsimile or PDF transmission shall constitute effective execution and delivery of this Indenture as to the parties hereto and may be used in lieu of the original Indenture for all purposes. Signatures of the parties hereto transmitted by facsimile or PDF shall be deemed to be their original signatures for all purposes.

**Section 10.10 Governing Laws.** This Indenture and the Securities will be governed by, and construed in accordance with, the internal laws of the State of New York.



**Section 10.11 No Adverse Interpretation of Other Agreements.** This Indenture may not be used to interpret another indenture, loan or debt agreement of the Company or a Subsidiary of the Company. Any such indenture, loan or debt agreement may not be used to interpret this Indenture.

**Section 10.12 Successors.** All agreements of the Company in this Indenture and the Securities shall bind its successor. All agreements of the Trustee in this Indenture shall bind its successor.

**Section 10.13 Severability.** In case any provision in this Indenture or in the Securities shall be invalid, illegal or unenforceable, the validity, legality and enforceability of the remaining provisions shall not in any way be affected or impaired thereby.

**Section 10.14 Table of Contents, Headings, Etc.** The Table of Contents, Cross-Reference Table, and headings of the Articles and Sections of this Indenture have been inserted for convenience of reference only, are not to be considered a part hereof, and shall in no way modify or restrict any of the terms or provisions hereof.

**Section 10.15 Securities in a Foreign Currency.** Unless otherwise specified in a Board Resolution, a supplemental indenture hereto or an Officers' Certificate delivered pursuant to Section 2.02 of this Indenture with respect to a particular Series of Securities, whenever for purposes of this Indenture any action may be taken by the Holders of a specified percentage in aggregate principal amount of Securities of all Series or all Series affected by a particular action at the time outstanding and, at such time, there are outstanding Securities of any Series which are denominated in a coin or currency other than Dollars, then the principal amount of Securities of such Series which shall be deemed to be outstanding for the purpose of taking such action shall be that amount of Dollars that could be obtained for such amount at the Market Exchange Rate at such time. For purposes of this Section 10.15, "*Market Exchange Rate*" shall mean the noon Dollar buying rate in New York City for cable transfers of that currency as published by the Federal Reserve Bank of New York. If such Market Exchange Rate is not available for any reason with respect to such currency, the Company shall use, in its sole discretion and without liability on its part, such quotation of the Federal Reserve Bank of New York as of the most recent available date, or quotations from one or more major banks in The City of New York or in the country of issue of the currency in question or such other quotations as the Company, shall deem appropriate. The provisions of this paragraph shall apply in determining the equivalent principal amount in respect of Securities of a Series denominated in currency other than Dollars in connection with any action taken by Holders of Securities pursuant to the terms of this Indenture. All decisions and determinations of the Company regarding the Market Exchange Rate or any alternative determination provided for in the preceding paragraph shall be in its sole discretion and shall, in the absence of manifest error, to the extent permitted by law, be conclusive for all purposes and irrevocably binding upon the Company, the Trustee and all Holders. The Trustee shall have no duty to calculate or verify the calculations made pursuant to this Section 10.15.

**Section 10.16 U.S.A. Patriot Act.** The Company acknowledges that in accordance with Section 326 of the U.S.A. Patriot Act, the Trustee, like all financial institutions, and in order to help fight the funding of terrorism and money laundering, is required to obtain, verify, and record information that identifies each person or legal entity that establishes a relationship or opens an account with the Trustee. The Company agrees that it will provide the Trustee with such information as it may reasonably request as required in order for the Trustee to satisfy the requirements of the U.S.A. Patriot Act.

**Section 10.17 Waiver of Jury Trial.** EACH OF THE COMPANY AND THE TRUSTEE HEREBY IRREVOCABLY WAIVES, TO THE FULLEST EXTENT PERMITTED BY APPLICABLE LAW, ANY AND ALL RIGHT TO TRIAL BY JURY IN ANY LEGAL PROCEEDING AS BETWEEN THE COMPANY AND THE TRUSTEE ONLY ARISING OUT OF OR RELATING TO THIS INDENTURE OR THE SECURITIES.

