

**FORM 51-102F3
MATERIAL CHANGE REPORT**

1. **Name and Address of Company**

Zentek Ltd. (formerly, ZEN Graphene Solutions Ltd.) (the “**Company**”)
210-1205 Amber Drive
Thunder Bay, ON P7B 6M4

2. **Date of Material Change**

December 23, 2021

3. **News Release**

A press release disclosing the material change was released on December 23, 2021, through the facilities of Newsfile Corp.

4. **Summary of Material Change**

On December 23, 2021, the Company filed amended and restated financial statements and MD&A as well as providing a year end update on certain of its key projects and initiatives at the request of Staff at the Ontario Securities Commission (the “**OSC**”), and amended the terms of its previously disclosed proposed financing.

5. **Full Description of Material Change**

On December 23, 2021, in connection with a review by Staff of the OSC, the Company announced the filing of amended and restated unaudited condensed consolidated interim financial statements (the “**Q2 2021 FS**”) and management’s discussion and analysis thereof (“**Q2 2021 MDA**”, together with the Q2 2021 FS, the “**Amended Statements**”), and provided updates on its business developments over the past year at the request of Staff at the OSC, including the development of its patent-pending anti-microbial ZENGuard™ compound, its licensing status with Health Canada, its commercial revenue-generating agreement with Trebor Rx Corp. (“**Trebor**”), the development of the Company’s planned production plant, and certain of its other previously disclosed initiatives.

2021 Highlights

- In September 2021, Health Canada authorization for the sale of ZENGuard™ coated masks was received under the Interim Order No. 2- 329587 (the “**Interim Order**”), which is eighteen months in duration.
- In September 2021, the Company entered into a binding definitive license and supply agreement with Trebor Rx Corp. for the supply of ZENGuard™ to coat face masks and potentially other health care products.
- In November 2021, the Company received a medical device establishment license (“**MDEL**”) from Health Canada, which permits it to manufacture, and distribute all class one medical devices in general (whether or not coated with the ZENGuard™ antimicrobial coating), even after the expiration of the authorization under the Interim Order.
- Development is underway of the Company’s industrial scale facility to produce ZENGuard™ and to coat materials.

Financing Status

Further to its press releases dated November 16, 2021, and November 24, 2021, the Company is continuing to work towards its previously disclosed proposed C\$30 million financing (the “Offerings”). In connection with a review by Staff of the Ontario Securities Commission the Company was asked to provide updates on its various previously disclosed initiatives, which are set out below.

Additionally, given the novel business of the Company and the Company’s change of classification on the TSX Venture Exchange in October 2021 from a “mining issuer” to an “industrial, technology, or life sciences issuer”, the Company performed an impairment analysis to determine the suitability of carrying the Albany Graphite Project on its balance sheet. Based on such analysis, the Company has determined that the Company’s previously filed Q2 2021 FS and Q2 2021 MD&A, as filed on November 29, 2021, need to be restated (as more fully described below).

The Company contemplates that the Offerings will be repriced at C\$5.20 per common share, and structured as (i) a bought deal prospectus offering of 3,847,000 common shares at C\$5.20 per common share for gross proceeds of approximately C\$20.0 million, through Eight Capital as lead underwriter and sole bookrunner on behalf of a syndicate of underwriters including Leede Jones Gable Inc. and Research Capital Corporation (collectively, the “**Underwriters**”). The Company has granted the Underwriters an option (the “**Over-Allotment Option**”) to purchase up to an additional 577,050 common shares on the same terms exercisable at any time up to 30 days following the closing of the prospectus offering, for market stabilization purposes and to cover over-allotments, if any; and (ii) a concurrent non-brokered private placement of up to 1,924,812 common shares at C\$5.20 to certain shareholders for aggregate gross proceeds of approximately \$10 million. The Underwriters have agreed to pay for their own legal counsel expenses in connection with the Offerings. The Company anticipates that the Offerings will be completed on or about December 31, 2021.

