



Zentek Subsidiary Albany Graphite Corp. Achieves Near-Theoretical Anode Performance in Battery Suitability Independent Testing

Guelph, ON – December 17, 2025 – Zentek Ltd. (“Zentek” or the “Company”) (Nasdaq: ZTEK; TSXV: ZEN) announces that its wholly owned subsidiary, Albany Graphite Corp. (“**AGC**”), has achieved near theoretical anode performance in independent lithium-ion battery testing using ultrahigh purity Albany graphite. In four-industry standard coin cell tests, carbon coated, spheroidized Albany graphite delivered an average reversible capacity of approximately 367 mAh/g – just 1.3% below the theoretical maximum for graphite – with strong cycling stability and efficient processing. These results indicate that Albany graphite has the potential to serve as a high-performance, natural graphite anode material for lithium-ion batteries, supporting Zentek’s strategy to build a value-added position in the North American battery supply chain.

RESULTS

Near theoretical anode performance: Albany graphite achieved an average reversible capacity 367.35 mAh/g in lithium-ion coin cell tests, within approximately 1.3% of the theoretical maximum for natural graphite (372 mAh/g). This indicates that Albany graphite can deliver energy storage very close to the expected maximum for graphite anodes, making it a strong candidate for high-performance lithium-ion battery applications and supporting longer runtime for end users.

Stable cycling, reliability and reproducibility: The material showed very stable performance over approximately 110 cycles as a conductive additive and 110–120 cycles as the main anode active material, with no cell failures and irreversible capacity loss between approximately 7.0% and 8.3%. Average capacity retention was above 94% versus the Li/Li⁺ counter electrode, indicating that Albany graphite can withstand repeated charging with limited degradation, an important requirement for commercial battery production.

Efficient use of spheroidization byproduct: High purity spheroidization process “rejects” were successfully blended 50/50 with NMC622 cathode active material as a conductive additive, delivering performance comparable to industry benchmarks while enabling nearly full utilization of graphite processed through the spheroidization process. Using this byproduct improves material yield and supports more cost-efficient and sustainable production of battery grade graphite.

Industry standard testing conditions: All tests were conducted at a C/10 charge/discharge rate and at electrode loadings near 10 mg/cm², which are commonly



used in evaluating graphite anode materials. Running at these conditions helps ensure that the results are relevant to commercial cell designs and provides partners and investors with a realistic indication of how Albany graphite may perform when scaled up.

Overall Significance for Battery Applications

Competitive Advantage: Near-theoretical performance could position Albany graphite as a leading choice for high-performance, natural graphite in North America, offering battery makers greater energy density and anode product reliability. Preliminary coin cell cycling tests suggest that the performance of unoptimized Albany anode material could potentially deliver the benefits of the long-term stability of synthetic graphite, while maintaining the near-theoretical capacity available from a natural graphite.

Market Relevance: Testing under simulated real-world conditions means the data could reflect what can be expected in commercial cell production, providing confidence for partners and investors.

Process Efficiency: Maximizing yield and minimizing waste through the use of shaping process byproduct enhances economic value and sustainability, key factors for large-scale battery supply chains.

Mohammed (Moe) Jiwan, CEO of Zentek, added, “We are extremely pleased with these independent results. Achieving near-theoretical performance under industry-standard conditions is a testament to the quality of the Albany material. These results strengthen our value proposition for battery manufacturers seeking high-performance, sustainable graphite solutions.”

Mr. Peter Wood, P.Eng., P.Geo., Vice President, Development of AGC, a “Qualified Person” under NI 43-101, has approved the technical information contained in this news release.

About the Albany Graphite Project

The Albany Graphite Project, is a unique igneous-hosted, fluid-derived graphite deposit, located in Ontario and has been developed to an advanced exploration stage. The project is located northwest of the communities of Constance Lake First Nation and Hearst, Ontario, within 30 km of the Trans-Canada Highway, close to established infrastructure including roads, rail, power transmission lines, and a natural gas pipeline.

About Zentek Ltd.

Zentek is an ISO 13485:2016 certified intellectual property technology company focused on the research, development and commercialization of novel products seeking to give the Company's commercial partners a competitive advantage by making their products better, safer, and greener.



Zentek's patented technology platform ZenGUARD™ is shown to have enhanced viral filtration efficiency for surgical masks and HVAC (heating, ventilation, and air conditioning) systems. Zentek's ZenGUARD™ production facility is in Guelph, Ontario.

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To find out more about Zentek, please visit our website at www.Zentek.com. A copy of this news release and all material documents in respect of the Company may be obtained on Zentek's SEDAR+ profile at <http://www.sedarplus.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 and other factors that could cause actual events or results to differ materially from those projected in the forward-looking statements. Such risks and uncertainties include, but are not limited to, operational risks in exploration development and production; delays or changes in plans with respect to exploration or development projects or capital expenditures; the uncertainties involved in the discovery and delineation of mineral deposits, resources or reserves; the uncertainty of resource and reserve estimates and the ability to economically exploit resources and reserves; the uncertainty of estimates and projections in relation to production, costs and expenses; the uncertainty surrounding the ability of the Company to obtain all permits, consents or authorizations required for its operations and activities; and health and safety and environmental risks. Although Zentek 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. Zentek 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.



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