



**UCORE RARE METALS INC.**

**MANAGEMENT'S DISCUSSION AND ANALYSIS  
FOR THE PERIOD ENDED JUNE 30, 2022**

*This Management's Discussion and Analysis of Ucore Rare Metals Inc. ("Ucore" or the "Company"), prepared as of August 29, 2022, provides analysis of the Company's financial results for the period ended June 30, 2022. The following information should be read in conjunction with the condensed interim consolidated financial statements and notes thereto for the fiscal quarter ended June 30, 2022 which are prepared in accordance with International Financial Reporting Standards. All amounts are expressed in Canadian dollars unless otherwise noted.*

## **Forward Looking Statements**

*This discussion and analysis includes certain statements that may be deemed "forward-looking statements". All statements in this document (other than statements of historical facts) that address future business development and/or acquisition activities (including any related required financings), timelines, events or developments that the Company expects, are forward looking statements. Although the Company believes the expectations expressed in such forward-looking statements are based on reasonable assumptions, such statements are not guarantees of future performance or results and actual results or developments may differ materially from those in forward-looking statements. In regard to Ucore's plans and objectives, the Company has assumed that its subsidiary, Innovation Metals Corp. ("IMC"), will be able to develop its RapidSX™ technology and demonstrate its commercial viability to a number of customers who will license the technology from IMC for a fee. The Company also assumes that the Company will be able to procure or retain additional partners and/or suppliers, in addition to IMC, as suppliers for Ucore's expected future Alaska-based Strategic Metals Complex ("Alaska SMC") and the Company's other planned Strategic Metals Complex ("SMC No. 1"). Ucore has also assumed that sufficient external funding will be found to: (i) fund IMC's continued development of RapidSX™; (ii) fund the continued development of specific engineering and other required plans for the Company's prospective Alaska SMC and SMC No. 1; and (iii) fund the work necessary for the creation of a new National Instrument 43-101 technical report that demonstrates that the Company's Bokan Project is feasible and economically viable for the production of both REE and co-product mineral materials and metals and the then prevailing market prices based upon assumed customer off-take agreements. Ucore has also assumed that sufficient external funding will be found to provide sufficient continuing working capital for the Company and, if required, repay any outstanding debt that is owed by the Company when it becomes due. Factors that could cause actual results to differ materially from those in forward-looking statements include, without limitation: the Company failing to raise and maintain sufficient funds to pursue its objectives and continue as a going concern; RapidSX™ failing to demonstrate commercial viability in large commercial-scale applications; IMC failing to protect its intellectual property rights in RapidSX™; Ucore not being able to procure additional key partners or suppliers for the Alaska SMC or SMC No. 1; Ucore not being able to raise sufficient funds to fund the specific design and construction of the Alaska SMC or SMC No. 1; adverse capital-market conditions; unexpected due diligence findings; the emergence of alternative superior metallurgy and metal-separation technologies; the inability of Ucore and/or IMC to retain its key staff members; a change in the legislation in Alaska and/or in the support expressed by AIDEA regarding the development of Bokan and/or the Alaska SMC; the availability and procurement of any required interim and/or long-term financing that may be required; and general economic, market or business conditions. For additional information, see "Risks and Uncertainties" herein.*

## Overview

Ucore Rare Metals Inc. ("Ucore" or the "Company") is a company focused on rare and critical metals resources, extraction and beneficiation technologies with near term potential for production, growth, and scalability. The Company has an effective 100% ownership stake in the Bokan-Dotson Ridge Rare Earth Project. On March 31, 2014, Ucore announced the unanimous support of the Alaska State Legislature for Senate Bill 99 (2014), which authorized the Alaska Industrial Development and Export Authority ("AIDEA") to issue up to USD\$145 million in bonds for the infrastructure and construction costs of the Bokan-Dotson Ridge Rare Earth Project. This financing by AIDEA is conditional upon, among other things, the Company delivering a positive definitive feasibility study for the Bokan-Dotson Ridge Rare Earth Project (the "Bokan Project").<sup>1</sup>

