



Management's Discussion and Analysis
For the three and six-month periods ended
September 30, 2022

Dated: November 14, 2022

(Expressed in Canadian Dollars)

Introduction

This Management Discussion and Analysis (“MD&A”) is dated November 14, 2022, and is in respect of the three and six-month periods ended September 30, 2022. The following discussion of the financial condition and results of operations of Zentek Ltd. (the “Company”) constitutes management’s review of the factors that affected the Company’s financial and operating performance for the three and six-month periods ended September 30, 2022.

This discussion should be read in conjunction with the Company’s condensed interim consolidated financial statements and corresponding notes to the consolidated financial statements for the six-months ended September 30, 2022, the most recently completed fiscal period, and the MD&A and audited consolidated annual financial statements for the year ended March 31, 2022. The Company’s condensed interim consolidated financial statements have been prepared in accordance with International Financial Reporting Standards (“IFRS”) as issued by the International Accounting Standards Board (“IASB”). Unless otherwise stated, all amounts discussed herein are denominated in Canadian dollars which is the Company’s functional and reporting currency.

Additional information relating to the Company can be found under the Company’s profile on SEDAR at

www.sedar.com. **Forward Looking Statements**

This MD&A of the Company contains certain forward-looking information and forward-looking statements, as defined in applicable securities laws (collectively referred to herein as “forward-looking statements”). These statements relate to future events or the Company’s future performance. All statements other than statements of historical fact are forward-looking statements. Often, but not always, forward-looking statements can be identified by the use of words such as “plans”, “expects”, “is expected”, “budget”, “scheduled”, “estimates”, “continues”, “forecasts”, “projects”, “predicts”, “intends”, “anticipates” or “believes”, or variations of, or the negatives of, such words and phrases or state that certain actions, events or results “may”, “could”, “would”, “should”, “might” or “will” be taken, occur or be achieved. Forward-looking statements involve known and unknown risks, uncertainties and other factors, which may cause actual results to differ materially from those anticipated, expressed or implied in such forward-looking statements.

Factors that could affect these statements include, without limitation, negative operating cash flow, uncertainties relating to the Company’s business plans, economic and political conditions, related revenue from graphene related product sales and complex sales cycles, intellectual property, product development and technical change, market development and growth, unpredictable sales cycles, governmental regulation and import/export controls, industry competition, shortages, liquidity concerns and future financing, reliance on key personnel, qualified employees, cybersecurity threats, share price fluctuations, cost absorption and purchase orders, acquisitions, launch and operational costs, material commodity prices, uninsured risks, litigation, credit risk, interest rate risk, price risk, financial capability and additional financing, permits and governmental regulation, fluctuating prices, environmental regulation, economic dependence on supply agreement. The forward-looking statements in this MD&A speak only as of the date of this MD&A or as of the date specified in such statement.

Readers are cautioned not to place undue reliance on forward-looking information. The Company undertakes no obligation to update publicly or otherwise revise any forward-looking information whether as a result of new information, future events or other such factors which affect this information, except as required by law.

These factors and other risks and uncertainties are detailed in the Company’s reports and disclosure documents filed by the Company from time to time with Canadian securities regulatory authorities.

Company Overview and Discussion of Operations

The Company was incorporated in Ontario, Canada as 1774119 Ontario Limited on July 29, 2008. Pursuant to Articles of Amendment dated November 24, 2009, the Company changed its name to Zenyatta Ventures Ltd. On January 16, 2019, the Company filed Articles of Amendment changing its name from “Zenyatta Ventures Ltd.” to “ZEN Graphene Solutions Ltd.” On October 27, 2021 (effective October 28, 2021), the Company filed Articles of Amendment changing its name from “ZEN Graphene Solutions Ltd.” to “Zentek Ltd.” The common shares of the Company trade on the TSX Venture Exchange (“TSXV”) under the symbol “ZEN” and in the United States on the Nasdaq Capital Market (“NASDAQ”) under the symbol “ZTEK”.

The Company commenced operations as a junior mineral exploration company focused primarily on mineral deposits in Northern Ontario, Canada. The Company was actively engaged in exploring mining projects and held an interest in exploration licenses on properties in the “Arc of Fire” area in Northern Ontario, Canada. The properties, located north of Lake Superior and west of James Bay in north-western Ontario, Canada, were unpatented, noncontiguous, and consisted of nine claim blocks, including 234 claims comprised of 3,549 claim units over a total of 56,784 ha. Within such claim blocks, the Company still holds a 100% undivided interest in Claim Block 4F, which hosts the igneous-hosted, fluid-derived graphite deposit (the “Albany Graphite Project”). The Company did extensive work to determine potential uses for the graphite materials extracted from the Albany Graphite Project, including engaging in testing and studies on graphene materials.

In May 2018, the Company began to focus resources on the research and development of graphene and related applications, which was supported by shareholders of the Company who voted in favour of a new Board of Directors with an interdisciplinary team to augment key management personnel with expertise in business, science, marketing, and government relations.

In March of 2020, the Company opened a research facility in Guelph, Ontario, to support its university and industrial partners’ ongoing research and to scale-up production of graphene product. Subsequently, the COVID-19 pandemic halted research at the Company’s collaborators’ laboratories. The Company pivoted to focus its resources to develop graphene-based solutions for the fight against COVID-19.

Pursuant to a License Agreement dated September 22, 2020, between the Company and the University of Guelph, the Company holds the exclusive global rights to intellectual property regarding an electrochemical exfoliation (“ECE”) process to produce graphene oxide (“GO”).

On September 22, 2020, the Company announced, based on the results from a report to the Company dated September 18, 2020, from the ImPaKT Centre at the University of Western Ontario entitled “*Zen Graphene – Lab Test Report No. Z03-092020*”, the development and successful testing of a patent-pending GO/silver compound that showed to be 99% effective against COVID-19 virus a minimum of 35 days after application of the coating to N95 mask material. On December 22, 2020, the Company announced the successful testing at the Department of Microbiology at Mount Sinai Hospital/University Health Network of the GO/silver compound that showed to be 99.9% effective against both gram-positive and gram-negative aerobic bacteria as well as against fungus/yeast, based on a report to the Company dated December 18, 2020 entitled “*Evaluation of Graphene Oxide with Silver Cations (GO-Ag+) as an Antibacterial Agent against Respiratory Pathogens*”, which stated that if the compound could be shown to be safe and effective, it could provide a breakthrough alternative therapy for the practices of family medicine, otolaryngology, ophthalmology and intensive care units. The Company has now filed four provisional patent applications relating to its antimicrobial coating, and on April 13, 2021, announced the brand name ZenGUARD™ for such coating.

On November 29, 2021, the Company announced that it had been issued a Medical Device Establishment License (“MDEL”) from Health Canada (license number 18823) for the manufacture and distribution of any Class I medical devices.,

The Company is now an intellectual property development and commercialization company focused on Nanomaterial-based innovations that improve people's lives. The Company is currently focused primarily on commercializing ZenGUARD™, as well as on the development of aptamer-based rapid detection technologies. The Company is not currently conducting any significant work on the Albany Graphite Project and does not require materials extracted from the Albany Graphite Project for its current business plans, although such materials could hold significant value to the Company in the future. On October 18, 2021, the Company's classification on the TSXV changed from a "mining issuer" to an "industrial, technology, or life sciences issuer", which was approved by the shareholders of the Company on September 27, 2021, in accordance with the rules and policies of the TSXV.

Current Business

ZenGUARD™ Antimicrobial Compound

During the reporting period the Company advanced toward commercial production its ZenGUARD™ antimicrobial coating at industrial scale for application to non-woven, spunbond polypropylene material used in surgical mask manufacturing and potentially on other materials and products. Based on reports from GAP EnviroMicrobial Services Ltd. ("GAP Labs") dated May 3, 2021, the addition of ZenGUARD™ coating to surgical masks has been shown to increase the bacterial and viral filtration efficiency of masks and acts as an antimicrobial agent providing increased protection when compared to similar uncoated masks.

The Company entered into a License and Supply Agreement dated September 24, 2021, with Trebor Rx Corp. ("Trebor"), pursuant to which the Company granted a non-exclusive non-transferable license to Trebor to use the ZenGUARD™ coating in certain specified Trebor personal protective equipment ("PPE") products displaying the Company's branding, including surgical masks, nitrile gloves, surgical gowns and scrubs and other healthcare and similar such products, and an additional exclusive license to sell and distribute ZenGUARD™-coated Elastomeric Respirator Mask filters (i.e., Pro+ filters), whether fixed or replaceable, such exclusive license remaining in force only so long as Trebor sells a minimum of 60,000,000 filters per year with annual growth of at least 10%. Trebor agreed to use the ZenGUARD™ coating on all its products sold unless the purchaser specifically refuses to purchase the ZenGUARD™-coated products and agreed to purchase the ZenGUARD™ coating from the Company by way of cash payments for a supply of ZenGUARD™ coating based on demand for Trebor products. The sale of ZenGUARD™-coated PPE masks received Health Canada authorization on September 22, 2021, under Interim Order No.2 - #329587 - Respecting the Importation and Sale of Medical Devices for Use in Relation to COVID-19. On September 23, 2021, The Company announced that it had delivered and generated revenue from its first shipment of ZenGUARD™ antimicrobial coating to Trebor. Effective July 29, 2022, Trebor entered receivership, effectively terminating the Supply Agreement.

Management of the Company determined that termination of the Trebor Supply Agreement would not result in a material loss, as the Company had already entered into a Reciprocal Supply Agreement with Ekomed Global Inc. (see below) and was already in advanced negotiations with Viva Healthcare Packaging (Canada) Ltd. (see below) for an additional supply agreement. Furthermore, the Company received a quantity of masks already manufactured by Trebor, the value of which set-off amounts owed by Trebor in royalties, resulting in a non-material amount of royalties remaining owing to the Company.

Additionally, the Company has been issued a MDEL from Health Canada (license number 18823) for the manufacture and distribution of any Class I medical devices. The MDEL allows the Company to work with other manufacturers and distributors inside and outside of Canada to bring surgical masks and, potentially, other PPE to the Canadian market. The MDEL also allows the Company to produce and sell its own Class I medical device PPE products.

The Company has employees as well as externally engaged consultants that are in regular contact with regulatory authorities in the United States, which includes the U.S. Food and Drug Administration (the "FDA"), with a view to potentially entering the United States market. As at the date hereof, the Issuer has pre-submitted applications to the FDA and received initial feedback in order to enhance its application materials.

On April 12, 2022, the Company announced that it had entered into a Reciprocal Supply Agreement dated March 31, 2022, with EkoMed Global Inc. (“EkoMed”), a globally integrated manufacturer and distributor of PPE, pursuant to which (i) the Company will sell quantities of ZenGUARD™ coating to EkoMed for use initially on EkoMed’s surgical masks and potentially other PPE in the future, and (ii) the Company will purchase surgical masks manufactured by EkoMed, to be treated with ZenGUARD™ coating and resold by the Company.

On May 13, 2022, the Company announced that Mark’s Work Wearhouse had placed an initial order for ZenGUARD™-coated masks to be sold at select stores across Canada, and online.

On September 7, 2022, the Company announced that it had entered into a Manufacturing and Supply Agreement with Viva Healthcare Packaging (Canada) Ltd. (“VMedCare”) to manufacture and sell surgical masks enhanced with ZenGUARD™ antimicrobial coating, pursuant to which the Company would provide ZenGUARD™-coated spunbond material to VMedCare, who will be responsible for manufacturing and packaging ZenGUARD™ branded surgical masks. As at the date hereof, the Company has provided VMedCare with ZenGUARD™-coated material to Viva Healthcare Packaging (Canada) Ltd. for the manufacture of approximately 6,000,000 masks. As at September 30, 2022, the Company had an inventory of approximately 540,000 masks that were manufactured by Trebor, approximately 2,100,000 masks that were manufactured by Ekomed, and had provided ZenGUARD™-coated material to VMedCare for the manufacture of approximately 6,000,000 masks.

The Company continues to market its ZenGUARD™ product to be applied to various materials, and has targeted manufacturers including PPE manufacturers and heating, ventilation, and air conditioning (“HVAC”) filter material companies.