**ARTICLE XI  
SINKING FUNDS**

**Section 11.01 Applicability of Article.** The provisions of this Article shall be applicable to any sinking fund for the retirement of the Securities of a Series, except as otherwise permitted or required by any form of Security of such Series issued pursuant to this Indenture. The minimum amount of any sinking fund payment provided for by the terms of the Securities of any Series is herein referred to as a “*mandatory sinking fund payment*” and any other amount provided for by the terms of Securities of such Series is herein referred to as an “*optional sinking fund payment*.” If provided for by the terms of Securities of any Series, the cash amount of any sinking fund payment may be subject to reduction as provided in Section 11.02. Each sinking fund payment shall be applied to the redemption of Securities of any Series as provided for by the terms of the Securities of such Series.

**Section 11.02 Satisfaction of Sinking Fund Payments with Securities.** The Company may, in satisfaction of all or any part of any sinking fund payment with respect to the Securities of any Series to be made pursuant to the terms of such Securities (1) deliver outstanding Securities of such Series to which such sinking fund payment is applicable (other than any of such Securities previously called for mandatory sinking fund redemption) and (2) apply as credit Securities of such Series to which such sinking fund payment is applicable and which have been repurchased by the Company or redeemed either at the election of the Company pursuant to the terms of such Series of Securities (except pursuant to any mandatory sinking fund) or through the application of permitted optional sinking fund payments or other optional redemptions pursuant to the terms of such Securities, provided that such Securities have not been previously so credited. Such Securities shall be received by the Trustee, together with an Officers’ Certificate with respect thereto, not later than 15 days prior to the date on which the Trustee begins the process of selecting Securities for redemption, and shall be credited for such purpose by the Trustee at the price specified in such Securities for redemption through operation of the sinking fund and the amount of such sinking fund payment shall be reduced accordingly. If as a result of the delivery or credit of Securities in lieu of cash payments pursuant to this Section 11.02, the principal amount of Securities of such Series to be redeemed in order to exhaust the aforesaid cash payment shall be less than \$100,000, the Trustee need not call Securities of such Series for redemption, except upon receipt of a Company Order that such action be taken, and such cash payment shall be held by the Trustee or a Paying Agent and applied to the next succeeding sinking fund payment, provided, however, that the Trustee or such Paying Agent shall from time to time upon receipt of a Company Order pay over and deliver to the Company any cash payment so being held by the Trustee or such Paying Agent upon delivery by the Company to the Trustee of Securities of that Series purchased by the Company having an unpaid principal amount equal to the cash payment required to be released to the Company.

**Section 11.03 Redemption of Securities for Sinking Fund.** Not less than 45 days (unless otherwise indicated in the Board Resolution, supplemental indenture or Officers’ Certificate in respect of a particular Series of Securities) prior to each sinking fund payment date for any Series of Securities, the Company will deliver to the Trustee an Officers’ Certificate specifying the amount of the next ensuing mandatory sinking fund payment for that Series pursuant to the terms of that Series, the portion thereof, if any, which is to be satisfied by payment of cash and the portion thereof, if any, which is to be satisfied by delivering and crediting of Securities of that Series pursuant to Section 11.02, and the optional amount, if any, to be added in cash to the next ensuing mandatory sinking fund payment, and the Company shall thereupon be obligated to pay the amount therein specified. Not less than 30 days (unless otherwise indicated in the Board Resolution, Officers’ Certificate or supplemental indenture in respect of a particular Series of Securities) before each such sinking fund payment date the Trustee shall select the Securities to be redeemed upon such sinking fund payment date in the manner specified in Section 3.02 and cause notice of the redemption thereof to be given in the name of and at the expense of the Company in the manner provided in Section 3.03. Such notice having been duly given, the redemption of such Securities shall be made upon the terms and in the manner stated in Sections 3.04, 3.05 and 3.06.

*[Remainder of page intentionally left blank]*

IN WITNESS WHEREOF, the parties hereto have caused this Indenture to be duly executed and attested, all as of the day and year first above written.

BLUE WATER VACCINES INC.