Amended and Restated Financial Statements

Management had intended to address the Albany Graphite Project on its balance sheet for its financial statements for the period ended December 31, 2021, the first period end following the Company’s change of business on the TSX Venture Exchange (see the Company’s press release dated October 14, 2021). However, based on the impairment analysis noted above, the Company’s Audit Committee, in consultation with management of the Company, has determined that the Company’s previously filed Q2 2021 FS and Q2 2021 MD&A, as filed on November 29, 2021, need to be restated in order to improve the Company’s disclosure and to clarify and provide additional disclosure regarding:

- the recoverable amount and carrying value of the Company’s exploration and evaluation assets, which was determined to be negligible, now that the Company has completed its change of business; and
- an immaterial dollar figure capitalized to the Company’s exploration and evaluation assets in the current fiscal year, which should have been recorded as a research and development expense in support of the Company’s intellectual property efforts.

The Amended Statements replace and supersede the previously filed Q2 2021 FS and Q2 2021 MD&A and are available under the Company’s profile on SEDAR at www.sedar.com.

The Company continues to own 100% of the unique Albany Graphite Deposit, and it remains an important asset as the Company works to develop a market for the raw materials produced from the Albany Graphite Project. As the potential for a robust graphene market grows, and the Company's demand for graphene and raw materials grows, the Company intends to re-evaluate when it may be appropriate to consider working towards putting the Albany Graphite Project into production. The Company intends to continue to consult closely with the community of Constance Lake First Nation with respect to the Albany Graphite Project.

ZENGuard™ Antimicrobial Compound

Further to its press releases dated April 30, 2020, and June 8, 2020, the Company announced that it had begun work on the development of a virucidal graphene-oxide-based compound (the "**Graphene Compound**") to be applied as a coating onto fabrics, which included personal protective equipment ("**PPE**") such as face masks in an effort to increase protection afforded by such products. Efficacy testing against SARS-CoV-2 virus was performed at the University of Western Ontario's ImPaKT Facility Biosafety Level 3 lab (the "**ImPaKT Facility**").

On September 22, 2020, the Company reported that after five months of optimization, it had developed a novel virucidal Graphene Compound with a 99% effectiveness against the COVID-19 virus, and had filed its first provisional patent relating to certain medical uses for this graphene-based virucidal product. Testing at the ImPaKT Facility indicated the Graphene Compound retained this 99% effectiveness for a minimum of thirty-five days after application to N95 mask material.

On December 22, 2020, the Company announced that testing results from the University Health Network/Mount Sinai Hospital Department of Microbiology in Toronto indicated that the Company's virucidal Graphene Compound may also be beneficial in the treatment of numerous human contracted pathogens, including upper and lower respiratory tract infections, where COVID-19 is a major contributor, as well as drug resistant organisms. The report delivered to the Company dated December 18, 2020 entitled "*Evaluation of Graphene Oxide with Silver Cations (GO-Ag+) as an Antibacterial Agent against Respiratory Pathogens*", stated that if the Graphene 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 disclosed that "Based on this breakthrough and an urgent need for such treatments, we will seek immediate collaborations with potential pharmaceutical partners to optimize the delivery mechanisms to target infections in general and especially those common in the respiratory tract." The Company engaged in initial discussions with a major pharmaceutical company and considered the requirements to bring a respiratory tract medication to market. Based on the timing and costs required to satisfy such requirements, while testing on the Graphene Compound for use in respiratory tract infections remains ongoing, the Company determined to focus instead on commercializing the ZENGuard™ coating in masks, including the development of an industrial scale production plant for deliveries under its agreement with Trebor (as discussed hereunder).

On December 29, 2020, the Company announced an update on cytotoxicity testing of the virucidal Graphene Compound and the effectiveness as a coating following testing completed at McMaster University's Centre for Microbial Chemical Biology and Mount Sinai Hospital. The preliminary testing confirmed the Graphene Compound's efficacy with fungi and bacteria in vitro at very low concentrations.