To produce the ZenGUARD™ antimicrobial coating, quantities of GO are required. The Company made purchases of GO from third parties, and then uses the GO to produce the ZenGUARD™ coating formulation at its production facility in Guelph, Ontario. The Company has installed industrial scale manufacturing equipment in its Guelph, Ontario facility to produce ZenGUARD™ coating formulation (see below under the heading *Construction of ZenGUARD™ Industrial Scale Production and Coating Facility*). To date, the Company has sourced GO from third parties to produce its ZenGUARD™ coating. On November 11, 2021, the Company announced that it had reached an agreement to secure the necessary supply of GO to produce enough ZenGUARD™ to meet anticipated demand, which had been estimated by the Company based on discussions with its then contracted manufacturer, with shipments that began in December 2021 and are scheduled to conclude for this order prior to the end of calendar 2022.

The Company also intends to construct a facility to produce its own GO. The Company believes that the ability to produce GO itself rather than relying on third-party suppliers will be economically favourable to the Company over the long term, as well as reducing supply and shipping risk (see below under the heading *Proposed Construction of Graphene Oxide Production Facility*).

Construction of ZenGUARD™ Industrial Scale Production and Coating Facility

The Company has installed industrial scale production equipment to produce the ZenGUARD™ coating formulation at its York Road, Guelph, Ontario location, as such location is permitted for industrial use. The Company has also purchased coating equipment so the process of applying the ZenGUARD™ coating formulation to spunbond polypropylene for use in surgical masks, other PPE equipment, and potentially other uses, can soon be completed by the Company on-site.

A preliminary engineering study by Bantrel Co. commenced in January 2021 for graphite purification, GO production, and ZenGUARD™ production equipment. Engineering efforts then shifted to the exclusive development of a ZenGUARD™ production facility due to the long lead time for construction of the proposed purification plant, and the availability of sufficient low-cost GO from an external supplier negating the immediate need to use and process internally sourced graphite from the Albany Graphite Project. The preliminary engineering study was further delayed

by a fundamental change in the synthesis method in March 2021, resulting in a significantly more simplified design of the proposed ZenGUARD™ production equipment.

Detailed engineering of the ZenGUARD™ compound manufacturing equipment began in July 2021. The Company announced on February 28, 2022, that the production facility was fully licensed and permitted for ZenGUARD™ production, and that substantially all equipment had been received to ramp-up industrial scale capacity. At this point the Company intends to continue to use third parties to coat the ZenGUARD™ Graphene compound onto materials until the coating capabilities are operational at the Company's facility and in circumstances when external coating capacity is required. The ZenGUARD™ production line has been received and installed; its final ISO compliance includes production batch testing that is planned for November 2022. James Jordan, P.Eng., primarily oversaw construction of the ZenGUARD™ production equipment. As of September 30, 2022, approximately \$2,850,000 has been spent by the Company on this objective with no further additional expenditures required to complete construction. The Company held a grand opening on June 17, 2022. Once this industrial process is in operation, the Company's production capacity of ZenGUARD™-coated material is expected to increase significantly. The Company hired a new director of Global Healthcare Sales, Moe Deib on May 24, 2022, to increase market opportunities for its increased manufacturing capacity.

Delivery of coating line equipment occurred sporadically in the months following May 2022 as a result of unforeseeable supplier delays. As at the date hereof, all required parts have arrived and installation is underway. The expected construction completion date for the coating line is the end of November 2022. Following completion of construction, a period of training and certification will begin before the coating line is commercially operational. The Company has spent approximately \$1,310,000 as of September 30, 2022, related to the coating line and expects additional expenditures of approximately \$500,000 for such equipment installation, and commissioning.

Proposed Construction of Graphene Oxide Production Facility

In addition to the construction of the ZenGUARD™ industrial scale production and coating equipment, described above, the Company intends to construct a plant to produce GO. The Company believes that the ability to produce GO itself, which is the precursor for the ZenGUARD™ compound, rather than relying on third-party suppliers of GO, will be economically favourable to the Company over the long term, as well as reducing supply and shipping risk. The Company believes that there are three primary reasons it would benefit from an ability to produce GO internally: (i) it should eliminate or significantly reduce supply chain risk; (ii) GO is not a homogeneous substance and by producing its own GO the Company could ensure product consistency; and (iii) the Company believes that the demand for GO is increasing and that a domestic production facility could have the potential to generate product for third-party users of the material.

In connection with the Company's proposed production of GO, the Company has conducted research and development to produce high-quality, few-layer GO via an ECE process designed to be scalable, low cost, low energy, and environmentally friendly. In collaboration with Prof. Aicheng Chen at the University of Guelph, the prototype ECE process was designed, developed, and optimized. A PCT patent has been filed by Guelph University for the processes to produce expanded graphite and electrochemically exfoliated GO, the exclusive global rights to which has been licensed by the Company pursuant to a License Agreement dated September 22, 2020.

The Company engaged Bantrel Co. in January 2021, and engineering work was initiated. Potential sites for a proposed GO production plant have been investigated, however a site has not been secured and no permits have been obtained to date. As of September 30, 2022, the Company has spent \$35,000 in preliminary investigations relating to this project and expects that approximately \$7,500,000 will be required to complete construction of a GO production facility.

The Company estimates that fifteen to eighteen months will be required to complete the construction of a GO production plant, which is a management estimate only based on the expectation of securing an agreement for the purchase of technology from an existing GO producer. Inherent risks include, but are not limited to, the inability to reach an acceptable agreement for the purchase of such technology, the inability to adapt existing technology to the Canadian regulatory requirements, scaling-up from known existing production capacities could become a requirement, and delays as a result of ongoing material and equipment supply shortages.

ZenGUARD™ Research and Development

The Company continues to seek the most effective, cost-efficient, and scalable process to produce high-quality graphene. The production of graphene requires a consistent source (or precursor) material for conversion to graphene, which is then applied to various products for enhancement. The Company believes that it has a potential competitive advantage with its interest in the large and high-quality supply of source material, from the Albany Graphite Project, if and when the Company determines it cost effective to use such material.

Advanced testing on potential new processes for commercial GO production is underway. The Company continues to work with universities on different processes that could potentially lead to a more efficient and/or lower cost process for GO production.

The following table sets out some of the specific research and development projects that the Company is undertaking:

Initiative	R&D Timing and Stage ⁽¹⁾	Major Components to be Funded	Research Site	Estimated Cost as at December 24, 2021	Update for the period January 1 - September 30, 2022
ZenGUARD™- Coated Masks	Advanced stage of development (currently in the market).	Coating of ZenGUARD™ antimicrobial compound on PPE masks (polypropylene fabric) for reduced microbial transmission through aerosols. Continue work of optimizing material and characterization of compound to develop antimicrobial masks.	Internal	Continued research and development at an estimated cost of \$200,000.	Approximately \$66,100 has been spent as at September 30, 2022.
ZenGUARD™- Coated Gloves	Intermediate stage of development.	Coating of ZenGUARD™ antimicrobial compound on PPE gloves (Latex, nitrile, etc.) for reduced microbial transmission through touch to develop antimicrobial gloves.	Internal	Continued research and development at an estimated cost of \$150,000.	Approximately \$Nil has been spent as at September 30, 2022. This research project is currently designated as a lower priority project by the Company and the Company does not intend to spend significant funds on this project in the near future.

Initiative	R&D Timing and Stage⁽¹⁾	Major Components to be Funded	Research Site	Estimated Cost as at December 24, 2021	Update for the period January 1 - September 30, 2022
ZenGUARD™ HVAC	Intermediate stage of development.	Coating of ZenGUARD™ antimicrobial compound on HVAC filter systems in buildings, transportation, etc., for deactivation of aerosolized viral particles in enclosed spaces to develop pathogen deactivating HVAC filters.	Internal	Continued research and development at an estimated cost of \$200,000.	Approximately \$30,800 has been spent as at September 30, 2022.
Aptamer-based rapid test	Intermediate stage of development.	Validation of efficacy of antimicrobial compound for topical use via measurement of the minimum inhibitory concentration with various disease vectors to develop highly-sensitive COVID rapid antigen testing.	McMaster University	Continued research and development at an estimated cost of \$2,500,000.	Approximately \$1,939,000 has been spent as at September 30, 2022.
MIC Testing	Advanced stage of development (currently in the market).	Validation of efficacy of antimicrobial compound for topical use via measurement of the minimum inhibitory concentration with various disease vectors to develop topical ointment and/or spray.	Mount Sinai Hospital	Continued research and development at an estimated cost of \$25,000.	Approximately \$Nil has been spent as at September 30, 2022. This research project is currently designated as a lower priority project by the Company and the Company does not intend to spend significant funds on this project in the near future.
GO based fuel additive	Early stage of development.	Development of graphene-based additives to liquid fuels for improved performance metrics, including burn time, burn temperature, droplet size and fuel economy to create a high-efficiency fuel additive.	UBC Okanagan	Continued research and development at an estimated cost of \$325,000.	Approximately \$15,400 has been spent as at September 30, 2022.

Initiative	R&D Timing and Stage⁽¹⁾	Major Components to be Funded	Research Site	Estimated Cost as at December 24, 2021	Update for the period January 1 - September 30, 2022
Quantum Dots	Early stage of development.	Development of GO additive nanoscale crystals.	UBC Okanagan	Continued research and development at an estimated cost of \$20,000.	Approximately \$1,500 has been spent as at September 30, 2022. This research project is currently designated as a lower priority project by the Company and the Company does not intend to spend significant funds on this project in the near future.
GO-enhanced Aluminum	Early stage of development.	Addition of GO to aluminum melts for improved material metrics, including tensile & ductile strength and grain size to develop graphitic aluminum enhancing additive.	UBC Okanagan	Continued research and development at an estimated cost of \$38,000.	Approximately \$17,400 has been spent as at September 30, 2022.
3D Printing/Shielding	Early stage of development.	Adding GO and nanomaterials into polymers to improve conductivity and to develop complex shapes for E&M shielding for space and other applications to develop conductive 3D printable filaments.	UBC Okanagan	Continued research and development at an estimated cost of \$60,000.	Approximately \$113,900 has been spent as at September 30, 2022.
Icephobic Coatings	Early stage of development.	GO and/or polymer composite icephobic coating for application in the aerospace and drone industries to develop icephobic coating for prop-blades and fuselages.	Internally and externally	Continued research and development at an estimated cost of \$150,000.	Approximately \$Nil has been spent as at September 30, 2022.
Therapeutic Research Development	Early stage of development.	In vivo and in vitro testing of the ZenGUARD™ compound to develop a novel microbial compound for dermatological conditions.	Undetermined	Continued research and development at an estimated cost of \$300,000.	Approximately \$12,300 has been spent as at September 30, 2022.

Initiative	R&D Timing and Stage ⁽¹⁾	Major Components to be Funded	Research Site	Estimated Cost as at December 24, 2021	Update for the period January 1 - September 30, 2022
Anode and Battery Technologies	Early stage of development.	Development of graphene-enhanced anode material. Mitacs Accelerate project develops new materials for all aspects of an automotive battery including: anode, cathode, separator, electrolyte.	University of Waterloo	N/A	Approximately \$38,700 has been spent as at September 30, 2022.
Fire Retardant Intumescent Coatings	Early stage of development.	Additives for an intumescent coating to improve the performance of regular formulations.	Internally and externally	N/A	Approximately \$15,400 has been spent as at September 30, 2022.

The Company's research and development, and project development activities during the six-month period ended September 30, 2022, are summarized below:

On March 28, 2022, the Canadian national phase was initiated for its patent application directed to its ZenGUARD™ technology. The Company's patent strategy typically begins by filing one or more provisional patent applications with the United States Patent and Trademark Office. This allows the Company to establish the earliest possible filing date for its technology. A regular utility patent application is then filed within 12 months under the Patent Cooperation Treaty. Six months later, or 18 months from the date the initial provisional patent application was filed, the patent application is published. Following publication of the patent application, the Company then has a 12-month period to enter the national phase by filing in the individual countries in which it wants to protect its intellectual property. The Company is now actively prosecuting the patent application in Canada after receiving initial feedback from the Canadian Patent Office on June 1 and seeks to secure patent protection for its ZenGUARD™ technology for personal protective equipment and for the heating, ventilation, and air conditioning markets.