Ucore's vision and plan is to become vertically integrated and become a leading advanced technology company that provides mineral separation products and services to the mining and mineral extraction industry. This vision includes the eventual development of the Company's future prospective Alaska Strategic Metals Complex ("Alaska SMC") in Southeast Alaska and then the eventual development of the Company's rare earth minerals property located at Bokan Mountain in Alaska (an NI-43-101 technical report was filed on SEDAR on March 14, 2013).<sup>2</sup>

On May 8, 2020, the Company acquired Innovation Metals Corp. ("IMC"), a private company focused on the research and development of technologies including IMC's proprietary RapidSX™ process for the low-cost separation and purification of rare earth elements ("REEs"), nickel ("Ni"), cobalt ("Co"), lithium ("Li") and other technology metals, via an accelerated form of solvent extraction. IMC is commercializing this approach for a number of metals, to help enable mining and metal-recycling companies to compete in today's global marketplace. Unlike Ucore's other subsidiaries, until May 2022, IMC was operated as a separate and distinct business entity from Ucore. In May 2022, IMC's operations became integrated with Ucore's operations consistent with the other subsidiaries of the Company. A diagram of Ucore's corporate organization structure is found at Appendix "A" of this MD&A.

In the short term, the Company is focussed on supporting IMC's continuing development and commercialization of RapidSX™ for the low-cost separation and purification of REEs. The upcoming expected completion of IMC's RapidSX™ commercial demonstration plant and the related testing of RapidSX™ with a variety of prospective customers' feedstocks are the prerequisite activities to be completed prior to: (i) IMC's licensing the use of its RapidSX™ process to any of IMC's feedstock customers for their commercially operated REE-processing facilities; (ii) the prospective physical creation of the Company's future Alaska Strategic Metals Complex ("SMC"); and (iii) the creation of any definitive feasibility study related to the Bokan Project.

## IMC & RapidSX™

IMC is the Company's wholly owned Canadian subsidiary company that has developed RapidSX™ technology for the separation and purification of critical metals including rare earth elements ("REEs"), lithium, nickel and cobalt. RapidSX™ is an accelerated solvent-extraction-based separation technology, developed and successfully piloted by IMC through 2016. Amongst other test work, RapidSX™ has proven effective at the pilot scale in separating both heavy REE ("HREE") and light REE ("LREE") chemical concentrate feedstocks to commercially-pure individual REEs with much higher process efficiency relative to conventional solvent extraction ("SX") technology. The Company and IMC have commenced a commercial development and demonstration program ("Program") for the processing of mixed-rare earth oxide ("REOs") and carbonate chemical concentrates into separated REOs utilizing IMC's RapidSX™ REE separation technology.

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<sup>1</sup> See section below entitled "Background Info. - The difference between a Preliminary Economic Assessment (PEA), a Prefeasibility Study (PFS) and a Feasibility Study (FS)".

<sup>2</sup> See the Company's Preliminary Economic Assessment (PEA) that was filed on SEDAR on March 14, 2013 as a technical report in compliance with National Instrument 43-101 *Standards of Disclosure for Mineral Projects* ("NI 43-101").

The Program is assessing efficiencies and yield potentials for targeted rare earth elements and will include a commercial-scale techno-economic analysis of the separation and purification process, including capital and operating costs. Based on IMC's prior bench- and pilot-scale test programs and subject to the specific results of the Program, the RapidSX™ rare earth element separation technology (utilizing the same chemistry as SX technology) offers a more environmentally friendly and efficient technological pathway for utilization in the Company's planned Strategic Metals Complexes ("SMCs"). Concurrently with the Program (and with a slight lag), the Company is incorporating the RapidSX™ technology platform into the specific engineering and design package for its first full commercial scale SMC No. 1. Ultimately, the Company expects to incorporate the RapidSX™ technology platform into the Bokan Project Pre-Feasibility Study ("PFS") and/or Feasibility Study ("FS") contemplated for after completion of SMC No. 1.