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. Testing continues with Nucro

Technics, and the Company anticipates that the next step in this process will be animal testing for various skin conditions. The Company is currently in the process of receiving quotes for animal studies of psoriasis and MRSA-related skin infections. Successful animal studies would support further work including Phase 1 human trials, which the Company estimates would likely occur later in 2022. The Company is currently receiving proposals for this testing and expects to make a decision by the end of January 2022 with respect to the Clinical Research Organization that it expects to work with for this next round of testing.

In a news release on April 13, 2021, the Company confirmed that safety testing results received from Nucro Technics indicated that the Graphene Compound did not lead to skin irritation or sensitivity as required in ISO 10993-10 for its level 1 medical device ie surgical masks. These results would be shared with Health Canada as part of their review process for obtaining the Interim Order authorizing the sale of ZENGuard™ coated masks in Canada.

On March 17, 2021, the Company announced that testing of the Company's Graphene Compound against four gram-positive and nine-gram negative bacteria with antimicrobial-resistance, including multidrug-resistant variants like methicillin-resistant staphylococcus aureus, had been completed. Testing demonstrated that the compound was 99.9% effective against bacteria, and fungi at very low concentrations. Testing was conducted by Dr. Tony Mazzulli, the Microbiologist-in-chief at Mount Sinai Hospital. To date the Company has not identified any fast-tracking routes or partners to collaborate with at this time, however testing in this respect remains ongoing with Dr. Mazzulli. On April 5, 2021 the Company reported that the Graphene Compound's Minimum Inhibitory Concentrations against bacteria, including multi-drug resistant versions, combined with its safety profile had resulted in the Company engaging in discussions with interested parties from the pharmaceutical industry. Further to this, the Company engaged in discussions with two pharmaceutical companies, however these discussions did not lead to any agreements and no further discussions are planned in this respect. The next step in this process is testing to prove efficacy in animal models.

In March 2021, the Company began the process of transitioning from bench-scale production to pilot scale production of the Graphene Compound. The Company provided production capacity estimates in its press release dated March 24, 2021, which were based on management's reasonable business judgment at such time. Those production capacity estimates were not met. The Company delayed its production schedule based on the directive issued by Health Canada, which restricted any graphene coated mask from entering the market until a full review had been conducted by Health Canada. Multiple pilot scale production capacity of the ZENGuard™ compound sufficient for up to thirty-two million masks per month was ready in July 2021, however the Company did not initiate production at such a capacity until October, 2021 after Health Canada authorization was obtained (as discussed below), and the Company has not yet achieved industrial scale capacity (as discussed below). Management has determined not to continue to provide production capacity estimates at this time, as it has identified significant variables including, without limitation, the timing of completion of its industrial scale plant (discussed below), and evolving production methods.

On April 13, 2021, the Company announced the Graphene Compound's new trade name, "ZENGuard™".

On May 3, 2021, the Company announced that it would begin ingestion good laboratory practice compliant safety studies of the ZENGuard™ compound following successful testing against Clostridium Difficile at the University of Manitoba under the supervision of Dr. George Zhanel, Professor, Department of Medical Microbiology and Infectious Disease and Director of the Canadian Antimicrobial Resistance Alliance. The ingestion good laboratory practice studies were not performed because the Company was advised by two separate clinical research organisations

that due to the broad spectrum of the Graphene Compound, it would have a negative impact on the natural gut biome.

On October 6, 2021, the Company announced the filing of an international patent application under the Patent Cooperation Treaty (“PCT”) for ZENGuard™, and the transfer from the University of Guelph of the rights, under its PCT application, for the electrochemical exfoliation process to produce graphene-oxide. 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 this technology, and it is being transferred from Guelph University to the Company’s facility for scale-up. During Q1 2022, the Company intends to investigate the potential to scale up the prototype from bench scale to pilot scale.

The Company continued to conduct testing on the 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 EnviroMicrobial Services Ltd. (“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%. There is no further testing to be conducted with GAP Labs in this respect at this time.

Health Canada Licensing Status

In collaboration with Trebor, a Canadian PPE manufacturer, an application was made to Health Canada for authorization for Trebor to market and sell surgical face masks coated with the Company’s patent-pending ZENGuard™ antimicrobial compound, under the Interim Order. On March 3, 2021, the Company announced that Trebor had reported that the ZENGuard™-coated masks had passed the Health Canada testing requirements as a level 1 medical device. The coated masks were tested at a Canadian ISO certified facility in line with American Society for Testing and Materials standards.