The Company also reported that a second patent application directed to its ZenGUARD™ technology for use as a broad-spectrum antimicrobial to treat infectious disease, was published on June 23rd, 2022. The application received a favourable initial opinion from the International Searching Authority, indicating that 58 out of 64 claims are considered to have met the full requirements for patentability. This opinion will be available with the publication of the patent application.

The Company further reported that a patent application directed to the proprietary process for manufacturing its ZenGUARD™ nanotechnology at industrial scale, that simplifies and significantly reduces manufacturing costs, was filed on April 12, 2022. The Company expects this patent will add an extra layer of intellectual property protection as the Company commercializes ZenGUARD™.

On June 6, 2022, the Company provided an update on its ZenGUARD™ patent status.

The Company continues to conduct testing on its ZenGUARD™ compound, which includes the increased challenge viral filtration efficiency and bacterial filtration efficiency test results announced by the Company on September 27, 2021. The results of third-party testing at GAP Labs demonstrated that ZenGUARD™-coated masks removed 98.9% more bacteria and 97.8% more virus particles than a typical ASTM level 3, 3-ply uncoated mask and resulted in a bacterial and viral filtration efficiency of over 99.99%.

Business in Development

Aptamer-Based Rapid Detection Technology

On May 19, 2022, the Company announced that McMaster has received two Natural Sciences and Engineering Research Council (“NSERC”) grants related to the aptamer-based rapid detection technology; the Alliance Missions Grant for the amount of \$1,000,000, and an Idea to Innovation (I2I) Grant for the amount of \$350,000, of which the Company will make a \$140,000 contribution. The Company intends to continue working with Dr. Yingfu Li and the research team at McMaster through in-kind contributions, using these grants towards commercializing the rapid diagnostic platform. The grants will be used to further commercialization efforts by improving the performance of aptamers, optimizing chip synthesis, and initiating additional tests that can be incorporated into its pathogen detection platform. The Company currently expects the cost to reach commercialization to be approximately \$2,500,000, and includes enhancements and further development of the technology.

Zentek announced on December 23, 2021, that StarFish Product Engineering Inc. (“StarFish Medical”) was engaged to assist in the development of the rapid diagnostic platform. StarFish Medical is to conduct a product strategy alignment, usability analysis, device and architecture development, proof of concept and prototyping, and program development. AxiVEND continues to provide support in scaling up aptamer deposition on the detection cartridges.

On June 1, 2022, the Company announced that it had retained Halteres Associates (“Halteres”), a consultancy focused on global health, diagnostics, and point-of-care testing, to assist with the commercialization of the aptamer-based rapid detection technology. Market research from the Halteres group will be used to identify the most commercially important pathogens for detection which will guide the aptamer development program. Halteres will evaluate several commercialization opportunities for the aptamer technology including human diagnostics, agriculture, wastewater, veterinary, and other potential uses in healthcare.

To bring the product to market, the Company will be required to obtain authorization from Health Canada under an interim order, or to obtain a Class IV Medical Device Active License (“MDAL”). The process for obtaining an MDAL involves completing certain testing requirements and demonstrating that the product is (i) safe, (ii) effective, and (iii) fit for purpose. Assuming that process is completed, the Company would then start preparing a product technical file, seek to obtain an ISO 13485 Certificate, and then seek to complete a Health Canada Class IV application.

Diesel Fuel Additive

The Company is also working to develop a stable graphene-based diesel fuel additive to improve combustion, increase burn rate, reduce greenhouse gas emissions and to improve fuel economy of diesel fuels, which initial testing has shown to increase the performance of diesel fuel. The Company is working to improve on these early results through additional optimization work. The Company has filed a provisional patent for its graphene-based fuel additive technology.

Primarily overseen by Dr. van der Kuur, the Company’s Vice-President – Science and Research, the Company is developing a process to functionalize GO to produce a stable dispersion in diesel fuel. The fuel additive was tested by Conestoga College in a Gunt 159 single cylinder test engine, which reported an improvement in fuel economy of over 10% under certain rpm. The Company’s research and development team improved the synthesis of the functionalized GO additive to reduce the size of the particles and increase the functional groups, which could lead to improved combustion. Zentek continues to work with Dr. Kheirkah at UBCO to test GO doped fuel as part of an NSERC alliance project for \$110,500 cash contribution and a total budget of \$311,500 over two years to continue doped fuel research. The project will focus on measuring the combustion of doped fuel in both droplet and spray combustion. The Company has spent approximately \$15,400 on this research and development project.

The Company intends to conduct further testing in 2022 and 2023, including: testing fuel economy, brake efficiency and emissions in a diesel engine for two different GO fuel additive concentrations; conducting spray combustion tests, which will provide an initial assessment of the GO additive; and testing and optimizing the GO fuel additive for diesel generator engines and marine engines and aviation usage. The Company currently estimates that the cost for such future testing is approximately \$325,000.

Icephobic Coating

The Company continues working to develop a new, patent-pending, carbon-based, nanotechnology-enhanced coating designed to prevent or reduce ice accretion for aviation (including drones) and wind energy applications.

Dr. van der Kuur, the Company's Vice-President – Science and Research is the primary overseer of the project, which has involved the use of dispersion technology to homogeneously mix graphene-based materials in an elastomer. The Company has filed a provisional patent on the technology. The Company has also conducted testing at National Research Council's Altitude Icing Wind Tunnel (AIWT) in Ottawa and prepared graphene-enhanced elastomer material and coated test coupons for testing.

The Company disclosed on February 28, 2022, that the icephobic coatings were undergoing full flight trials on a specially equipped research aircraft under real world ice-forming weather conditions. On March 14, 2022, the Company announced the results of three rounds of testing of its icephobic coating, including laboratory tests, real-world flights and applications related to drone operations in adverse weather. In real world testing the Company reported that video footage of icephobic coating on test pieces attached to a research aircraft undergoing flight trials targeting adverse weather environments has shown positive results and demonstrated that, under significant icing conditions, the coatings provide an effective deicing and anti-icing solution. Drone testing has shown that drone propellers coated with the icephobic material have demonstrated that higher thrust can be maintained when compared to a non-coated propeller due to the ability to shed ice that forms on the blades that would otherwise degrade the aerodynamic properties. Accelerated ageing testing has been completed by exposing samples coated with its icephobic elastomer to UV weathering for 1,000 hours, which approximates two years' worth of sun damage in typical Canadian weather. These samples were then tested in an icing wind tunnel under dynamic conditions and demonstrated significant retention of their icephobicity.

The Company, disclosed on September 19, 2022, that it filed a full patent application with the Patent Cooperation Treaty, the international patent office, on August 2nd, 2022, for Nanomaterial-Enhanced Elastomer for Passive Ice Accretion Prevention. The patent application is expected to publish approximately 6 months from the date of filing, marking the beginning of the 12-month national phase for the Company to apply directly in each country of interest. Testing by NRC is ongoing at the Anti-icing Materials International Laboratory in Quebec, testing the performance of the Company's coating on a small wind turbine in an indoor controlled environment, and NRC is preparing for outdoor, real-world environment testing of drone rotor blades with the Company's icephobic coating this winter.

The Company continues to consider and seek collaborators to commercialize this technology, including drone companies and companies specializing in elastomer production. The Company has not spent funds on this project and anticipates additional testing and development to cost approximately \$150,000.

Fire-Retardant Additive

The Company announced on March 28, 2022, that it had filed a provisional patent with the United States Patent and Trademark Office for an innovative Graphene Oxide-Metal-Organic Framework ("GO-MOF") compound for use in fire retardant products. Management of the Company considers the manufacturing of the GO-MOF compound as relatively easily scalable and efficient, due to the patent-pending facile synthesis process. The Company believes the fire-retardant GO-MOF additive could potentially be placed in a variety of coating products, such as latex, epoxies or included in polymers. When integrated into a polymer, it could potentially create a fire-resistant plastic that could be used in electrical vehicles, providing a fire-resistant nonmetal casing for the batteries. Management currently expects

that GO-MOF production could be achieved on the existing ZenGUARD™ industrial scale production facility with minimal additional capital expense.

Dr. van der Kuur, the Company's Vice-President of Science and Research is the primary overseer of the project. The Company has spent approximately \$15,400 on this research and development project, and intends to conduct further testing, and currently estimates that the cost for such future testing is approximately \$100,000. In the quarter ended June 30, 2022, optimizations to the formulations were performed at the Zentek lab prior to a testing program with a commercial partner.

Other Use-Cases for ZenGUARD™

The Company intends to continue exploring other applications and uses for its ZenGUARD™ compound, including, but not limited to, use in HVAC filters. On September 30, 2020, the Company first announced testing on graphene use for HVAC systems. On January 13, 2021, the Company announced that testing by a major Canadian certification company had confirmed that there was very little effect on air flow and pressure drop with a ZenGUARD™ treated filter compared to an untreated filter. The Company spent approximately \$30,800 on testing, including preliminary testing of ZenGUARD™-coated HVAC filter media for pressure drop, and increased challenge bacterial filtration efficiency on uncoated and coated MERV 8 and MERV 13 HVAC filters, overseen primarily by James Jordan, P.Eng., the Company's then Project Engineer and Dr. van der Kuur, the Company's Vice-President – Science and Research and Peter Wood, P.Eng., the Company's Vice-President, Special Projects. The Company then determined to wait for government support in order to proceed with testing, which was subsequently awarded on November 30, 2021. Further to the press release dated November 30, 2021, the Company announced that it has been awarded a research and development test contract through the ISC Testing Stream Call for Proposals to test ZenGUARD™-coated HVAC filters with interest from three different units within the National Research Council of Canada ("NRC"). The goal of the testing, conducted by CremCo Laboratories ("CCL") with assistance by the Aerospace Research Centre ("ARC"), a department of the National Research Council of Canada ("NRC") was to demonstrate: (i) a net reduction in the airborne viral load with ZenGUARD™ coating applied to standard filters; (ii) no modifications required to existing HVAC systems to achieve (i) above; (iii) no reduction in air flow rates, which means air exchange rates in the space will be unchanged; and (iv) no reduction in the air quality as the ZenGUARD™ coating was tested to ensure it does not contribute particles into the air stream. Phase 1 testing commenced in December 2021 after an extensive design process, calibration and assessment of the testing rig, and involved the test rig being installed inside an aerobiology chamber to push air through HVAC filter material with test organisms to study how these live airborne organisms were reduced by the ZenGUARD™ coating. Testing used multiple samples with repeated tests so that each filter's performance could be compared. It was determined that all Phase 1 targets were met including sufficient reduction in live airborne test organisms, no significant shedding of the ZenGUARD™ coating, and air flow rates that were not impacted by the coating. On April 11, 2022, the Company announced that, after successful completion of Phase 1 testing, it will proceed to Phase 2 testing. The start of Phase 2 testing has been delayed due to recent storm damage to the test building and a shortage of manpower and commenced in August 2022. Testing will be conducted at ARC with assistance from CCL. Airborne test organisms will again be used, and testing will be conducted in a controlled environment. The objective of Phase 2 testing is to demonstrate a reduction in live airborne surrogate contamination within a modular classroom environment, simulating a real-world environment. By testing ZenGUARD™-coated HVAC filters, NRC is also expected to gain the knowledge and equipment to evaluate how airborne infectious diseases spread within aircraft cabins and other indoor spaces. The Company has approximately \$200,000 budgeted for future testing an amount which is net of expected and awarded third party monies.

In addition, the active ingredient in ZenGUARD™ has low minimum inhibitory concentrations against several bacteria as tested by Dr. Tony Mazzulli from Mount Sinai Hospital in Toronto. The Company is exploring the potential to use this compound in therapeutic or pharmaceutical applications based on these results. On February 4, 2021, and March 2, 2021, the Company announced results of the Phase 2 cytotoxicity testing, by Nucro Technics testing laboratory, and included cytotoxicity testing that noted no adverse effects after seven days of repeated dosing. MRSA-related skin infection testing was performed on animals with inconclusive results. The Company is exploring further testing options pending continued research.. On March 10, 2022, the Company announced that it had retained Vimta Labs Limited ("Vimta"), a leading clinical research organization in India, to begin studies of ZenGUARD™ active ingredient

as a potential treatment of skin disease. Vimta will be performing pre-clinical research including collecting the *in vitro* and *in vivo* data that is required for the submission of an Investigational New Drug to the United States Food and Drug Administration which is a requirement for the administration of a new drug in humans. The pre-clinical work with Vimta is scheduled to be completed by fiscal Q1 2024. The Company decided to move forward with this work following cytotoxicity studies with Nucro-Technics and positive anecdotal results of various human skin infections including acne, warts and toenail fungal infections. There were no adverse effects recorded during these anecdotal trials. These human anecdotal cases form part of the Company's patent application filed December 21, 2021, under the Patent Cooperation Treaty entitled "Graphene-Silver Nanocomposites and Uses For Same As a Broad-Spectrum Antimicrobial" which was published on June 23, 2022.

