

Form 51-102F3
Material Change Report

Item 1 Name and Address of Company

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

Item 2 Date of Material Change

February 4, 2021

Item 3 News Release

The news release was disseminated on February 4, 2021

Item 4 Summary of Material Change

Item 5 Full Description of Material Change

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

Neither subsection 7.1(2) nor (3) of National Instrument 51-102 is being relied upon.

Item 7 Omitted Information

No information has been omitted on the basis that it is confidential information.

Item 8 Executive Officer

Francis Dubé
Executive Chairman
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DATED: February 4, 2021

Schedule "A"

ZEN Graphene Solutions Announces Initial Phase 2 Cytotoxicity Results for Its Graphene-Based Compound

Guelph, ON – February 4, 2021, ZEN Graphene Solutions Ltd. ("ZEN" or the "Company") (TSX-V:ZEN and OTC:ZENYF) is pleased to announce very promising initial phase 2 results of the 7-day repeated dose safety testing from Nucro Technics for potential human pharmaceutical use of its graphene-based compound.

Dr. Francis Dubé, ZEN Executive Chairman, commented: "The company continues to make positive progress towards our patent-pending, biocidal compound being considered as a pharmaceutical agent. Health safety evaluation in preclinical models is the most important consideration at this stage – and with the high dose (1,000 mg/kg) in this study being 20,000 times higher than the Minimum Inhibitory Concentration from the Mount Sinai study – we are incredibly encouraged. We will continue to move this new potential therapeutic towards Phase 1 human trials as quickly as possible pending the final report from Nucro-Technics."

Initial Phase 2 Test Results Summary and Next Steps

In this repeated dose study, groups of three males and three females were dosed with either 50 mg/kg, 250 mg/kg, or 1,000 mg/kg of ZEN's patent-pending biocidal compound once per day for seven days.

ZEN's patent-pending biocidal compound was administered orally close to the throat area of the rats daily for 7 days at dose levels of 50 mg/kg, 250 mg/kg, or 1,000 mg/kg. Based on the clinical observations, food consumption, body weights, blood clinical pathology and post-mortem examination, there were no test article related findings of concern in any of the dose levels evaluated in this study. Tissues from the main organs are now being prepared for histopathology examination and these results will be included with the final report.

Pending final histopathology results, we are preparing to initiate a pivotal 14-day repeated dose toxicity safety study that will be conducted at Nucro-Technics Laboratories in accordance with Good Laboratory Practice regulation to support Phase 1 human clinical trials.

About ZEN Graphene Solutions Ltd.

ZEN is a next gen nanomaterials company developing graphene-based technology that helps protect people, the environment and makes existing products better. ZEN is currently focused on commercializing a patent pending graphene-based coating with 99% biocidal activity, including against COVID-19 and the potential to use this graphene compound as a

pharmaceutical product against infectious disease. The company has a significant R&D pipeline with interest in polymers, monomers, metal alloys, corrosion coatings, biosensors along with graphene oxide and quantum dots production. The company additionally owns the unique Albany Graphite Project which provides the company with a potential competitive advantage in the graphene market. Labs in Japan, UK, Israel, USA, and Canada have independently demonstrated that ZEN's Albany Pure™ Graphite is an ideal precursor material that easily converts (exfoliates) to graphene, using a variety of mechanical, chemical, and electrochemical methods.

For further information:

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To find out more about ZEN Graphene Solutions Ltd., please visit our website at www.ZENGraphene.com. A copy of this news release and all material documents in respect of the Company may be obtained on ZEN's SEDAR profile at www.sedar.ca.

Forward-Looking Statements

This news release contains forward-looking statements. Since forward-looking statements address future events and conditions, by their very nature they involve inherent risks and uncertainties. Although ZEN believes that the assumptions and factors used in preparing the forward-looking information in this news release are reasonable, undue reliance should not be placed on such information, which only applies as of the date of this news release, and no assurance can be given that such events will occur in the disclosed time frames or at all. ZEN 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. Neither the TSX Venture Exchange nor its Regulation Services Provider (as that term is defined in the policies of the TSX Venture Exchange) accepts responsibility for the adequacy or accuracy of this release.