In April 2021, Health Canada issued an advisory related to masks containing graphene and recalled certain masks containing graphene. On April 5, 2021, the Company reported that it supported the Health Canada advisory and worked with Trebor to ensure that the ZENGuard™-coated products met the Health Canada standards and requirements.

On June 4, 2021, the Company and Trebor announced the results of certain inhalation safety testing for the ZENGuard™ enhanced surgical masks and the submission of these results to Health Canada. Testing was completed by a United States based company, where they confirmed that no ZENGuard™ graphene material was released from the surgical masks with air flow rates simulating resting and light activity inhalation rates. Health Canada did not approve the protocols used by the US company and Zentek started a new inhalation study with a Canadian company. On July 13, 2021, Health Canada announced that the sale of masks, which were recalled for containing graphene, could resume after conducting an assessment of the masks and finding no health risks.

On September 22, 2021, the Company announced that Health Canada authorization for the sale of ZENGuard™ coated masks had been received under the Interim Order, which is eighteen months in duration.

On November 29, 2021, the Company announced that it had received a medical device establishment license (“MDEL”) from Health Canada, which permits it to manufacture, and distribute all class one medical devices in general (whether or not coated with the ZENGuard™ antimicrobial coating). The MDEL will allow the Company to work with other manufacturers and

distributors around the world in addition to Trebor to bring surgical masks and, potentially, other PPE to the Canadian market, even after the Interim Order expires.

Trebor Partnership

In November 2020, the Company first announced the execution of a letter of intent with Trebor, a Canadian manufacturer of PPE with a production facility located in Collingwood, Ontario. The letter of intent set out the framework for an agreement between the parties pursuant to which Trebor would purchase quantities of the Company's ZENGuard™ coating, which would be applied to fabric used by Trebor to manufacture surgical masks, subject to the authorization by Health Canada. In January 2021, the Company also announced an agreement in principle for Trebor to use the ZENGuard™ coating on nitrile gloves, which is subject to authorization from Health Canada.

On March 3, 2021, the Company reported that Trebor intended to begin marketing the ZENGuard™ coated masks immediately with products to be available in April in anticipation of strong demand. Based on the Health Canada advisory from early April 2021 (discussed above) this timeline changed as masks with graphene had to undergo additional tests before being authorized for sale in the Canadian market.

On September 22, 2021, the Company announced that Health Canada authorization for the ZENGuard™-coated masks had been obtained, following which, the Company announced that it had entered into a binding definitive license and supply agreement (the "**License and Supply Agreement**") with Trebor. Pursuant to the terms of the License and Supply Agreement, the Company granted a non-exclusive and non-transferable license to Trebor to use the ZENGuard™ coating in certain specified Trebor products displaying the Company's branding, including surgical masks, mask filters, nitrile gloves, surgical gowns and scrubs and other healthcare products, and an exclusive license to sell and distribute ZENGuard™ coated elastomeric respirator mask filters, whether fixed or replaceable. This exclusive license is to remain in force only so long as Trebor sells a minimum of sixty million (60,000,000) filters per year with annual growth of at least 10%. Trebor agreed to use the ZENGuard™ coating on all of its products sold unless a Trebor purchaser specifically refuses to acquire the ZENGuard™-coated products. Trebor agreed to purchase the ZENGuard™ coating from the Company by way of cash payments for a supply based on demand for Trebor products. There is no minimum amount of ZENGuard™ coating required to be purchased by Trebor.

In September 2021, the Company announced that it had received revenue from its first shipment of the ZENGuard™ coating to Trebor. To date, Trebor has purchased, and the Company has delivered, quantities of ZENGuard™ coating sufficient for 10,000,000 masks.