On July 18, 2022, the Company filed a provisional patent on the use of ZenGUARD™ as an anti-inflammatory agent for dermatological conditions.

Other

The Company is also working with a number of research institutions developing processes to synthesize graphene, GO and graphene quantum dots, along with other possible applications for graphene. Potential markets for graphene include composites (e.g., concrete, rubber, plastic polymers and ceramics), sensors, water purification and filtration, coatings and solid-state lubricants, silicon-graphene and graphene aerogel anode material for next generation batteries along with aerospace applications. On February 18, 2022, the Company announced the filing of a provisional patent with the United States Patent and Trademark Office relating to a graphene-wrapped silicon anode material. The Company has other research projects commenced or contemplated including for applications in aluminum alloys, corrosion protection, battery technology, conductive polymers and others. The Company will report on these when it is appropriate to do so.

Albany Graphite Project

The Company owns 100% of the Albany Graphite Project in Northern Ontario, Canada. The unusual nature of the graphite in the Albany deposit and its potential economic significance motivated additional exploration drilling from 2012 to 2014. The graphene nanomaterials market was not considered as part of the June 2015 Preliminary Economic Assessment model. The current claims require a total of \$195,600 worth of assessment work per year to keep them in good standing and the Company has a total credit of approximately \$5.8M in available exploration reserves. The Company has no near-term plans to continue any significant work on the Albany Graphite Project in Northern Ontario and is not dependent on materials extracted from the Albany Graphite Project for its current business plans. On October 18, 2021, the TSXV changed the Company's classification from a "mining issuer" to an "industrial, technology, or life sciences issuer." The change of classification was approved by the shareholders of the Company on September 27, 2021, in accordance with the rules and policies of the TSXV.

On April 18, 2022, the Company announced that it has engaged The Benchmark Company, LLC ("Benchmark") to act as strategic financial advisor with respect to potential transactions relating to the Albany Graphite Project.

Business Objectives and Milestones

As at September 30, 2022, the Company had working capital of \$21,532,369.

On January 4, 2022, the Company completed a bought-deal prospectus offering raising gross proceeds of \$23,005,060 and a concurrent non-brokered private placement raising additional gross proceeds of \$10,009,022, for total gross proceeds of \$33,014,082. The Company disclosed in its final prospectus dated December 23, 2021 (the "Prospectus") that it expected the net proceeds of the financing to be (excluding any exercise of the overallotment option) 28,813,158 after deducting the payment of the commission to the underwriters.

The following table sets out the uses that the Company planned for such proceeds over the twenty-four month period following the financing, as disclosed in the Prospectus, and an update on the actual expenditures using such funds:

Use of Available Funds	Expected Amount as at date of Prospectus (\$)	Approximate Actual Amount spent as at September 30, 2022 (\$)
General and administrative costs	4,000,000	3,463,000
Acquisition of GO supply ⁽¹⁾	1,300,000	790,000
Construction of ZenGUARD™ production facility ⁽²⁾	1,500,000	2,050,000
Purchase of coating equipment ⁽²⁾	1,900,000	1,310,000
Construction of GO production plant ⁽³⁾	7,500,000	Nil
Potential strategic acquisition	1,500,000	Nil
Development of rapid detection technology ⁽⁴⁾	2,500,000	1,939,000
Building inventory of rapid detection tests	3,000,000	Nil
Research and development ⁽⁵⁾	2,000,000	1,073,000
Purchase of research and development facility ⁽⁵⁾	2,000,000	2,065,000
Estimated offering costs	300,000	292,000
Unallocated funds added to working capital	1,313,158	N/A
Total	28,813,158	12,982,000

Notes:

- (1) See “Current Business – ZenGUARD™ Anti-Microbial Compound”.
- (2) See “Current Business – Construction of ZenGUARD™ Industrial Scale Production and Coating Facility”.
- (3) See “Current Business – Proposed Construction of Graphene Oxide Production Facility”.
- (4) See “Business in Development – Aptamer-Based Rapid Detection Technology”.
- (5) See “Current Business – ZenGUARD™ Research and Development”.

From January 4, 2022, to September 30, 2022, the Company spent approximately \$12,982,000 of the \$28,813,158 that was expected to be available. General and administrative costs have been proportionally higher in the approximately nine months since the Prospectus, as the Company hired additional staff including regulatory staff, marketing staff and additional management personnel. Recent general and administrative costs include certain non-recurring expenses such as costs related to the Trebor receivership, and costs relating to obtaining a Nasdaq listing. The Company expended less than expected for the acquisition of GO, as its supplier experienced delays as a result of global shipping issues, and during such time the Company continued to use its existing inventory of GO. Under the purchase terms of physical receipt and quality control, the Company recognizes inventory for the GO acquisition when payment is issued and/or when credit has been pulled from the Company’s prepaid account. GO continues to be regularly delivered to the Company and the expense therefore is recognized on delivery.”

Overall Performance

During the six-month period ended September 30, 2022, the Company was mainly involved in scaling the production process of the ZenGUARD™ antimicrobial coating formulation at the pilot scale along with completing the engineering work for the industrial production facility. The Company also continued its graphene R&D activities which led to two provisional patent filings and one provisional patent license during this year. Overall, during the six-month period ended September 30, 2022, the Company had cash expenditures of approximately \$8,412,000 consisting mainly of property and equipment purchases, mortgage payments, research and development costs, professional and consulting fees and general operating expenses.

Results of Operations

Net loss

The Company recorded a net loss of \$3,410,055 with basic and diluted net loss per share of \$0.04 for the three-month period ended September 30, 2022 (2021 – loss of \$28,999,484 and \$0.32). The loss for the six-month period ended September 30, 2022, was \$8,444,257 with basic and diluted loss per share of \$0.09 (2021 – loss of \$30,859,023 and \$0.35).

Revenue

Revenue generated from operations for the three-month period ended September 30, 2022, was \$nil (2021 - \$150,145). Revenue generated from operations for the six-month period ended September 30, 2022, was \$48,105 (2021 - \$150,145). No revenue was recognized in the three-month period ended September 30, 2022 versus the same period of the prior year where \$150,145 was recognized for the sale of ZenGUARD™ coating to Trebor for the manufacture of masks. Interest and other income for the three-month period ended September 30, 2022, was \$97,878 (2021 - \$2,695). Interest and other income for the six-month period ended September 30, 2022, was \$155,952 (2021 - \$13,296). The Company has invested its excess cash and is currently earning interest on these investments.

Expenses

Stock-based compensation costs were \$1,005,582 for the three-month period ended September 30, 2022 (2021 - \$599,975) and \$2,281,709 for the six-month period ended September 30, 2022 (2021 - \$1,421,825). Stock-based compensation was based on the fair value of the options described in Note 10(c) of the unaudited condensed interim consolidated financial statements as calculated using the Black-Scholes option pricing model. Stock-based compensation is recognized over the vesting period of the underlying options. With the increase in employees, more stock options were granted.

Other expenses were \$195,755 for the three-month period ended September 30, 2022 (2021 - \$132,468) and \$439,873 for the six-month period ended September 30, 2022 (2021 - \$219,676). The following table details the material components of the Company’s other expenses for the six-month periods ended September 30, 2022 and 2021.

As at September 30, 2022 there were 26 employees on payroll versus 11 during the same period of the prior year. This increased proportionately other expenses that are impacted by head count such as dues and subscriptions, meals and entertainment and travel.

	Six-Months Ended September 30, 2022	Six-Months Ended September 30, 2021
Dues and subscriptions	47,493	12,524
Freight and delivery	39,267	-
Meals and entertainment	30,104	28,615
Office expenses	87,811	74,223
Other expenses	124,295	51,334
Travel	110,903	52,980
Total	\$439,873	\$219,676

Professional fees were \$406,231 for the three-month period ended September 30, 2022 (2021 - \$491,153) and \$895,466 for the six-month period ended September 30, 2022 (2021 - \$715,038). These fees consist primarily of the amounts charged for services provided by the Company’s lawyers, auditors, and accountants.

Investor relations and promotion expenses were \$150,253 for the three-month period ended September 30, 2022 (2021 - \$72,424) and \$190,678 for the six-month period ended September 30, 2022 (2021 - \$142,756). These expenses consist primarily of the costs of consultants, marketing trips and other costs such as attending industry conferences. Additional costs were incurred in the first half of fiscal 2023 with the Company now being listed on the Nasdaq.

Listing and filing fees were \$10,927 for the three-month period ended September 30, 2022 (2021 - \$32,314) and \$147,198 for the six-month period ended September 30, 2022 (2021 - \$52,092). These expenses consist primarily of the costs of maintaining registered status on various stock listing exchanges. In March 2022, the Company listed on the Nasdaq, incurring listing and filing fees in the first half of fiscal 2023 that were not incurred in the prior year for the same period.

Consulting fees were \$146,467 for the three-month period ended September 30, 2022 (2021 - \$283,189) and \$725,948 for the six-month period ended September 30, 2022 (2021 - \$348,089). The most significant component of the consulting costs incurred were for consultants working on regulatory and government matters.

Amortisation expense was \$116,006 for the three-month period ended September 30, 2022 (2021 - \$79,313) and \$271,706 for the six-month period ended September 30, 2022 (2021 - \$150,864). Amortization is taken on the capitalized cost of the Company's building, computers, equipment, leasehold improvements, and right-of-use asset.

Supplies and materials expense was \$16,431 for the three-month period ended September 30, 2022 (2021 - \$155,146) and \$558,922 for the six-month period ended September 30, 2022 (2021 - \$210,016). These expenses mainly related to supplies and materials purchased to continue graphene development. Operations were ramping up in the prior year and various supplies were being acquired to assist with the R&D activities. R&D consumables expense have scaled back in the current fiscal year resulting in less materials being required for operations.

Research and development expenses were \$211,006 for the three-month period ended September 30, 2022 (2021 - \$840,107) and \$885,113 for the six-month period ended September 30, 2022 (2021 - \$840,107). These expenses mainly related to continued research and development activities regarding graphene use and development. Q2 saw a decrease in spending versus Q2 of the prior year as the focus shifted to production.

Salaries and benefits expense was \$908,486 for the three-month period ended September 30, 2022 (2021 - \$289,774) and \$1,752,600 for the six-month period ended September 30, 2022 (2021 - \$727,013). These expenses relate to staffing costs required to operate the business. Currently there are 26 employees on payroll versus 11 during the same period of the prior year. Existing staff were also given increases based on a third-party compensation review.

Insurance expense was \$72,357 for the three-month period ended September 30, 2022 (2021 - \$39,095) and \$160,041 for the six-month period ended September 30, 2022 (2021 - \$52,660). These expenses relate to the costs required to adequately insure the Company's assets, operations and Directors and Officers. Insurance expense increased in the Q2 2023 as enhanced policies were taken for additional coverages.

Bad debts expense was \$127,112 for the three and six-month periods ended September 30, 2022 (2021 - \$nil). This expense in Q2 2023 relates to trade accounts receivable for which collection is questionable.

Directors' fees expense was \$65,625 for the three and six-month periods ended September 30, 2022 (2021 - \$nil). This expense relates to compensation paid to the Company's independent Directors which is new in fiscal 2023.

Cash Flows

During the six-month period ended September 30, 2022, cash decreased overall by \$8,906,178 (2021 – increased by \$168,530). Operating activities resulted in a decrease in cash of \$6,689,598 (2021 – decrease of \$3,188,666) due to continued spending on inventory, consulting and professional fees, research and development, salaries and benefits and other expenses. Investing activities resulted in a decrease in cash of \$1,722,189 (2021 – decrease of \$613,891) due mainly to property and equipment purchases. Financing activities resulted in a decrease in cash of \$494,391 (2021 – increase of \$3,971,087) due to repayments of long-term debt and the lease liability, partially offset by proceeds received from the exercise of stock options.

