



## **Green Shift Provides Metallurgical Update for the Berlin Deposit with High Recoveries through Membrane Technology**

Toronto, Ontario – November 09, 2022 – **Green Shift Commodities Ltd. (TSXV: GCOM)**, (“**Green Shift**” or the “**Company**”) is pleased to announce the results of further test work that show membrane technology being utilized for testing at the Company’s Berlin Deposit to be highly efficient in separating uranium, battery commodities and rare earth elements found in the Company’s Berlin Deposit (“**Berlin**”). Prior test work showed that not only could membranes significantly reduce the size of the processing plant but could simplify the recovery of phosphoric acid in comparison to the design modelled in the previous economic assessment of the Project completed in 2013. The current reported results are from tests undertaken during the second phase of a three-phase testing program, completed earlier this year.

### **Highlights**

- The test work was successful in achieving uranium, nickel, vanadium and rare earth element recoveries of over 95%.
- Phosphoric acid recovery is comparatively lower and other membranes will be tested to improve its recovery.
- The greater efficiency of membranes in separating rare earth elements could significantly increase the potential of the Berlin Deposit.

Trumbull Fisher, Director, and CEO commented, “We are very pleased and encouraged by the improved recoveries achieved by membranes in recovering the green energy metals during metallurgical testing on our Berlin asset. This asset contains commodities that are critical to the global green movement as we drive towards cleaner sources of energy and energy storage. In addition, we continue to seek other battery metal assets that would compliment Berlin’s core commodities and be accretive to our Company’s vision of becoming a go-to source of clean energy commodities.”

### **Membrane Efficiency**

Test work completed to date demonstrates that membrane separation is a highly efficient process at concentrating uranium, nickel, vanadium, rare earth elements, molybdenum and zinc from a liquid that was synthesized to match the pregnant leach solution (“PLS”) – the liquid generated from leaching the mineralized rock - from the Berlin Deposit. The results show that metals are effectively separated from the PLS. While phosphoric acid recovery is not as good with the selected membranes, further work will consider options to improve this – aiming for a target range of 80% to 90% recovery.

**Table 1. Results of membrane test work showing the efficiency of metals and phosphate recovery from a pregnant liquor solution that simulated a PLS from the Berlin Deposit.**

Commodity	Percentage Recovery	
	Option A	Option B
Uranium	97.1	99.7
Nickel	97.5	99.9
Vanadium	97.0	99.9
Phosphoric acid	79.3	63.6
Rare Earth Elements	98.5	99.7
Molybdenum	86.5	97.6
Zinc	96.6	99.9
Flow Rate Reduction (%)	90.2	81.2

### Next Steps

- In response to the rapid adoption of lithium ferro-phosphate (“LFP”) as safe, reliable batteries by the electric vehicle industry, it is a priority for the Company to assess the potential costs/benefits of producing ferro-phosphate from Berlin. It will be assessed as to whether the phosphate from Berlin can be combined with iron to form ferro-phosphate for LFP batteries, rather than simply producing phosphoric acid as was originally contemplated.
- The rapid advances in sensor-based sorting technology requires that this be tested on mineralized material from Berlin. This technology uses scanners to detect physical and or chemical characteristics of mineral-bearing components of the crushed rock as it emerges from the mine and uses a jet of compressed air to remove the mineralized fragments from waste fragments. If this technology works on mineralized material from Berlin, it could significantly enhance the efficiency, and could potentially lower operating costs, of a future processing plant.
- Further work is planned to strive to improve the recovery of phosphoric acid from the 63%-70% achieved so far to a target range of 80% to 90%.