By: \_\_\_\_\_  
Name: Joseph Hernandez  
Title: Chief Executive Officer

[\_\_\_\_\_] .  
as Trustee

By: \_\_\_\_\_  
Name: \_\_\_\_\_  
Title: \_\_\_\_\_

*[Signature Page to Indenture]*

ELLENOFF GROSSMAN & SCHOLE LLP  
1345 AVENUE OF THE AMERICAS  
NEW YORK, NEW YORK 10105  
TELEPHONE: (212) 370-1300  
FACSIMILE: (212) 370-7889  
www.egsllp.com

March 9, 2023

Blue Water Vaccines Inc.  
201 E. Fifth Street, Suite 1900  
Cincinnati, OH 45202

Re: Registration Statement on Form S-3

Ladies and Gentlemen:

We have acted as counsel to Blue Water Vaccines Inc., a Delaware corporation (the “**Company**”), in connection with the preparation of a registration statement on Form S-3 (the “**Registration Statement**”) filed by the Company with the Securities and Exchange Commission (the “**Commission**”) pursuant to the Securities Act of 1933, as amended (the “**Securities Act**”), relating to the offer and sale from time to time by the Company of up to a maximum of \$100,000,000 aggregate initial offering price of a presently indeterminate amount of the following securities (each a “**Company Security**” and collectively, or in any combination, the “**Company Securities**”):

- (i) shares of the Company’s common stock, \$0.00001 par value per share (the “**Common Stock**”);
  - (ii) one or more classes or series of shares of the Company’s preferred stock, \$0.00001 par value per share (the “**Preferred Stock**”);
  - (iii) purchase contracts entitling or obligating holders to purchase from or sell to the Company, and for the Company to sell to or purchase from such holders, a specific or varying number of debt or equity securities issued by the Company or by an entity other than the Company at a future date or dates;
  - (iv) warrants to purchase Common Stock, Preferred Stock, debt securities, other securities or any combination of those securities;
  - (v) subscription rights to purchase Common Stock, Preferred Stock, debt securities, other securities or any combination of those securities;
  - (vi) depositary receipts;
  - (vii) secured or unsecured debt securities consisting of notes, debentures or other evidences of indebtedness which may be senior debt securities, senior subordinated debt securities or subordinated debt securities, each of which may be convertible into equity securities; and
  - (viii) units consisting of any combination of the foregoing securities.
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The Company Securities may be issued and sold by the Company pursuant to applicable provisions of Rule 415 under the Securities Act, in amounts, at prices and on terms to be determined in light of market conditions at the time of sale, and as set forth in the Registration Statement, any amendment thereto, the prospectus contained therein (the “**Prospectus**”) and any supplements to the Prospectus (each, a “**Prospectus Supplement**”). The Company Securities may be issued from time to time on a delayed or continuous basis, and this opinion is limited to the laws, including the rules and regulations, as in effect on the date hereof, which laws are subject to change with possible retroactive effect.

You have requested our opinion as to the matters set forth below in connection with the Registration Statement. For purposes of rendering the opinions set forth below, we have examined such documents and reviewed such questions of law as we have considered necessary and appropriate for the purposes of our opinion including (i) the Registration Statement, including the exhibits filed therewith, (ii) the Prospectus, (iii) the Company’s amended and restated certificate of incorporation, as amended (the “**Certificate of Incorporation**”), (iv) the Company’s amended and restated bylaws, as amended (the “**Bylaws**”), (v) the corporate resolutions and other actions of the Company that authorize and provide for the filing of the Registration Statement, and we have made such other investigation as we have deemed appropriate. We have not independently established any of the facts so relied on.

For purposes of this opinion letter, we have assumed the accuracy and completeness of each document submitted to us, the genuineness of all signatures on original documents, the authenticity of all documents submitted to us as originals, the conformity to original documents of all documents submitted to us as facsimile, electronic, certified, conformed or photostatic copies thereof, and the due execution and delivery of all documents where due execution and delivery are prerequisites to the effectiveness thereof. We have further assumed the legal capacity of natural persons, that persons identified to us as officers of the Company are actually serving in such capacity, that the representations of officers and employees of the Company are correct as to questions of fact, that the board of directors will have taken all action necessary to set the issuance price of the Company Securities to be offered and sold and that each party to the documents we have examined or relied on (other than the Company) has the power, corporate or other, to enter into and perform all obligations thereunder and also have assumed the due authorization by all requisite action, corporate or other, the execution and delivery by such parties of such documents, and the validity and binding effect thereof on such parties. We have not independently verified any of these assumptions.

The opinions expressed in this opinion letter are limited to the General Corporation Law of the State of Delaware (the “**DGCL**”) and the applicable statutory provisions of the Delaware Constitution and the reported judicial decisions interpreting such statute and provisions and, solely in connection with the opinions given in numbered paragraphs 1 and 2 below. We are not opining on, and we assume no responsibility for, the applicability to or effect on any of the matters covered herein of (a) any other laws; (b) the laws of any other jurisdiction; or (c) the laws of any county, municipality or other political subdivision or local governmental agency or authority.