Mineral Exploration and Development

Albany Graphite Project

The claims comprising the Albany Graphite Project are presently held in good standing by the Company and there are sufficient assessment credits available to keep all of the 4F claims (Albany Graphite Project) in good standing for at least 30 years. There are no environmental liability issues related to any previous exploration work on the claims. The Company has not received from any government authority, any communication or notice concerning any actual or alleged breach of any environmental laws, regulations, policies or permits. The claims are located in the traditional territory of the Constance Lake First Nation. In July 2011, the Company and CLFN signed an exploration agreement for a mutually beneficial and co-operative relationship regarding exploration and pre-feasibility activities on the Albany Graphite Project. Under this agreement, the Company committed to establishing a joint implementation committee and conveying preferential opportunities for employment and contracting as well as contributing to a social fund for the benefit of CLFN children, youth and elders. In 2018, the parties signed a new Memorandum of Understanding (“MOU”) under which a project partnership structure will be created in support of the development of the Albany Graphite Project.

Subsequent to completion of the 2015 Preliminary Economic Assessment (“PEA”), most of the Albany Graphite Project work has been focused on metallurgical process development, environmental baseline studies, market studies, and research and development to determine the most attractive market opportunities for the Albany graphite products. Increasing interest in the materials produced from the Albany Graphite Project as a feed material for producing graphene or GO, is a consideration for management in potentially reconsidering the project development model conceived for the 2015 PEA, at some point in the future.

As a result of the Company’s change in business to an intellectual property development and commercialization company, during the year ended March 31, 2022, the Company conducted an impairment test and determined the recoverable amount of the exploration and evaluation property to be negligible. Accordingly, the Company recognized an impairment charge on the exploration and evaluation property of \$26,517,796 during the three-month period ended September 30, 2022 to reduce the carrying value to \$nil. The exploration and evaluation expenditures incurred during the year were recognized as an expense in the consolidated statements of loss and comprehensive loss as it was determined that the exploration and evaluation property was impaired and these expenditures had no future benefit.

Administration and Capitalization

On May 16, 2022, the Company announced that Wendy Ford had been appointed as the new Chief Financial Officer (“CFO”) of the Company, and that Brian Bosse was appointed as the Company’s Chief Operations Officer. Ms. Ford served as VP of Finance and CFO of Mancor Industries, a precision manufacturer of metal components and sub-assemblies. Prior to this, Ms. Ford served as CFO of AirBoss of America, a publicly traded company on the TSX, focused on the compounding, defense, and automotive industries. She has served in leadership roles including financial reporting, auditing, taxation, and compliance. Ms. Ford is a Chartered Professional Accountant and is a graduate of the University of Toronto. As part of her employment contract, Ms. Ford received 200,000 stock options at an exercise price of \$2.59. The options granted expire on May 13, 2025 and have a vesting period as follows: 1/3 at May 13, 2022; 1/3 at May 13, 2023; 1/3 at May 13, 2024.

Subsequent Events

On October 17, 2022, the Company issued 150,000 stock options to a number of employees with an exercise price of \$1.93 per share. The options granted expire on October 17, 2025 and have a vesting period as follows: 1/3 at October 17, 2022; 1/3 at October 17, 2023; 1/3 at October 17, 2024.

Summary of Quarterly Results

The following table sets out selected quarterly information for the eight most recently completed quarters, for which consolidated financial statements are prepared.

	Sep. 30, 2022 \$	Jun. 30, 2022 \$	Mar. 31, 2022 \$	Dec. 30, 2021 \$	Sep. 30, 2021 \$	Jun. 30, 2021 \$	Mar. 31, 2021 \$	Dec. 31, 2020 \$
Revenue	nil	48,105	161,618	35,420	150,145	nil	nil	nil
Other income	nil	58,074	-	470,886	4,312	56,782	181,563	174,236
Loss from discontinued operations	-	-	-	-	26,051,796	-	-	-
Net Loss	3,410,055	5,034,202	4,964,841	2,177,696	28,999,484	1,859,539	1,655,188	2,275,202
Net Loss per Share (basic and diluted) from discontinued operations	-	-	-	-	0.29	-	-	-
Net Loss per Share (basic and diluted) from continuing operations	0.04	0.05	0.05	0.02	0.03	0.02	0.02	0.03
Net Loss per Share (basic and diluted)	0.04	0.05	0.05	0.02	0.32	0.02	0.02	0.03

Discussion of interim period results

The Company began generating revenue during the quarter ended September 30, 2021, as a result of its License and Supply Agreement dated September 24, 2021, with Trebor. The quarterly net loss figure has been trending higher since the quarter ended September 30, 2020, due to the following factors:

1. Increased salaries and benefits costs due to hiring of additional staff to further develop intellectual property and ramp up production.
2. Increased spending on research and development activities to further develop intellectual property.
3. Increased professional fees incurred as a result of increase in legal expenditures.
4. Increased stock-based compensation expense due to granting of options to several directors, officers, employees and consultants. The Company has seen an increase in its stock price on the TSX Venture Exchange over the past 12 months resulting in a higher Black-Scholes valuation for options leading to increased stock-based compensation expense.
5. As a result of the change in business during the year ended March 31, 2022, the Company conducted an impairment test and determined the recoverable amount of the exploration and evaluation property to be negligible and the Company recognized an impairment charge on the exploration and evaluation property of \$26,051,796 to reduce the carrying value to \$nil.

Liquidity and Capital Resources

As at September 30, 2022, the Company had working capital of \$21,532,369 (2021 - \$2,997,720) and cash and cash equivalents of \$17,768,822 (2021 - \$3,260,079). The Company believes that the working capital on hand as at September 30, 2022 is sufficient to fund requirements for at least the next twelve months. The Company funded operations during the six-month period ended September 30, 2022, through the net proceeds of stock options exercised as well as through sales and the use of existing cash.

The Company began generating sales revenue during the quarter ended September 30, 2021, and will use the proceeds of the sales to partially fund future operations. On January 4, 2022, the Company completed a financing for aggregate gross proceeds of \$33,014,082 but may require additional financing in the future. The availability of equity capital, and the price at which additional equity could be issued, is dependent upon the success of the Company's activities, and upon the state of the capital markets generally. Additional financing may not be available on terms favourable to the Company or at all. If the Company does not receive future financing, it may not be possible for the Company to advance its business plans.

Transactions with Related Parties

The remuneration of key management personnel during the six-month periods ended September 30, 2022, and 2021 were as follows:

- a) Salaries and benefits - \$588,125 (2021 - \$563,333)
- b) Stock-based compensation - \$1,266,179 (2021 - \$827,089)

Key management personnel are those persons having authority and responsibility for planning, directing and controlling the activities of the Company directly or indirectly, including any directors (executive and non-executive) of the Company.

Current and Future Changes in Accounting Policy

Statement of Compliance

The unaudited condensed interim consolidated financial statements, including comparatives for the six-month period ended September 30, 2022, have been prepared in accordance with International Accounting Standard 34 - Interim Financial Reporting ("IAS 34") as issued by the International Accounting Standards Board ("IASB") and have been condensed with certain disclosures from the Company's audited consolidated financial statements for the year ended March 31, 2022 (the "Annual Financial Statements") omitted. Accordingly, the unaudited condensed interim consolidated financial statements should be read in conjunction with the Annual Financial Statements.

Future Accounting Changes

Certain pronouncements were issued by the IASB or the International Financial Reporting Interpretations Committee ("IFRIC") that are mandatory for accounting periods beginning on or after April 1, 2022, or later periods. Many are not applicable or do not have a significant impact to the Company and have been excluded.

Critical Judgments and estimation uncertainties

The areas which require management to make significant judgments, estimates and assumptions in determining carrying values include, but are not limited to:

Accounts receivable and loan receivable carrying values and impairment charges

In the determination of carrying values and impairment charges, management looks at the higher of recoverable amount or fair value less costs to sell in the case of assets and at objective evidence, significant or prolonged decline of fair value on financial assets indicating impairment. These determinations and their individual assumptions require that management make a decision based on the best available information at each reporting period.

Expected credit loss allowance and provision

The Company determines an expected credit loss allowance for trade receivables based on the estimated expected lifetime credit loss, considering the actual credit loss in prior years and forward-looking estimates of expected collections. This estimate varies depending on the nature of the trade receivables, the majority of which are associated with the health sciences business; however, also includes receivables from government agencies. The loss allowance is reviewed on a quarterly basis and any change in estimate is accounted for prospectively. The Company also assesses the expected credit loss of non-trade financial assets to determine if an allowance is required. The Company assessed the non-payment of the loan receivable and performed an analysis of collectivity based on the collateral against the loan and determined that no provision was required. Collectivity of customer balances classified as trade receivables may vary from the Company's estimation.

Income taxes and recoverability of potential deferred tax assets

In assessing the probability of realizing income tax assets recognised, management makes estimates related to expectations of future taxable income, applicable tax planning opportunities, expected timing of reversals of existing temporary differences and the likelihood that tax positions taken will be sustained upon examination by applicable tax authorities. In making its assessments, management gives additional weight to positive and negative evidence that can be objectively verified. Estimates of future taxable income are based on forecasted cash flows from operations and the application of existing tax laws in each jurisdiction.

The Company considers whether relevant tax planning opportunities are within the Company's control, are feasible, and are within management's ability to implement. Examination by applicable tax authorities is supported based on individual facts and circumstances of the relevant tax position examined in light of all available evidence. Where

applicable tax laws and regulations are either unclear or subject to ongoing varying interpretations, it is reasonably possible that changes in these estimates can occur that materially affect the amounts of income tax assets recognized. Also, future changes in tax laws could limit the Company from realizing the tax benefits from the deferred tax assets. The Company reassesses unrecognised income tax assets at each reporting period.

Discount rate on lease liability

All the components of the lease liability are required to be discounted to reflect the present value of the payments. The discount rate to use is the rate implicit in the lease, unless this cannot readily be determined, in which case the lessee's incremental borrowing rate is used instead. The definition of the lessee's incremental borrowing rate states that the rate should represent what the lessee would have to pay to borrow over a similar term and with similar security, the funds necessary to obtain an asset of similar value to the right-of-use asset in a similar economic environment. Significant judgment is required to estimate an incremental borrowing rate in the context of a right-of-use asset.

Share-based payments

Management determines costs for share-based payments using market-based valuation techniques. The fair value of the market-based and performance-based share awards are determined at the date of grant using generally accepted valuation techniques. Assumptions are made and judgment used in applying valuation techniques. These assumptions and judgments include estimating the future volatility of the stock price, expected dividend yield, future employee turnover rates and future employee stock option exercise behaviors and corporate performance. Such judgments and assumptions are inherently uncertain. Changes in these assumptions affect the fair value estimates.

Existence of decommissioning and restoration costs and the timing of expenditure

Decommissioning, restoration and similar liabilities are estimated based on the Company's interpretation of current regulatory requirements, constructive obligations and are measured at fair value. Fair value is determined based on the net present value of estimated future cash expenditures for the settlement of decommissioning, restoration or similar liabilities that may occur upon decommissioning of the mine. Such estimates are subject to change based on changes in laws and regulations and negotiations with regulatory authorities.

Financial Instruments and Other Instruments

The Company's financial instruments consist of cash and cash equivalents, accounts and other receivables, loan receivable, accounts payable and accrued liabilities, lease liability and long-term debt. Unless otherwise noted, the Company does not expect to be exposed to significant interest, currency or credit risks arising from these financial instruments. The Company estimates that the fair value of these financial instruments approximates carrying values.

As at September 30, 2022, the Company does not have any financial instruments recorded at fair value and that require classification within the fair value hierarchy.

Fair value estimates are made at the balance sheet date based on relevant market information and information about the financial instrument. These estimates are subjective in nature and involve uncertainties in significant matters of judgment and therefore cannot be determined with precision. Changes in assumptions could significantly affect these estimates.

Disclosure of Outstanding Share Data

The Company is authorized to issue an unlimited number of shares, of which 99,533,982 (2021 – 90,462,435) shares were issued and outstanding as fully paid and non-assessable as at September 30, 2022.