### Qualified Person

The information related to membrane systems in this news release has been verified and approved by Johann van der Westhuysen, MEng, BEng, Managing Director of Synexus (Pty) Ltd, a process engineering services company that specializes in membrane separation applications in hydrometallurgy. Mr. Van der Westhuysen is registered as a Professional Engineer (PrEng) (Chemical) with the Engineering Council of South Africa and as a Chartered Chemical Engineer (CEng) with the Institution of Chemical Engineers, Engineering Council of the United Kingdom. Through this designation, Mr. Van der Westhuysen is a Qualified Person (“QP”) as defined by National Instrument 43-101, Standards of Disclosure for Mineral Projects of the Canadian Securities Administrators. The synthetic PLS was prepared by, and the membrane test work conducted under the direct control of, the QP. All test samples were submitted under chain-of-custody for analyses at an accredited laboratory, and all analytical results were received directly by the QP. The data analysis and the opinions expressed on the data are those of the QP.

For further information on the Berlin deposit, refer to the technical report entitled “Technical Report on the Berlin Uranium – Battery Commodity Deposit, Colombia” dated April 25, 2022, which is available under the Company’s profile on SEDAR at [www.sedar.com](http://www.sedar.com).

### About Green Shift Commodities Ltd.

Green Shift Commodities Ltd. is focused on the exploration and development of commodities needed to help decarbonize and meet net-zero goals.

The Company is developing the Berlin Deposit in Colombia. Apart from uranium, for clean nuclear energy, the Berlin Deposit contains battery commodities including nickel, phosphate, and vanadium. Phosphate is a key component of lithium-ion ferro-phosphate (“LFP”) batteries that are being used by a growing list of electric vehicle manufacturers. Nickel is a component of various lithium-ion batteries, while vanadium is the element used in vanadium redox flow batteries. Neodymium, one of the rare earth elements contained within the Berlin Deposit, is a key component of powerful magnets that are used to increase the efficiency of electric motors and in generators in wind turbines.

**For further information, please contact:**

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**Forward-Looking Statements**

*This news release includes certain “forward looking statements”. Forward-looking statements consist of statements that are not purely historical, including statements regarding beliefs, plans, expectations or intentions for the future, and include, but not limited to, statements with respect to: the potential metallurgical recoveries and results of the test work; the potential for improving the recovery of phosphate; the successful reactivation of the Berlin Project; the future direction of the Company’s strategy; and other activities, events or developments that are expected, anticipated or may occur in the future. These statements are based on assumptions, including that: (i) the ability to achieve positive outcomes from test work; (ii) actual results of our exploration, resource goals, metallurgical testing, economic studies and development activities will continue to be positive and proceed as planned, (iii) requisite regulatory and governmental approvals will be received on a timely basis on terms acceptable to Green Shift Commodities Ltd. (iv) economic, political and industry market conditions will be favourable, and (v) financial markets and the market for uranium, battery commodities and rare earth elements will continue to strengthen. Such statements are subject to risks and uncertainties that may cause actual results, performance or developments to differ materially from those contained in such statements, including, but not limited to: (1) changes in general economic and financial market conditions, (2) changes in demand and prices for minerals, (3) the Company’s ability to source commercially viable reactivation transactions and / or establish appropriate joint venture partnerships, (4) litigation, regulatory, and legislative developments, dependence on regulatory approvals, and changes in environmental compliance requirements, community support and the political and economic climate, (5) the inherent uncertainties and speculative nature associated with exploration results, resource estimates, potential resource growth, future metallurgical test results, changes in project parameters as plans evolve, (6) competitive developments, (7) availability of future financing, (8) the effects of COVID-19 on the business of the Company, including, without limitation, effects of COVID-19 on capital markets, commodity prices, labour regulations, supply chain disruptions and domestic and international travel restrictions, (9) exploration risks, and other factors beyond the control of Green Shift Commodities Ltd. including those factors set out in the “Risk Factors” in our Management Discussion and Analysis dated May 2, 2022 for the fiscal year ended December 31, 2021 available on SEDAR at [www.sedar.com](http://www.sedar.com). Readers are cautioned that the assumptions used in the preparation of such information, although considered reasonable at the time of preparation, may prove to be imprecise and, as such, undue reliance should not be placed on forward-looking statements. Green Shift Commodities Ltd. assumes no obligation to update such information, except as may be required by law.*

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