On July 12, 2022, the Company provided an update of IMC's RapidSX™ technology development for near-term commercial heavy and light rare earth element separation in the United States. An updated summary of the RapidSX™ REE development program is provided below:

The RapidSX™ commercialization program, currently under way, is now, as of the date of this MD&A, being led by Ucore's CEO and Chairman, Pat Ryan, P.Eng., and Ucore's Vice-President and Chief Operating Officer, Mike Schrider, P.E., in conjunction with Dr. Boyd Davis and Mr. Alain Roy, principals of Kingston Process Metallurgy Inc. ("KPM"), supported by additional technical expertise that Ucore/IMC has engaged for the program. As announced on June 23, 2020, KPM is IMC's laboratory partner and will be supporting all aspects of IMC's technical work to commence the optimization and commercialization program to scale up the RapidSX™ technology for commercial deployment into the SMCs.

As announced on October 1, 2020, the Company completed its acquisition of IMC and a significant amount of work has since been undertaken to advance the RapidSX™ technology, including:

- Engaging KPM as IMC's long-term laboratory partner;
- Initiating the RapidSX™ technical-validation and optimization program;
- Relocating the entirety of IMC's laboratory and all RapidSX™ equipment to IMC's RapidSX™ commercialization and development facility ("CDF"), including IMC's existing pilot-scale RapidSX™ circuit;
- Numerous continuing meetings with multiple potential RapidSX™ REE end-users and REE business partners;
- Providing continuing REE expert advisory services to a leading United States department of defence contractor in support of its U.S. REE business initiatives;
- Working directly with J.A. Green & Company to support the Company's and IMC's proposals to the U.S. federal government (Ucore's efforts in Washington, D.C., are spearheaded by government-relations firm J.A. Green & Company, led by well-known strategic-materials advocate Jeff Green);
- Working directly with the Canadian government regarding advancing various initiatives under way with the Canadian federal government;
- Advancing multiple Company and IMC U.S.-based REE supply-chain business-development proposals with multiple potential partners concurrently.

The RapidSX™ project team continues to be focused on a comprehensive technical program to finalize the design, engineering and construction of the RapidSX™ commercial demonstration-scale plant ("Demo Plant") at the CDF for both HREE and LREE separation. Subject to the Company's July 12, 2022, announcement of enhancing the Demo Plant from 18 to 51-stages and ongoing supply chain delays, the Demo Plant is expected to commence

commissioning in Q4-2022, followed immediately by the comprehensive, independent techno-economic analysis and the RapidSX™ portion of the design of the SMC commercial-scale REE separation facilities. The program is taking a systems-engineering approach -- focused on platform engineering (hardware), applications engineering (separation chemistry), and computational process simulation -- and will be completed in two phases, which are:

Phase 1) Laboratory-scale program (ongoing and underway since H2-2020)

- Quantitative characterization and design optimization of physical RapidSX™ hardware, independent of the chemistry of the separation applications that will utilize the technology, using a new multicolumn RapidSX™ research platform built for this specific purpose;
- Use of the new research platform to quantitatively characterize process kinetics, equilibrium isotherms and other parameters for various REE feedstocks;
- Development, utilization and optimization of a state-of-the-art process simulation tool, combining empirical results from the research platform, with the thermodynamic and other mathematical equations required to effectively model applications using the RapidSX™ technology. (The optimized, tool gives IMC the ability to rapidly test and to simulate large numbers of different test conditions, to determine the optimum flowsheet parameters and equipment configurations for particular REE and other feeds, at various scales.)

Phase 2) Demonstration-scale program (ongoing and underway since H2-2021)

- Finalization of the Demo Plant design and configuration, based on the results of the laboratory-scale development program;
- Construction and commissioning of the Demo Plant at the CDF;
- Testing and prolonged demonstrations of separation flowsheets for specific REE feedstocks (including prospective feedstocks for the SMCs) using the Demo Plant, to produce commercial evaluation and qualification samples for partners, and potential REE end-users.

The objectives of the current RapidSX™ development program include:

1. Validation of previous RapidSX™ REE technical work;
2. Optimization and validation of the physical design of the RapidSX™ platform at commercial demonstration scale;
3. Validation of the specific process flowsheets developed for particular REEs, including multiple U.S.-allied-sourced commercial REE feedstocks currently under consideration;
4. Initial generation of REO qualification samples for potential customers for evaluation;
5. Creation of inputs required for the design of commercial-scale RapidSX™ HREE and LREE separation facilities;
6. Formation of a detailed techno-economic evaluation of RapidSX™-based separation, as part of the commercialization process.