Refer to Note 10(c) of the unaudited condensed interim consolidated financial statements for details regarding stock options issued and exercisable as at September 30, 2022.

As at November 11, 2022, the Company had 99,533,982 common shares issued and outstanding as fully paid and non-assessable. The Company also had 8,894,001 stock options outstanding as at November 10, 2022.

Risks and Uncertainties

The operations of the Company are speculative due to the high-risk nature of its business, which includes the development of certain intellectual property and the manufacturing of graphene related products, and which may include the future acquisition, and financing. These risk factors could materially affect the Company's future operating results and could cause actual events to differ materially from those described in forward-looking information relating to the Company. Accordingly, any investment in securities of the Company is speculative and investors should not invest in securities of the Company unless they can afford to lose their entire investment.

The Company assesses and attempts to minimize the effects of these risks through careful management and planning of its operations and hiring qualified personnel but is subject to a number of limitations in managing risk resulting from its early stage of development. Below is a non-exhaustive summary of the principal risks and related uncertainties that may impact the Company. Such risk factors, as well as additional risks and uncertainties set out elsewhere in the Company's publicly filed documents or that may not presently be known to the Company or that the Company currently deems immaterial, could have a material adverse effect on the Company's business, financial condition and results of operations or the trading price of the common shares of the Company.

As at September 30, 2022, there was an increase in credit risk as a result of trade receivables now being generated through sales and the loan receivable.

Negative Operating Cash Flow

During the six-month period ended September 30, 2022, the Company had negative operating cash flow because its revenues did not exceed its operating expenses. In addition, as a result of the Company's business plans for the development of its products, the Company expects cash flow from operations to be negative until revenues improve to offset its operating expenditures. The Company's cash flow from operations may be affected in the future by expenditures incurred by the Company to continue to develop its products. To the extent the Company has negative cash flow in any future period, the Company may be required to allocate funds to fund such negative cash flow from operating activities. In order to stay in business, in the absence of cash flow from operations, the Company will have to raise funding through financing activities. However, there is no certainty the Company will be able to raise funds at all or on terms acceptable to the Company in the event it needs to do so. Furthermore, additional funds raised by the Company through the issuance of equity or convertible debt securities would cause the Company's current shareholders to experience dilution. Such securities also may grant rights, preferences or privileges senior to those of the Company's shareholders. The Company does not have any contractual restrictions on its ability to incur debt and, accordingly, the Company could incur significant amounts of indebtedness to finance its operations. Any such indebtedness could contain restrictive covenants, which likely would restrict the Company's operations.

Uncertainties Relating to the Company's Business Plans

There is no assurance that broad successful commercial applications may be feasible for the Company. The Company is continuing to explore, develop, and test its current products and new products, and there can be no assurance that new uses of existing products or new products will be fully developed for commercial application, that test results will be successful, if completed at all, that any necessary permits or approvals required in order to market such products will be obtained by the Company, or that existing technology or products will become profitable. Furthermore, there is no assurance that the Company will complete any acquisitions or acquire any know-how or trade secrets to carry out certain of its future objectives. Should the Company fail to achieve any of the foregoing, this could have a material adverse impact on the business and planned business of the Company.

The Company's business is in part dependent on patents, trade secret and other intellectual property laws of Canada, and potentially foreign jurisdictions. The Company may be unable to prevent third parties from using its intellectual property without its authorization. Some of the Company's current or future technologies and trade secrets may not be covered by any patent or patent application, and the Company's issued and pending patents may not provide the Company with any competitive advantage and could be challenged by third parties. The Company's inability to secure issuance of pending patent applications may limit its ability to protect the intellectual property rights these pending patent applications were intended to cover. The Company's competitors may attempt to design around its patents to avoid liability for infringement and, if successful, could adversely affect the Company's market share. Furthermore, the expiration of the Company's patents may lead to increased competition.

Additionally, the Company plans to construct facilities for some of its operations and business activities. There can be no assurance that locations will be secured on terms favourable to the Company or at all, that engineering plans will be completed or will be satisfactory for the intended business activities of the Company, that any required permitting will be obtained, that construction of such facilities will be completed, or that such facilities will ever become operational. If such facilities are not constructed, or do not become operational, or do not operate at the capacity required or anticipated, there could be a material adverse effect of the Company's planned business and operations.

Economic and Political Conditions

Worldwide financial and economic cycles or conditions are uncertain, and recovery from a business downturn or recession could be very slow and have a significant impact on the Company's business. The Company's business is sensitive to changes in economic and political conditions, including interest rates, currency issues, energy prices, trade issues, international or domestic conflicts or political crises, and epidemics or pandemics, such as the strain of COVID-19.

As at the date hereof, the global reactions to the spread of COVID-19 have led to, among other things, restrictions on travel and gatherings of individuals, quarantines, temporary business closures and a general reduction in consumer activity. While these effects are expected to be temporary, the duration of the disruptions to business internationally and the related financial impact cannot be estimated with any degree of certainty at this time. In addition, the increasing number of individuals infected with COVID-19 could result in an even greater global health crisis that could adversely affect global economies and financial markets, resulting in a protracted economic downturn that could have an adverse effect on the Company's prospects.

The responses of governmental authorities and corporate entities, including through mandated or voluntary shutdowns, may also lead to a general long-term slow-down in the economy and may lead to disruptions to the Company's workforce and facilities, customers, sales and operations and supply chain.

Measures taken by the governments worldwide and voluntary measures undertaken by the Company with a view to the safety of the Company's employees, may adversely impact the Company's business.

In particular, as a result of the foregoing, COVID-19 could materially and adversely impact the Company's business, including without limitation, employee health, workforce availability and productivity, limitations on travel, supply chain disruptions, increased insurance premiums, and restrictions to the Company's ability to conduct its business. Also, the Company's revenues and cash resources may be negatively affected, it may need to assist potential customers with obtaining financing or government incentives to help customers fund their purchases of the Company's products and demand for the Company's products may decrease as partners and potential customers defer their projects. Any such disruptions or closures could have a material adverse effect on the Company's business. In addition, parties with whom the Company does business or on whom the Company is reliant may also be adversely impacted by the COVID-19 pandemic which may in turn cause further disruption to the Company's business. Any long-term closures or suspensions may also result in the loss of personnel or the workforce in general as employees seek employment elsewhere.

The impact of COVID-19 and government responses thereto may also continue to have a material impact on financial results and could constrain the Company's ability to obtain equity or debt financing in the future, which may have a material adverse effect on its business, financial condition and results of operations.

The Company is actively monitoring the situation and will respond as the impact of the COVID-19 pandemic evolves, which will depend on several factors set out above. The extent to which the pandemic will impact the Company's operations in the future is highly uncertain and cannot be predicted with confidence as at the date hereof but could have a material adverse effect on the Company's business, financial condition and results of operations. These uncertainties include, but are not limited to, the duration of the outbreak, the ability of governments in countries in which the Company conducts business to curtail the spreading of the virus, the economic recovery as well as community and social stabilities. Any of these uncertainties, and others, could have further material adverse effects on the Company's business and operations. The financial statements do not include any adjustments that might result from the outcome of this uncertainty.

The credit and financial markets have experienced extreme volatility and disruptions due to the current conflict between Ukraine and Russia. The conflict is expected to have further global economic consequences, including but not limited to the possibility of severely diminished liquidity and credit availability, declines in consumer confidence, declines in economic growth, increases in inflation rates and uncertainty about economic and political stability. In addition, the United States and other countries have imposed sanctions on Russia which increases the risk that Russia, as a retaliatory action, may launch cyberattacks against the United States, its government, infrastructure and businesses. Any of the foregoing consequences, including those we cannot yet predict, may cause our business, financial condition, results of operations and the price of our ordinary shares to be adversely affected.

Revenue from Graphene related product Sales; Long and Complex Sales Cycle

To date, the Company has recorded minimal revenue from its graphene enhanced products sales. There can be no assurance that significant losses will not occur in the near future or that the Company will be profitable in the future. The Company's operating expenses, and capital expenditures may increase in subsequent years. The Company expects to continue to incur losses unless and until such time as it enters into long-term and large-volume supply agreements and generates sufficient revenues to fund its continuing operations.

Intellectual Property

The Company relies on the patent, trade secret and other intellectual property laws of Canada, and foreign jurisdictions. The Company may be unable to prevent third parties from using its intellectual property without

its authorization. The unauthorized use of the Company's intellectual property could reduce any competitive advantage that it has developed, reduce its market share or otherwise harm its business. In the event of unauthorized use of the Company's intellectual property, litigation to protect and enforce the Company's rights could be costly, and the Company may not prevail.

Some of the Company's current or future technologies and trade secrets may not be covered by any patent or patent application, and the Company's issued and pending patents may not provide the Company with any competitive advantage and could be challenged by third parties. The Company's inability to secure issuance of pending patent applications may limit its ability to protect the intellectual property rights these pending patent applications were intended to cover. The Company's competitors may attempt to design around its patents to avoid liability for infringement and, if successful, could adversely affect the Company's market share. Furthermore, the expiration of the Company's patents may lead to increased competition.

In addition, effective patent, trade secret and other intellectual property protection may be unavailable or limited in some foreign countries. In some countries, the Company may not apply for patent or other intellectual property protection. The Company also relies on unpatented technological innovation and other trade secrets to develop and maintain its competitive position. Although the Company generally enters into confidentiality agreements with its employees and third parties to protect its intellectual property, these confidentiality agreements are limited in duration, could be breached and may not provide meaningful protection of its trade secrets. Adequate remedies may not be available if there is an unauthorized use or disclosure of the Company's trade secrets and manufacturing expertise. In addition, others may obtain knowledge about the Company's trade secrets through independent development or by legal means. The failure to protect the Company's processes, technology, trade secrets and proprietary manufacturing expertise, methods and compounds could have a material adverse effect on its business by jeopardizing critical intellectual property.

Where a product formulation or process is kept as a trade secret, third parties may independently develop or invent and patent products or processes identical to such trade secret products or processes. This could have a material adverse effect on the Company's ability to make and sell products or use such processes and could potentially result in costly litigation in which the Company might not prevail. The Company could face intellectual property infringement claims that could result in significant legal costs and damages and impede its ability to produce key products, which could have a material adverse effect on its business, financial condition, and results of operations.

Product Development and Technological Change

There is no assurance that broad successful commercial applications for the Company's products may be feasible. Most, if not all, of the scientific and engineering data related to the Company's products has been generated by the Company's own laboratories or laboratory environments of the Company's partners, such as universities. There can be no assurance that laboratory data translates to or is representative in commercial applications.

Additionally, the industries in which the Company seeks to operate are characterized by rapid technological change and frequent new product introductions. Part of the Company's business strategy is to monitor such change and take steps to remain technologically current, but there is no assurance that such a strategy will be successful. If the Company is not able to adapt to new advances in materials sciences, or if unforeseen technologies or materials emerge that are not compatible with the Company's or that could replace its products, the Company's revenues and business would likely be adversely affected.

Market Development and Growth

Failure to further develop the Company's key markets and existing geographic markets or to successfully expand its business in the future into new markets could have an adverse impact on sales growth and operating results.

The Company's ability to further penetrate its key markets and the existing geographic markets in which it competes and/or aims to compete, and to successfully expand its business into other countries, is subject to numerous factors, many of which are beyond its control. There can be no assurance that efforts to increase market penetration in the Company's key markets and existing geographic markets will be successful. Failure to achieve these goals may have a material adverse effect on the Company's operating results.

Unpredictable Sales Cycles

The sales cycle for graphene products may range considerably from one to multiple years from the time a customer begins testing the Company's product until the time that they could be used in a commercial product. Timing of product introduction could vary significantly based on the target market. Additionally, any demand for the Company's products based in whole or in part on the current coronavirus (COVID-19) pandemic could materially change in the event the pandemic ends or decreases in severity. The Company has demonstrated little track record of success in completing customer development projects, which makes it difficult to evaluate the likelihood of future success. The sales and development cycles for the Company's products are subject to customer budgetary constraints, internal acceptance procedures, competitive product assessments, scientific and development resource allocations, and other factors beyond the Company's control. If the Company is not able to successfully accommodate these factors to achieve commercial success, the Company may be unable to achieve sufficient sales to reach profitability.