Based on the foregoing and in reliance thereon, and subject to the assumptions, qualifications, limitations and exceptions set forth below, we are of the opinion that:

1. With respect to shares of Common Stock, when (a) the board of directors of the Company (which, for purposes of this opinion, shall include any committee of the board of directors constituted for such purpose) has taken all necessary corporate action to approve the issuance and terms of the offering thereof and related matters, including without limitation the due reservation of any Common Stock for issuance, and (b) if required, certificates representing the shares of Common Stock have been duly executed, countersigned, registered and delivered, in each case in accordance with the Certificate of Incorporation and Bylaws, either (i) in accordance with the applicable definitive purchase, underwriting or similar agreement approved by the board of directors of the Company upon payment of the consideration therefor (which consideration shall not be less than the par value of the Common Stock) provided for in such definitive purchase, underwriting or similar agreement, as applicable, or (ii) upon conversion, exchange or exercise of any other Company Security in accordance with the terms of such Company Security or the instrument governing such Company Security providing for the conversion, exchange or exercise as approved by the board of directors of the Company, for the consideration therefor set forth in the applicable agreement and approved by the board of directors of the Company, which consideration shall not be less than the par value of the Common Stock, such shares of Common Stock will be validly issued, fully paid, and non-assessable.

2. With respect to shares of any series of Preferred Stock, when the board of directors of the Company has taken all necessary corporate action to approve the issuance and terms of the shares of such series, the terms of the offering thereof and related matters, including the adoption of a certificate of designation or amendment to the Certificate of Incorporation fixing and determining the terms of such Preferred Stock conforming to the DGCL, the filing of a certificate or amendment, as applicable, with the Secretary of State of Delaware, the payment in full of any filing fees attendant thereto, and the due reservation of any Common Stock and Preferred Stock for issuance, and (b) if required, certificates representing the shares of such series of Preferred Stock have been duly executed, countersigned, registered and delivered, in each case in accordance with the Certificate of Incorporation and Bylaws, either (i) in accordance with the applicable definitive purchase, underwriting or similar agreement approved by the board of directors of the Company upon payment of the consideration therefor (which consideration shall not be less than the par value of the Preferred Stock) provided for in such definitive purchase, underwriting or similar agreement, as applicable, or (ii) upon conversion, exchange or exercise of any other Company Security in accordance with the terms of such Company Security or the instrument governing such Company Security providing for the conversion, exchange or exercise as approved by the board of directors of the Company, for the consideration therefor set forth in the applicable agreement and approved by the board of directors of the Company, which consideration shall not be less than the par value of the Preferred Stock, the shares of such series of Preferred Stock will be validly issued, fully paid, and non-assessable.

3. With respect to the issuance of any purchase contracts, when (a) the board of directors of the Company has taken all necessary corporate action to approve the purchase contract agreement to be entered into in connection with the issuance of any purchase contracts and such purchase contract agreement has been validly executed and delivered by the purchase contract agent and Company, (b) the board of directors of the Company has taken all necessary corporate action to approve the specific issuance and terms of any purchase contracts duly established in accordance with the applicable purchase contract agreement and (c) such purchase contracts have been duly executed, countersigned, registered, issued and delivered in accordance with the purchase contract agreement and the applicable definitive purchase, underwriting or similar agreement, as applicable, for the consideration therefor set forth in the applicable agreement and approved by the board of directors of the Company, such purchase contracts will constitute valid and binding obligations of the Company, enforceable against the Company in accordance with their terms, subject to applicable bankruptcy, insolvency and similar laws affecting creditors' rights generally, concepts of reasonableness and equitable principles of general applicability.

4. With respect to the issuance of any warrants, when (a) the board of directors of the Company has taken all necessary corporate action to approve the warrant agreement to be entered into in connection with the issuance of any warrants and such warrant agreement has been validly executed and delivered by the warrant agent and Company, (b) the board of directors of the Company has taken all necessary corporate action to approve the specific issuance and terms of any warrants duly established in accordance with the applicable warrant agreement and (c) such warrants have been duly executed, countersigned, registered, issued and delivered in accordance with the warrant agreement and the applicable definitive purchase, underwriting or similar agreement, as applicable, for the consideration therefor set forth in the applicable agreement and approved by the board of directors of the Company (assuming the securities issuable upon exercise of the warrants have been duly authorized and reserved for issuance by all necessary corporate action and in accordance with applicable law), such warrants will constitute valid and binding obligations of the Company, enforceable against the Company in accordance with their terms, subject to applicable bankruptcy, insolvency and similar laws affecting creditors' rights generally, concepts of reasonableness and equitable principles of general applicability.