On April 27, 2022, the Company provided an update on the positive conclusions of a multiphase, independent, third party technical review of RapidSX™ technology prepared by Dr. Ahmad Ghahreman of AG Hydrometallurgy Services Inc. ("AGHS") as a noted subject matter expert. With a focus on the technical assuredness, benefits and

scalability of the RapidSX™ technology specifically for the separation of REEs for the production of commercial-grade rare earth oxides (“REOs”), the independent evaluation concluded the following:

- RapidSX™ is capable of separating both light and heavy REEs for producing high-quality REOs and uses the same chemistry as proven conventional solvent extraction (“CSX”) processes but with faster kinetics; thus, no chemistry risk at scale-up.
- The RapidSX™ process shows itself to likely be three times as efficient as CSX, concluding a production plant can potentially have a two-thirds smaller footprint than a CSX plant of the same capacity with an associated separation process capital cost (capex) reduction of 50 per cent or better.
- RapidSX™ for the separation and purification of REEs is dependent on its chemistry (same as CSX) and, given a smaller footprint for the same throughput, should have an expected operating cost (opex) of 20 per cent less than CSX for the same purpose.
- RapidSX™ is a modular process, making it scalable with minimal risk. The process can be designed to process REEs in the range of 1,000 to 10,000-plus tonnes per annum.

AGHS was engaged by AIDEA to undertake a technical review of the RapidSX™ technology and to provide an opinion concerning the technical and economic feasibility and scalability of RapidSX™, specifically for the separation of REEs for the production of commercial-grade REOs in the Company’s planned Alaska SMC. *“After completing our extensive technical review of the RapidSX™ technology, its commercialization development process and its planned installation in the Alaska SMC, it is my opinion that Ucore can credibly and effectively execute its unique business strategy,”* noted Dr. Ghahreman.

On July 12, 2022, the Company provided an update on its RapidSX™ demonstration-scale plant within the CDF. Up through Q1 2022, the Company had planned, designed and ordered equipment to construct an 18-stage RapidSX™ REE demo plant with subsequently planned incremental expansions to meet the broader commercial objectives of the program throughout 2022 and 2023. However, in early 2022, the Company received very positive results from the independent RapidSX™ technology evaluation, including the conclusion that a RapidSX™ production plant can potentially have two-thirds a smaller footprint than a conventional solvent extraction (SX) with the same throughput. The Company then met with and received the buy-in from all program stakeholders to expand the design and construction of the demo plant to 51 stages for the noted benefits described below. This enhanced capability allows the Company the opportunity to achieve its broader objectives in 2022, thus readying the company for commercial RapidSX™ technology deployment on a faster track.

As such, the Company continues its engagement with Mech-Chem Associates, Inc. (“Mech-Chem”) to develop the specific engineering requirements for all process phases of the planned SMCs in conjunction with Ucore and IMC’s engineering personnel. Additionally, Mech-Chem has incorporated its developed pre-and post-RapidSX™ process engineering into the design of the Demo Plant to ensure a truly seamless ramp up to the SMC’s full-scale engineering package. This work will continue throughout 2022 and into 2023 and is scheduled to conclude with developing a contract design package suitable to execute a design/build construction contract for SMC No. 1 with expected rare earth oxide production commencing in H2-2024.

With the increase in RapidSX™ processing stages, the demo plant will be able to process:

- Many feedstock sources, including planned light and heavy REE feed stocks for the SMCs;
- Tens of tonnes of mixed rare earth concentrate on a per-annum basis:
  - Including products for prospective metal/alloy makers and OEM (original equipment manufacturer) qualifications;

- All RapidSX™ splits required to produce individual praseodymium (Pr), neodymium (Nd), terbium (Tb) and dysprosium (Dy).

The Company is working with upstream SMC feedstock suppliers and is planning Demo Plant product qualification trials expected to commence in Q4-2022 with prospective/evolving North American metal/alloy makers and original equipment manufacturers. Enhanced demonstration trials utilizing tens of tonnes of mixed rare earth concentrates will continue throughout 2023.