Government Regulation and Import/Export Controls

The Company's future operations, including development, and commencement and continuation of commercial production, require licenses, permits or other approvals from various federal, provincial, local and potentially foreign governmental authorities, and such operations are or will be governed by laws and regulations relating to production, exports, taxes, labor standards, occupational health and safety, waste disposal, toxic substances, prospecting, development, mining, land use, water use, environmental protection, land claims of indigenous people and other matters. Furthermore, in certain foreign jurisdictions, these regulatory requirements may be more stringent than those in Canada. Certain export control laws or economic sanctions laws may include restrictions or prohibitions on the sale or supply of certain products and services to embargoed or sanctioned countries, governments, persons and entities. In addition, various countries regulate the import of certain technology, including import and export permitting and licensing requirements, and have enacted or could enact laws that could limit the Company's ability to distribute its products. Changes in the Company's products, or future changes in export and import regulations may prevent any potential international customers from utilizing the Company's products globally or, in some cases, prevent the export or import of the Company's products to certain countries, governments, or persons altogether.

Any change in export or import regulations, economic sanctions, or related legislation, or change in the countries, governments, persons, or technologies targeted by such regulations, could result in decreased use of the Company's products in the future by, or in the Company's decreased ability to export or sell its products to, potential international customers. Any limitation on the Company's ability to export or sell its products would likely adversely affect the Company's future business, results of operations, and financial results.

Large volume production of graphene requires permits and approvals from various government authorities, and is subject to extensive federal, provincial, state, and local laws and regulations governing development, production, exports, taxes, labour standards, occupational health and safety, environment and other matters. As graphene is a new chemical substance, production and sale of graphene may be subject to specific occupational health and safety and environment regulatory approvals in different jurisdictions including, without limitations, under the *Canadian Environmental Protection Act* (Canada), the *Food and Drug Act* (Canada), the *Toxic Substances Control Act* (USA), the *Food Drug and Cosmetic Act* (USA) and the *Registration, Evaluation, Authorization and Restriction of Chemicals* (Europe).

Health Canada also regulates certain markets into which the Company intends to supply products or license its intellectual property. There is no assurance that Health Canada or any other body will grant license for sales into markets it regulates. Each foreign jurisdiction for the Company's products is regulated and no assurance exists that sales of graphene-related products will be permitted. Any inability by the Company to obtain approval from Health Canada and/or international bodies could have a material adverse impact of the business of the Company.

The Company is also subject to consumer protection laws that may impact its sales and marketing efforts. These laws, as well as any changes in these laws, could make it more difficult for the Company to sell and market its products. These laws and regulations are subject to change over time and thus the Company must continue to monitor and dedicate resources to ensure continued compliance. Non-compliance with applicable regulations or requirements could subject the Company to investigations, sanctions, enforcement actions, disgorgement of profits, fines, damages, civil and criminal penalties, or injunctions. If any governmental sanctions are imposed, or if the Company does not prevail in any possible civil or criminal litigation, its business, operating results, and financial condition could be materially adversely affected.

Additionally, in order for the Company to carry out its activities, any required licenses and permits must be obtained and kept current. There can be no assurance, however, that the Company will obtain on reasonable terms or at all the permits and approvals, and the renewals thereof, which it may require for the conduct of its future operations or that compliance with applicable laws, regulations, permits and approvals will not have an adverse effect on the Company's business plans. Possible future environmental and mineral tax legislation, regulations and actions could cause additional expense, capital expenditures, restrictions and delay on the Company's planned exploration and operations, the extent of which cannot be predicted.

Failure to comply with applicable laws, regulations and permitting requirements may result in enforcement actions thereunder, including orders issued by regulatory or judicial authorities causing operations to cease or be curtailed, and may include corrective measures requiring capital expenditures, installation of additional equipment, or remedial actions. Parties engaged in mining operations may be required to compensate those suffering loss or damage by reason of the mining activities and may have civil or criminal fines or penalties imposed for violations of applicable laws or regulations.

Industry Competition

The Company seeks to compete with other graphene and manufacturing companies, in highly competitive markets. Some of the Company's competitors have substantially greater financial, marketing and other resources and higher market share than the Company has in certain products or geographic areas. As the markets for the Company's products expand, additional competition may emerge, and competitors may commit more resources to products which directly compete with the Company's products. There can be no assurance that the Company will be able to compete successfully with existing competitors or be able to develop any market for its products, or that its business will not be adversely affected by increased competition or by new competitors.

There is no assurance that the Company will continue to be able to compete successfully with its competitors in acquiring such properties or prospects and any such inability could have a material adverse effect on the Company's business and financial condition.

Lack of Trading Market for Graphene

Unlike commodity minerals such as copper, gold or silver, industrial minerals such as graphene precursor graphene materials and graphite do not have a metals exchange or an open market upon which to trade and therefore prices are not set in an open market or publicly traded market, and there can be no assurance that certain items can be sold or purchased at any time. As prices are set with private suppliers and private customers, it is difficult to predict what market prices may be at the time of any transaction. There can be no guarantees that the Company will be able to sell its graphene products in a profitable manner, or at all.

Shortages

The Company will be dependent on various supplies, equipment, parts and labour, and the services of contractors to carry out its business objectives. The availability and cost of such supplies, equipment, parts or labour or the services of contractors could have a material adverse effect on the Company's ability to successfully carry out its exploration and development activities.

Liquidity Concerns and Future Financing

The Company's approach to managing liquidity risk is to ensure that it will have sufficient liquidity to meet liabilities when due. As of September 30, 2022, the Company had a cash balance of \$17,768,822 (2021 - \$3,260,079) to settle current liabilities of \$2,399,900 (2021 - \$1,051,514). The Company is ultimately dependent on the commercial sales of its products. Any delay in the sales of such products could require additional financing. There can be no assurance that the Company will be successful in obtaining the required financing as and when needed. Volatile markets may make it difficult or impossible for the Company to obtain debt financing or equity financing on favorable terms, if at all. Failure to obtain additional financing on a timely basis may cause the Company to postpone or slow down its development plans or reduce or terminate some or all of its activities.

Reliance on Key Personnel

The Company's development to date has depended, and in the future, will depend largely on the efforts of key management and other key personnel. Loss of any of these people, particularly to competitors, could have a material adverse effect on the Company's business. Further, with respect to the future development of the Company's projects, it may become necessary to attract both international and local personnel for such development. The marketplace for key skilled personnel is becoming more competitive, which means the cost of hiring, training, and retaining such personnel may increase. Factors outside the Company's control, including competition for human capital and the high-level of technical expertise and experience required to execute this development will affect the Company's ability to employ the specific personnel required. The failure to retain or attract a sufficient number of key skilled personnel could have a material adverse effect on the Company's business, results of operations, and financial condition. The Company has not taken out and does not intend to take out "key man insurance" in respect of any directors, officer, or other employees.

Qualified Employees

Recruiting and retaining qualified personnel is critical to the Company's success. Especially if it relates to its graphene operations, finding skilled scientists and a sales team familiar with the subject matter is difficult. As the Company grows further, the need for skilled labour will increase. The number of persons skilled in the high-tech manufacturing business is limited and competition for this workforce is intense. This may adversely affect the business of the Company if it is unable to recruit and retain qualified personnel as and when required.

Cybersecurity Threats

The reliability and security of the Company's information technology ("IT") systems is important to the Company's business and operations. Although the Company has established and continues to enhance security controls intended to protect the Company's IT systems and infrastructure, there is no guarantee that such security measures will be effective in preventing unauthorized physical access or cyberattacks. A significant breach of the Company's IT systems could, among other things, cause disruptions in the Company's manufacturing operations (such as operational delays from production downtime, inability to manage the supply chain or produce product for customers, disruptions in inventory management), lead to the loss, destruction, corruption or inappropriate use of sensitive data, including employee information or intellectual property, result in lost revenues due to theft of funds or due to a disruption of activities, including remediation costs, or from litigation,

finances and liability or higher insurance premiums, the costs of maintaining security and effective IT systems, which could negatively affect results of operations and the potential adverse impact of changing laws and regulations related to cybersecurity or result in theft of the Company's, its customers' or suppliers' intellectual property or confidential information. If any of the foregoing events (or other events related to cybersecurity) occurs, the Company may be subject to a number of consequences, including reputational damage, a diminished competitive advantage and negative impacts on future opportunities which could have a material adverse effect on the Company.

Share Price Fluctuations

The market price of securities of many companies, particularly development stage companies, experience wide fluctuations in price that are not necessarily related to the operating performance, underlying asset values or prospects of such companies. There can be no assurance that fluctuations in the Company's share price will not occur. In particular, the fluctuations may be exaggerated if the trading volume of the Company's common shares is low.

Cost Absorption and Purchase Orders

Especially as it relates to its activities in the transportation industry, and given the current trends in that industry, the Company is under continuing pressure to absorb costs related to product design and development, engineering, program management, prototypes and validation. In particular, OEMs are requesting that suppliers pay for the above costs and recover these costs through the piece price of the applicable component. Contract volumes for customer programs not yet in production are based on the Company's customers' estimates of their own future production levels. However, actual production volumes may vary significantly from these estimates due to a reduction in consumer demand or new product launch delays, often without any compensation to the supplier by its OEM customer. Typical purchase orders issued by customers do not require that they purchase a minimum number of the Company's products. For programs currently under production, the Company is generally unable to request price changes when volumes differ significantly from production estimates used during the quotation stage. If estimated production volumes are not achieved, the product development, design, engineering, prototype and validation costs incurred by the Company may not be fully recovered. Similarly, future pricing pressure or volume reductions by the Company's customers may also reduce the amount of amortized costs otherwise recoverable in the piece price of the Company's products. Either of these factors could have an adverse effect on the Company's profitability. While it is generally the case that once the Company receives a purchase order for products of a particular vehicle program it would continue to supply those products until the end of such program, customers could cease to source their production requirements from the Company for a variety of reasons, including the Company's refusal to accept demands for price reductions or other concessions.

Acquisitions

The Company could seek to acquire complementary businesses, assets, technologies, services or products, at competitive prices. The Company could pursue acquisitions in those product areas which were identified as key to the Company's long-term business strategy. However, as a result of intense competition in these strategic areas, the Company may not be able to acquire the targets needed to achieve its strategic objectives. The completion of such transactions poses additional risks to the Company's business. Acquisitions are subject to a range of inherent risks, including the assumption of incremental regulatory/compliance, pricing, supply chain, commodities, labor relations, litigation, environmental, pensions, warranty, recall, IT, tax or other risks. Although the Company seeks to conduct appropriate levels of due diligence on acquisition targets, these efforts may not always prove to be sufficient in identifying all risks and liabilities related to the acquisition, including as a result of: limited access to information; time constraints for conducting due diligence; inability to access target company facilities and/or personnel; or other limitations in the due diligence process. Additionally, the Company may identify risks and liabilities that cannot be sufficiently mitigated through appropriate contractual

or other protections. The realization of any such risks could have a material adverse effect on the Company's operations or profitability. The benefit to the Company of previous and future acquisitions is highly dependent on the Company's ability to integrate the acquired businesses and their technologies, employees and products into the Company, and the Company may incur costs associated with integrating and rationalizing the facilities (some of which may need to be closed in the future). The Company cannot be certain that it will successfully integrate acquired businesses or that acquisitions will ultimately benefit the Company. Any failure to successfully integrate businesses or failure of the businesses to benefit the Company could have a material adverse effect on its business and results of operations. Such transactions may also result in additional dilution to the Company's shareholders or increased debt. Such transactions may involve partners, and the formula for determining contractual sale provisions may be subject to a variety of factors that may not be easily quantified or estimated until the time of sale (such as market conditions and determining fair market value).

Launch and Operational Costs

The launch of new business, in an existing or new facility, is a complex process, the success of which depends on a wide range of factors, including the production readiness of the Company and its suppliers, as well as factors related to tooling, equipment, employees, initial product quality and other factors. A failure to successfully launch material new or takeover business could have an adverse effect on profitability. The Company's manufacturing processes are vulnerable to operational problems that can impair its ability to manufacture its products in a timely manner, or which may not be performing at expected levels of profitability. The Company's facilities and proposed facilities contain complex and sophisticated equipment that is used in its manufacturing processes. The Company could experience equipment failure in the future due to wear and tear, design error or operator error, among other things, which could have an adverse effect on profitability. From time to time, the Company may have some operating divisions which are not performing at expected levels of profitability. Significant underperformance of one or more operating divisions could have a material adverse effect on the Company's profitability and operations.