5. With respect to the subscription rights, when (a) the board of directors of the Company has taken all necessary corporate action to authorize the issuance and the specific terms of such subscription rights, the terms of the offering thereof, and related matters and (b) such subscription rights and agreements relating to the subscription rights have been duly executed and delivered in accordance with the terms thereof, then such subscription rights will be valid and binding obligations of the Company, enforceable against the Company in accordance with their terms.

6. With respect to the depositary shares, when (i) the board of directors of the Company has taken all necessary corporate action to approve the issuance and terms of the depositary shares, the terms of the offering thereof and related matters; (ii) the depositary agreement or agreements relating to the depositary shares and the related depositary receipts have been duly authorized and validly executed and delivered by the board of directors of the Company and the depositary appointed by the Company; (iii) the securities underlying the depositary shares have been duly authorized, validly issued and deposited with the depositary under the applicable depositary agreement; and (iv) the depositary receipts representing the depositary shares have been duly executed, countersigned, registered and delivered in accordance with the appropriate depositary agreement approved by the Company, upon payment of the consideration therefor provided for in the applicable definitive purchase, underwriting or similar agreement, the depositary shares will be legally issued and will entitle their holders to the rights specified in the deposit agreement and the depositary receipt.

7. With respect to any debt securities, when (a) the board of directors of the Company has taken all necessary corporate action to approve an applicable indenture, if any, or any amendment or supplement thereto or other agreement in respect thereof, if any, and such indenture, if any, or any amendment or supplement thereto or other agreement in respect thereof, if any, has been validly executed and delivered by the Company, (b) any applicable indenture, if required, has been duly qualified under the Trust Indenture Act of 1939, as amended, if qualification is required thereunder, (c) the board of directors of the Company has taken all necessary corporate action to approve the specific issuance and terms of any series of debt security duly established in accordance with the applicable indenture, if any, and (d) such debt security have been duly executed, countersigned, registered, issued and delivered in accordance with the indenture, if any, or any amendment or supplement thereto or other agreement in respect thereof, if any, the applicable definitive purchase, underwriting or similar agreement, as applicable, such debt securities will constitute valid and binding obligations of the Company, enforceable against the Company in accordance with their terms, subject to applicable bankruptcy, insolvency and similar laws affecting creditors' rights generally, concepts of reasonableness and equitable principles of general applicability, provided that we express no opinion as to (x) the enforceability of any waiver of rights under any usury or state law, (y) the validity, legally binding effect or enforceability of any provision of the indenture that requires or relates to adjustments to the conversion rate at a rate or in an amount that a court would determine in the circumstances under applicable law to be commercially unreasonable or a penalty or forfeiture or (z) the validity, legally binding effect or enforceability of any provision that permits holders to collect any portion of stated principle amount upon acceleration of the debt securities to the extent determined to constitute unearned interest.

8. With respect to the issuance of any units, when (a) the board of directors of the Company has taken all necessary corporate action to approve the unit agreement, if any, to be entered into in connection with the issuance of any units and such unit agreement, if any, has been validly executed and delivered by the unit agent, if any, and the Company, (b) the board of directors of the Company has taken all necessary corporate action to approve the specific issuance and terms of any units duly established in accordance with the applicable unit agreement, if any, and (c) such units have been duly executed, countersigned, registered, issued and delivered in accordance with the unit agreement, if any, and the applicable definitive purchase, underwriting or similar agreement, as applicable, for the consideration therefor set forth in the applicable agreement and approved by the board of directors of the Company, such units will constitute valid and binding obligations of the Company, enforceable against the Company in accordance with their terms, subject to applicable bankruptcy, insolvency and similar laws affecting creditors' rights generally, concepts of reasonableness and equitable principles of general applicability.

The opinions set forth above are subject to the following additional assumptions:

the Registration Statement, any amendments thereto (including post-effective amendments), will have been declared effective under the Securities Act and such effectiveness shall not have been terminated, suspended or rescinded.