ZENGuard™ Industrial Scale Production Plant

On November 12, 2020, the Company announced that it had signed a three-year lease, with an option for an additional three years, on 25,680 square feet of newly built B.1 industrial zoning space in Guelph, Ontario, to produce its ZENGuard™ antimicrobial compound. The Company conducted permitting requirement research in consultation with ERM Consultants Canada Ltd., which completed and delivered its permitting review report. On November 30, 2020, the Company announced the purchase of graphene oxide needed to produce the ZENGuard™ compound, which was delivered to the Company in December of 2020 and February 2021 for a total of just over 300 kg. Furthermore, the Company reported that it had negotiated terms to purchase additional GO commencing in January 2021. On November 11, 2021, the Company announced an agreement with the same supplier to secure the necessary supply of graphene oxide to produce enough ZENGuard™ to meet the Company's estimate of the anticipated demand for

the ZENGuard™ Graphene Compound in the short term, based in part on discussions with Trebor. Shipments began arriving on December 20, 2021 and are to continue through the first six months of 2022, with the supplier currently preparing the remainder of a shipment of 880 kg for delivery prior to the end of Q4 2021. The Company also expects that approximately 5,000 kg of graphene-oxide is scheduled to be delivered to the Company over the course of the first half of 2022, which is the next significant step in this process. This material was purchased to secure a plentiful supply of raw material for the ZENGuard™ coating and to prevent supply line disruptions.

On January 18, 2021, the Company announced the engagement of Bantrel Co. to design and source production equipment for the Company's ZENGuard™ production plant. The Company currently plans to construct industrial scale production equipment to produce the ZENGuard™ coating formulation at its York Rd. 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 be completed by the Company on-site. Detailed engineering of the proposed ZENGuard™ compound manufacturing equipment began in July 2021. The Company estimates that engineering (including design, procurement and construction assistance) of the production facility is approximately 80% complete and management of the Company expects that such engineering will be 100% complete by the end of the first calendar quarter of 2022. Procurement was initiated in September 2021 and the Company anticipates that all equipment will be on site by February 2022. Installation packages will be awarded by the Company in January 2022 and the Company anticipates assembly and installation of the industrial scale production equipment to be completed during Q1 2022, at which point production is expected to commence while commissioning, optimization and production ramp-up occurs over the following two to three months. At this point the Company would continue to use third parties to coat the ZENGuard™ Graphene Compound onto materials.

Industrial scale spray coating line equipment was researched, selected and ordered in October 2021 with an anticipated delivery in or around May 2022. Upon delivery of the industrial scale coating equipment, installation and commissioning of such equipment can commence, which the Company estimates will take between three and six months, at which point the Company expects to be able to coat materials with ZENGuard™ that the Company has produced on-site. The Company notes that there are potentially many variables involved with the final completion of the planned industrial scale production/coating plant, including the timing of the delivery of equipment from the United States, availability of installation service providers from the United States, potential restrictions on travel due to the COVID-19 pandemic, among others, and the Company is therefore currently unable to provide timing estimates with certainty.

Once this industrial process is in operation, the Company expects the production capacity of ZENGuard™ to increase significantly. The Company is currently assessing how it will increase market opportunities for the increased manufacturing capacity. Supply chain risks include the availability of nonwoven fabric for coating, the availability of shipping containers and port congestion. The Company is aware of the challenges of supply lines globally and is taking steps to minimize any such risk to its business by seeking out North American suppliers where possible.

Rapid Detection Technology

On June 17, 2021, the Company announced that it had signed an exclusive agreement with McMaster University to be the global commercializing partner for newly developed aptamer-based, SARS-CoV-2 rapid detection technology, developed by a team of researchers under the guidance of Drs. Yingfu Li, John Brennan and Leyla Soleymani, who are recognized as global

leaders in biosensing technologies, and their applications as point of care diagnostics. The Company continues to work with the McMaster University team to commercialize the COVID-19 test by improving the performance of aptamers, optimizing chip synthesis and by identifying and initiating other tests that can be incorporated into the pathogen detection platform.