Material and Commodity Prices

Prices for key raw materials and commodities used in the production of graphene-based products, as well as energy prices, have proven to be volatile at certain times. To the extent that the Company is unable to fully mitigate its exposure to price change of key raw materials and commodities, particularly through engineering products with reduced content, by passing price increases to customers, or otherwise, such additional costs could have a material adverse effect on profitability. Increased energy prices could also have an impact on production or transportation costs which in turn could affect competitiveness.

Uninsured Risks

The Company maintains insurance to cover normal business risks. In the course of its manufacturing businesses, certain risks and, in particular, unexpected or unusual catastrophic events including explosions and fire may occur. It is not always possible to fully insure against such risks as a result of high premiums or other reasons. Should such liabilities arise, they could reduce or eliminate any future profitability and result in increasing costs and a decline in the value of the common shares of the Company.

Litigation

The Company has entered into legally binding agreements with various third parties, including supply, license, distribution, non-disclosure, consulting and partnership agreements. The interpretation of the rights and obligations that arise from such agreements is open to interpretation and the Company may disagree with the position taken by the various other parties resulting in a dispute that could potentially initiate litigation and cause the Company to incur legal costs in the future. Given the speculative and unpredictable nature of litigation, the outcome of any such disputes could have a material adverse effect on the Company's business.

Credit risk

As at September 30, 2022, the Company's credit risk was primarily attributable to cash, accounts and other receivables and loan receivable. The Company issued a loan receivable during the year ended March 31, 2022, further increasing its exposure to credit risk. The Company performed an analysis of collectivity and based on the collateral against the loan, determined that no provision was required. Financial instruments included in accounts and other receivables consisted of trade receivables generated through sales as well as recoverable Harmonized Sale Tax. The Company's cash is held with reputable financial institutions. Management believes that the credit risk with respect to financial instruments included in accounts and other receivables is remote.

Interest rate risk

The Company has cash and cash equivalent balances at federally regulated Canadian banks. The Company periodically monitors the investments it makes, the security of such investments and is satisfied with the credit ratings of its banks. The Company closely monitors interest rates to determine the appropriate course of action to be taken by the Company.

Price risk

The Company is exposed to price risk with respect to commodity prices. The Company closely monitors commodity prices to determine the appropriate course of action to be taken by the Company.

Financial Capability and Additional Financing

The Company has limited financial resources and there is no assurance that sufficient additional funding will be available to enable it to fulfill its business objectives or obligations, on acceptable terms or at all. Unanticipated expenses and other developments could cause existing funds to be depleted sooner than expected. In the event that its existing cash resources are inadequate to fund operational expenses, and in order to fund the planned business objectives of the Company, the Company will be required to raise additional financing from external sources, such as debt financing, equity financing or joint ventures. The Company's ability to raise additional equity financing may be affected by numerous factors beyond the Company's control, including, but not limited to, adverse market conditions, commodity price changes and an economic downturn. Failure to obtain additional funding on a timely basis could result in delay or indefinite postponement of the development of the Company's business and could cause the Company to reduce or terminate its operations. Additional funds raised by the Company from treasury share issuances may result in significant dilution to existing shareholders, a depressive effect on the price of the common shares and/or a change of control.

Permits and Government Regulation

Although the Company believes it has all of the necessary permits to carry out the proposed business programs, the operations of the Company may require licenses and permits from time to time from various governmental authorities to carry out exploration and development at its projects or locations. Obtaining permits can be a complex, time-consuming process. There can be no assurance that the Company will be able to obtain the necessary licenses and permits on acceptable terms, in a timely manner or at all. The costs and delays associated with obtaining permits and complying with these permits and applicable laws and regulations could stop or materially delay or restrict the Company from continuing or proceeding with existing or future operations or projects. Any failure to comply with permits and applicable laws and regulations, even if inadvertent, could result in the interruption or closure of operations or material fines, penalties or other liabilities. In addition, the requirements applicable to sustain existing permits and licenses may change or become more stringent over time and there is no assurance that the Company will have the resources or expertise to meet its obligations under such licenses and permits.

Fluctuating Prices

The profitability of the Company's operations will be dependent upon the market price of the ZenGUARD™ masks and other products, their global acceptance and demand along with their regulatory approvals in other jurisdictions. The level of interest rates, rate of inflation, production costs, healthcare and consumer demand, and stability of exchange rates can all cause significant fluctuations in revenue. Such external economic factors are in turn influenced by changes in international purchasing patterns, COVID-19 pandemic situation, monetary systems and political developments.

Environmental Regulation

The Company's Albany Graphite Project is subject to environmental laws and regulations which may materially and adversely affect its future operations. These laws and regulations control the exploration and development of the Albany Graphite Project and their effects on the environment, including air and water quality, waste handling and disposal, the protection of different species of plant and animal life, and the preservation of lands. These laws and regulations will require the Company to acquire permits and other authorizations for certain activities. There can be no assurance that the Company will be able to acquire such necessary permits or authorizations on a timely basis, if at all.

Further, environmental legislation is evolving in a manner which will require stricter standards and enforcement, increased fines and penalties for non-compliance, more stringent environmental assessments of proposed projects and a heightened degree of responsibility for companies and their officers, directors and employees. There is no assurance that future changes in environmental regulation, if any, will not adversely affect the Company's operations.

The Company is not currently insured against most environmental risks. Without such insurance, and if the Company becomes subject to environmental liabilities, the payment of such liabilities would reduce or eliminate its available funds or could exceed the funds the Company has to pay such liabilities and result in bankruptcy.

Economic Dependence on Supply Agreements

Currently, the Company has entered into a limited number of supply or sales agreements for the sale of its products. Until additional supply agreements are executed by the Company, the Company's revenues will be completely dependent on such agreements. If such agreements are terminated, or if less of the Company's product than anticipated is purchased pursuant to such agreements, this could have a material adverse impact on the Company's business, operations and results.

Legal proceedings and regulatory actions

The Company is involved in legal proceedings relating to claims involving a former director and officer of the Company. The claim was commenced in the Ontario Superior Court of Justice on September 26, 2018, by Aubrey Eveleigh and Eveleigh Geological Consulting. Mr. Eveleigh seeks damages in excess of \$5,000,000 in connection with an employment dispute. The Company is defending the claim and the proceedings remain ongoing, though the Company believes that the risk of significant loss in respect of the litigation is remote. The Company subsequently commenced a claim against Mr. Eveleigh and Eveleigh Geological Consulting on March 24, 2020, in the Ontario Superior Court of Justice (Commercial List), in connection with past breaches of Mr. Eveleigh's fiduciary duties. The Company is seeking, among other things, an order that Mr. Eveleigh disgorge any benefits obtained as a result of his misconduct, an order cancelling certain Company shares held by Mr. Eveleigh, and an order declaring that Mr. Eveleigh has no entitlement to any royalty payments or success fees in connection with the Albany Graphite Project. Mr. Eveleigh has defended the claim and the Company submits that it continues to defend the action and maintains that the allegations as set out in the claim are frivolous and without merit. To date, the pleadings have closed and the next step will be to begin the discovery process.

There were no penalties or sanctions imposed against the Company by a court relating to provincial and territorial securities legislation or by a securities regulatory authority during its most recently completed financial year, nor have there been any other penalties or sanctions imposed by a court or regulatory body against the Company, and the Company has not entered into any settlement agreements before a court relating to provincial and territorial securities legislation or with a securities regulatory authority.

On January 29, 2021, the Company was served with a statement claim issued by Graphene Composites Ltd. and is in the process of defending the action, which it considers frivolous and without merit. The Company has considered the allegations as set out in the claim and, in light of the facts, the lack of clarity in the claim, and, based on discussions with the Company's litigation counsel, the assessment of the merits of the claim and the defenses available to the Company, and the Company's conclusion is that the risk of the Company suffering loss in respect of the claim is remote, and therefore the Company determined the claim not to be material or constituting "significant litigation" pursuant to the policies of the TSX Venture Exchange. The Company continues to view this claim as frivolous and will continue to vigorously defend itself against these allegations

Proposed Transactions

As is typical of rapidly growing companies, the Company is continually reviewing partnerships, potential merger, acquisition, investment and joint venture transactions and opportunities that could enhance shareholder value. At present, there are no proposed asset or business acquisition, or disposition transactions being contemplated by management or the board that would affect the financial condition, financial performance and cash flows of the Company.

Employment Agreements

The Company has an employment agreement with its Chief Executive Officer. During the six-month period ended September 30, 2022, the salary level for the individual pursuant to the employment agreement is \$325,000 annually.

The Company has an employment agreement with its Executive Chairman. During the six-month period ended September 30, 2022, the salary level for the individual pursuant to the employment agreement is \$300,000 annually.

The Company has an employment agreement with its Chief Operating Officer. During the six-month period ended September 30, 2022, the salary level for the individual pursuant to the employment agreement is \$240,000 annually.

The Company has an employment agreement with its Chief Financial Officer. During the six-month period ended September 30, 2022, the salary level for the individual pursuant to the employment agreement is \$240,000 annually.

Contingent Liabilities

In September 2018, the Company received a statement of claim from a former employee. The Company is in the process of defending the claim but views the claim as unmeritorious. On March 24, 2020, the Company commenced an action claim against the former employee for relief relating to contracts and transactions between that employee and the Company, seeking to set aside those agreements and, where applicable, seeking disgorgement of unspecified amounts relating to benefits obtained under those agreements.

Significant Accounting Policies

A detailed summary of all of the Company's significant accounting policies is included in Note 2 to the March 31, 2022, audited annual consolidated financial statements.

Internal Controls over Financial Reporting

Management is responsible for the design of internal controls over financial reporting to provide reasonable assurance regarding the reliability of financial reporting and the preparation of the consolidated financial statements in accordance with accounting principles generally accepted in Canada. Based on regular reviews of its internal control procedures during and at the end of the period covered by this MD&A, management has determined that its internal controls and procedures are not effective in providing reasonable assurance that financial information is recorded, processed, summarized and reported in a timely manner due to the identification of material weaknesses in internal control.

Material weakness

A material weakness is a deficiency, or a combination of deficiencies, in internal control over financial reporting, such that there is a reasonable possibility that a material misstatement of our annual financial statements will not be prevented or detected on a timely basis. The material weaknesses that we identified in our internal controls over financial reporting as of September 30, 2022, were a result of rapid growth of the Company and were as follows:

Absence of effective activity-level controls over the purchase, ownership, shipment and recording of inventory.

Successful remediation will require the implementation of controls over the movement of purchased, held and sold inventory and the acquisition and adoption of an appropriate inventory software solution including training of production and accounting staff.

Lack of controls over the accurate recording of period revenue in accordance with International Financial Reporting Standards based on the underlying shipment terms and/or recognition criteria inherent in the contractual arrangements.

We have developed and commenced implementation of a remediation plan to address this weakness by strengthening our revenue recognition and financial reporting controls by adding new and additional resources with adequate technical knowledge and training, including the hiring of a new Chief Financial Officer in May 2022.

Specific remediation plans and actions that the Company intends to implement include the following:

- Modification of the Company's plant associate's job description to include procurement (Q2 2023);
- Plant associate to track all inventory including monthly reconciliation (Q2 2023);
- Controller (new hire intended to be engaged in or around Q3 2023) to assist both operations and finance teams in tracking inventory;
- Training of operations and finance departments on Fishbowl inventory management software (Q3 & Q4 2023); and
- Implementation of formal Purchase Order processes (Q3 2023).

Changes to Internal Control over Financial Reporting

There have been no significant changes to the Company's internal controls over financial reporting that occurred during the six-month period ended September 30, 2022, that have materially affected, or are reasonably likely to materially affect, the Company's internal control over financial reporting.

Disclosure Controls

Management is also responsible for the design and effectiveness of disclosure controls and procedures to provide reasonable assurance that material information related to the Company is made known to the Company's certifying officers. The Company's Chief Executive Officer and Chief Financial Officer have each evaluated the effectiveness of the Company's disclosure controls and procedures as of September 30, 2022, and have concluded that these

controls and procedures are effective in providing reasonable assurance that material information relating to the Company is made known to them by others within the Company.