The opinions above are subject to the effects of (i) bankruptcy, insolvency, fraudulent conveyance, fraudulent transfer, reorganization, receivership, moratorium and other similar laws relating to or affecting enforcement of creditors' rights or remedies generally, (ii) general principles of equity, whether such principles are considered in a proceeding of law or at equity, and (iii) an implied covenant of good faith, reasonableness and fair dealing and standards of materiality.

We hereby consent to the filing of this opinion as an exhibit to the Registration Statement and to the use of our name under the caption "Legal Matters" in the Prospectus. In giving our consent, we do not thereby admit that we are experts with respect to any part of the Registration Statement, the Prospectus, or any Prospectus Supplement within the meaning of the term "expert," as used in Section 11 of the Securities Act or the rules and regulations promulgated thereunder by the Commission, nor do we admit that we are in the category of persons whose consent is required under Section 7 of the Securities Act or the rules and regulations thereunder.

Yours truly,

*/s/ Ellenoff Grossman & Schole LLP*

Ellenoff Grossman & Schole LLP



**CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM**

We consent to the incorporation by reference in this Registration Statement on Form S-3 and related prospectus of our report dated March 8, 2023, with respect to the financial statements of Blue Water Vaccines Inc. (the “Company”) as of December 31, 2022 and 2021, and for the two years then ended, included in the Company’s Annual Report on Form 10-K for the year ended December 31, 2022, and to the reference to us under the heading “Experts” in the prospectus which is part of this Registration Statement.

/s/ Mayer Hoffman McCann P.C.

Los Angeles, California

March 9, 2023

## Calculation of Filing Fee Tables

Form S-3  
(Form Type)Blue Water Vaccines Inc.  
(Exact Name of Registrant as Specified in its Charter)**Table 1: Newly Registered and Carry Forward Securities**

Security Type	Security Class Type(1)	Fee Calculation or Carry Forward Rule	Amount Registered	Proposed Maximum Offering Price Per Unit	Maximum Aggregate Offering Price	Fee Rate	Amount of Registration Fee	Carry Forward Form Type	Carry Forward File Number	Carry Forward Initial Effective Date	Filing Fee Previously Paid in Connection with Unsold Securities to be Carried Forward
<b>Newly Registered Securities</b>											
<b>Fees to be paid</b>	Equity	Common Stock									
	Equity	Preferred Stock									
	Other	Purchase Contract									
	Other	Warrants(4)									
	Other	Subscription Rights (5)									
	Other	Depositary Shares									
	Debt	Debt Securities(3)									
	Other	Units (6)									
	Unallocated (Universal) Shelf	-	457(o)	(1)	(2)	\$ 100,000,000	\$ 11,020				
<b>Carry Forward Securities</b>											
<b>Carry Forward Securities</b>	-	-	-	-	-	-	-	-	-	-	-
	<b>Total Offering Amounts</b>										
	<b>Total Fees Previously Paid</b>										
	<b>Total Fees Offsets</b>										
	<b>Net Fee Due</b>						11,020				

- (1) There are being registered hereunder such indeterminate amount of the securities of each identified class as may from time to time be offered hereunder by the Registrant at indeterminate prices which shall have an aggregate initial offering price not to exceed \$100,000,000. The securities being registered hereunder also include such indeterminate amount of securities as may be issued upon exercise, settlement, exchange or conversion securities offered or sold hereunder, or pursuant to the anti-dilution provisions of any such securities. If any debt securities are issued at an original issue discount, then the principal amount of such debt securities shall be in such greater amount as shall result in an aggregate initial offering price not to exceed \$100,000,000, less the aggregate dollar amount of all securities previously issued hereunder.
- (2) The proposed maximum offering price per security for the primary offering will be determined, from time to time, by the Registrant in connection with the issuance by the Registrant of the securities registered hereunder and is not specified as to each class of security pursuant to General Instruction II.D. of Form S-3 under the Securities Act.
- (3) Debt securities may be senior or subordinated, convertible or non-convertible and secured or unsecured.
- (4) Warrants may represent rights to purchase debt securities, common stock, preferred stock or other securities registered hereunder.
- (5) Subscription rights evidence rights to purchase any securities of the Registrant registered under this registration statement.
- (6) Any securities registered under this registration statement may be sold separately or as units with other securities registered under this registration statement.