In connection with the rapid detection technology, on November 4, 2021, the Company announced that it was selected as one of three technologies for Phase 1 of the Innovative Solutions Canada (“ISC”) Challenge to develop a portable detection device for SARS-CoV-2 in wastewater. The Company continues to make progress within the ISC challenge. It is expected that Phase 1 will conclude in February 2022. The Company has contracted with NeoVentures Biotechnology Inc. (“NeoVentures”), a well-known entity in the aptamer development and applications field. NeoVentures has been engaged to validate the McMaster University results against spike proteins and develop a mathematical model to better understand the technology and results. NeoVentures is also being asked to develop a standard operating procedure for the system, perform a pre-trial evaluation using saliva samples, and optimize buffers for sample preparation. The Company continues to work with NeoVentures, axiVEND, McMaster University and has recently engaged StarFish Product Engineering Inc. (“**StarFish Medical**”). StarFish Medical is to conduct a product strategy alignment, usability analysis, device and architecture development, proof of concept and prototyping, and program development.

The Company currently intends to continue to develop this technology, including the development of software and hardware, using outsourced third-party developers. In order to bring the product to market, the Company must also prepare a working prototype to conduct baseline studies and submit an application to Health Canada.

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 intends then to start putting together a product technical file, obtaining an ISO 13485 Certificate, which the Company currently expects by the end of Q2 2022, and then completing a Health Canada Class IV application.

Other Initiatives

On April 11, 2019, the Company and its research partners the Deutsches Zentrum für Luft- und Raumfahrt, The German Aerospace Center (“**DLR**”) and Kal Tire Ltd. (“**Kal Tire**”) reported preliminary battery development testing results at the University of British Columbia, Okanagan Campus, which was performed by Dr. Lukas Bichler. The initial results showed that the addition of the Company’s 5% reduced Graphene Oxide (“**rGO**”) into carbon black, which was derived from recycled Kal Tire tires, resulted in a 324% increase in the anode discharge capacity when compared to the current industry standard anode material. Subsequently, the Company and Kal Tire were unable to agree to the terms for an agreement and the collaboration was discontinued.

On September 16, 2019, the Company signed an agreement with Chemisar Laboratories Inc. (“**Chemisar**”) to provide various consulting services which included the use of 2,300 square feet of office and laboratory space in Guelph, Ontario commencing on October 1, 2019. This office is the Company’s graphene research and development centre located at 24 Corporate Court in Guelph, ON. Subsequently on October 9, 2020, the Company signed a 2-year extension with Chemisar for consulting services and the use of 4,300 square feet of office commencing on January 1, 2021. The additional 2000 square feet is currently used by the Company for the pilot-scale production of ZENGuard™ antimicrobial formulation. The Company is currently in

negotiations with the current owner of the property, and reasonably expects that an agreement of purchase and sale will be executed, with a target to close by early in 2022.

In November 2019, the Company reported on encouraging preliminary results from graphene-carbon aerogel battery development testing, which indicated that relatively low loadings of graphene-based material, combined with DLR's proprietary carbon aerogel structure, can result in an anode with a significant specific discharge capacity. These unoptimized results were believed to be better than those currently reported in the literature for graphene aerogel batteries. Graphene-enhanced aerogels could have the potential to be a low-cost, low-weight, high-performance composite materials for near future energy storage applications. Subsequently, on October 15, 2020, the Company and DLR signed a new research collaboration agreement to investigate the use of graphene-based nanomaterials in the fabrication of novel carbon aerogel composites for the development of hydrogel batteries. The Company was to contribute graphene and rGO for their part of the collaboration. However, with the outbreak of COVID-19, The Company's research and development initiatives focused on other priorities and, although this collaboration may continue in the future, there are no projected next steps at this time.

On July 9, 2020, the Issuer announced that Evercloak Inc. ("**Evercloak**") and the Company had been awarded \$125,000 each as part of a Next Generation Manufacturing Canada ("**NGen**") Project, for an aggregate amount of \$250,000. The project entitled "Advancing Large-Scale Graphene and Thin-Film Membrane Manufacturing" was to support the production of graphene oxide by the Company to supply to Evercloak for scale up and optimizing activities. Through this grant, and in collaboration with Evercloak, the Company was to optimize and scale-up the electrochemical exfoliation process that was developed by Prof. Aicheng Chen and his team at the University of Guelph to produce graphene oxide. On September 30, 2020, the Naval Material Technology Management section of the Royal Canadian Navy ("**RCN**") partnered with the Company and Evercloak as a testing organization and agreed to provide in-kind donations of test services. The testing was completed and compared the efficiency of an HVAC unit produced with the Evercloak dehumidification membrane technology to the incumbent HVAC system that is currently in use on certain of the RCN's frigates. Any additional testing with the RCN is currently on hold and no next steps are being considered, although Evercloak may test the suitability of the Company's GO products (chemical and electrochemical) in its dehumidification membrane technology.

On September 30, 2020, the Company first announced testing on graphene use for heating, ventilation, and air conditioning ("**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 also reported that it would immediately move to commercialize its coating in the HVAC industry, and it continues to work towards this goal. The Company determined to wait for government support in order to proceed with testing, which was 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 will be 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 will be 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. The Company expects testing to be complete by the end of Q1 2022. Phase 2 testing will be dependent on positive results from Phase 1.

On December 7, 2020, the Company announced that in partnership with Prof. Mohammad Arjmand and his team at the University of British Columbia Okanagan Campus, the Company was awarded a \$780,000 alliance grant (\$480,000 from the Natural Sciences and Engineering Research Council of Canada (“NSERC”) and \$300,000 from a combination of cash and in-kind contributions from the Company), awarded through a competitive peer review process. This proposal, titled “Synthesis of Graphene Nanomaterials and Development of Their Multifunctional Polymer Nanocomposites”, included work on conductive and magnetic 3D printable filaments, which have now been optimized and are being assessed for commercialization. Prof. Arjmand’s team has also been conducting research on graphene quantum dot synthesis for quality and reproducibility purposes. The research in this respect is ongoing and, with respect to next steps, Prof. Arjmand is to begin work in a new research and development facility, which the Company expects may accelerate progress on this initiative.

On June 1, 2021, the Company announced that it had developed a stable diesel fuel additive based on testing carried out on a Gunt single-cylinder test engine. The Company’s research and development team improved the synthesis of the functionalized graphene oxide additive to reduce the size of the particles and increase the functional groups, which could lead to improved combustion. An NSERC alliance proposal has been submitted 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.

On November 2, 2021, the Company announced the development of a new carbon-based nanotechnology-enhanced icephobic coating to prevent or reduce ice accretion for aviation (including drone) and wind energy applications. The Company also announced that an accompanying provisional patent for this technology had been filed with the United States Patent and Trademark Office. Preliminary testing demonstrated that this coating showed an adhesion strength consistently around 20 kPa. The project has involved using dispersion technology to homogeneously mix graphene materials in the elastomer. The Company has conducted testing in a third-party icing wind tunnel and prepared graphene-enhanced elastomer material and coated coupons for testing. Future testing includes accelerated weathering, durability (sand erosion), flight testing on a specially equipped research aircraft under real world ice-forming weather conditions, elastomer/graphene loading optimization, adhesion optimization, and coating application optimization. The Company continues its search efforts to find collaborators to commercialize this technology, including UAV companies and companies specializing in elastomer production. More recently, the Company has submitted samples to Micom Laboratories Inc. for UV accelerated aging per ASTM G-154 testing, which will take six weeks to complete. These samples will then be retested in the icing wind tunnel to determine if the aging has had any impact on the coating’s icephobic properties. The third-party that will be performing the in-flight ice accretion testing has confirmed to the Company that they anticipate performing a shakedown test flight with a probe coated with the Company’s icephobic elastomer before the end of the year or early in 2022.

The Company has also been awarded multiple Mitacs grants, including the following previously disclosed grants: (i) as disclosed by the Company in its press release dated November 11, 2021, Dr. Antony Thirupathi, PhD, was awarded a Mitacs Elevate Postdoctoral fellowship to conduct work on the chemical exfoliation of graphite into graphene oxide; (ii) as disclosed by the Company in its press release dated January 20, 2021, Dr. Deepak Sridhar, PhD, was awarded a Mitacs Elevate Postdoctoral fellowship to conduct work on the chemical exfoliation of graphite into graphene oxide; (iii) as disclosed by the Company in its press release dated September 3, 2020, Dr. Seyyedarash Haddadi was awarded a Mitacs Elevate Postdoctoral fellowship to conduct work on the chemical exfoliation of graphite into graphene oxide. The Company continues its

work with such individuals (including Dr. Sridhar who has joined the Company on a full-time basis) and assists with applications for grants as appropriate.

This press release shall not constitute an offer to sell or the solicitation of an offer to buy nor shall there be any sale of the securities in any jurisdiction in which such offer, solicitation or sale would be unlawful prior to registration or qualification under the securities laws of any such jurisdiction. This press release does not constitute an offer of securities for sale in the United States. The securities being offered have not been, nor will they be, registered under the United States Securities Act of 1933, as amended, and such securities may not be offered or sold within the United States absent registration under U.S. federal and state securities laws or an applicable exemption from such U.S. registration requirements.

6. **Reliance on subsection 7.1(2) of National Instrument 51-102**

The report is not being filed on a confidential basis.

7. **Omitted Information**

No significant facts have been omitted from this Material Change Report.

8. **Executive Officer**

For further information, contact Brian Bosse, Director and Chief Financial Officer of the Company at 1-844-730-9822 or bbosse@zentek.com.

9. **Date of Report**

This report is dated at Toronto, this 23rd day of December, 2021.

Cautionary Statement Regarding Forward-Looking Information

This news release contains certain forward-looking information and forward-looking statements, as defined in applicable securities laws (collectively referred to herein as “forward-looking statements”). Forward-looking statements reflect current expectations or beliefs regarding 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”, “targets” 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, including statements relating to the proposed Offerings including the completion and timing thereof, potential research, development or commercialization of new or existing products, the acquisition or completion of new facilities, obtaining permits, licenses or authorizations from regulatory bodies, collaborations or partnerships with third parties, production capacities, potential revenue generation, and the general future development of the Company’s business. All forward-looking statements, including those herein are qualified by this cautionary statement.

Although the Company believes that the expectations expressed in such statements are based on reasonable assumptions, such statements are not guarantees of future performance and actual results or developments may differ materially from those in the statements. There are certain factors that could cause actual results to differ materially from those in the forward-looking

information. These include without limitation, related to the following: no operating revenues and history of losses, no guarantee of success, intellectual property, lack of revenue from graphene sales, product development and technological change, market development and growth, unpredictable sales cycles, government regulation and import/export controls, industry competition, lack of trading market for graphene, shortages, need for additional funding, going concern, commodity markets, market fluctuation and commercial viability, operating hazards and risks, health, safety and community relations, environmental protection, pre-existing environmental liabilities, reliance on key personnel, liquidity risk, share price fluctuations, public health crises such as the COVID-19 pandemic, climate change, conflicts of interest, uninsurable risks, cybersecurity threats, and general economic, market or business conditions, as well as those risk factors set out in the Company's annual information form for the year ended March 31, 2021, and in the continuous disclosure documents filed by the Company on SEDAR at www.sedar.com. Readers are cautioned that the foregoing list of factors is not exhaustive of the factors that may affect forward-looking statements. Accordingly, readers should not place undue reliance on forward-looking statements. The forward-looking statements in this news release speak only as of the date of this news release or as of the date or dates specified in such statements.

Forward-looking statements are based on a number of assumptions which may prove to be incorrect, including, but not limited to, assumptions relating to: the availability of financing for the Company's operations; operating and capital costs; results of operations; production schedule and related costs; timing of the receipt of regulatory and governmental approvals for products; capital and operating costs; and general business and economic conditions.

Readers are cautioned that any such statements are not guarantees of future performance and actual results or developments may differ materially from those projected in the forward-looking statements. For more information on the Company, investors are encouraged to review the Company's public filings on SEDAR at www.sedar.com. The Company disclaims any intention or obligation to update or revise any forward- looking information, whether as a result of new information, future events or otherwise, other than as required by law.