## The SMC Business Model

On October 6, 2020, the Company introduced its ALASKA 2023 plan. In the two years since the introduction of this plan it became apparent that additional SMCs are required to truly establish an independent North American rare earth element supply chain. With this in mind, the Company has expanded its Alaska SMC plan to now include additional SMCs and has strategically targeted the US Gulf Coast and Canada (Saskatchewan or Nova Scotia) as prospective locations for the additional SMCs.

Since the Company's May 8, 2020 acquisition of IMC and its proprietary RapidSX™ metals separation technology, the Company has focused on a definitive commercialization pathway to achieve a secure, economic, rare earth element ("REE") supply chain in North America. As critical as the establishment of a complete North American REE supply chain is, it must be achieved in the shortest time frame possible and with the lowest possible capital and operating costs. The Company's business plan is focused entirely on near-term Western REE independence, by establishing downstream REE manufacturing and production capacity to cost-effectively transform US-allied-sourced REE feedstocks into made in North America finished REE oxides ("REOs").

The Companies objectives and required actions have matured and in response are embodied in the ever evolving SMC Business Model:

- Establish relationships with potential partners to obtain non-dilutive funding for the development of SMC No. 1 with a production target of H2-2024;
- Enhance the Company's relationship with AIDEA and other potential lending partners to release financing associated with the Company's Alaska SMC and Bokan projects;
- Engage with other US and Canadian governmental entities in pursuit of strategic opportunities for the location of SMC No. 1 – now targeted for a brownfield facility to mitigate schedule risk required by prospective OEM partners.
- Continue the Company's working relationship with the Alaska congressional delegation in pursuit of United States government support for the Company's Alaska business development initiatives;
- Formalize the Company's partnerships with the communities of Southeast Alaska as the Company develops the Alaska SMC and continues to progress the development of the Bokan Project;
- Establish partnerships with other potential communities as the Company develops the SMC No. 1 project;
- Support the completion of the commercialization of IMC's RapidSX™ technology and deploy the technology as quickly as possible into SMC No. 1 and with a common engineering platform for all SMCs;
- Construct the first commercial-scale RapidSX™-based HREE and LREE separation and purification plant (developed with engineering modules in common with the Alaska SMC) in the continental United States and/or Canada. To be built, commissioned and in operation by approximately H2-2024 in collaboration with the Company's evolving team of industry partners; with an estimated cost of approximately US \$50 million;
- Construct the Alaska SMC, a commercial-scale RapidSX™ HREE and LREE separation and purification plant in Southeast Alaska as the first physical component of the Bokan Project. The Company's preliminary estimates indicate that the Alaska SMC may be commissioned and in operation during 2025 and with an estimated cost of approximately US \$55 million. It will be designed to initially process US-allied sourced feedstock(s) and then ultimately feedstock from the Bokan Project itself.

### *AIDEA Financing*

On January 21, 2021, the Company provided a further update with respect to the ongoing developments with AIDEA. The board of directors of AIDEA unanimously passed a resolution authorizing the formalization of the preliminary due diligence process that the Company has been conducting with AIDEA staff since October 2020. The Company had then approached AIDEA regarding a prospective investment for the development and commercial-scale operation of the Company's Alaska SMC, planned to be built in Ketchikan, Alaska, as the first development component of the Company's 100% owned Bokan Project. The Alaska SMC project is distinct and completely separate from the Alaska State Legislatures authorization of US \$145 million in AIDEA issued bond financing for the Bokan-Dotson Ridge Rare Earth Element Project.

On January 13, 2021, senior management from the Company and IMC presented an overview of the project to the AIDEA board, outlining the development and operation of the Alaska SMC and the Company's long term plans in Alaska. The Company's currently wholly owned subsidiary, Alaska SMC LLC ("ASMC"), will manage the construction and operation of the Alaska SMC, in addition to serving as the prospective investment entity for AIDEA. The resolution passed by AIDEA authorizing a cost reimbursement agreement with the Company for due diligence activities related to the development and operation of the Alaska strategic metals complex was unanimously approved by AIDEA's board. The due diligence efforts were completed in Q1-2022. However, in an effort to simplify the process, the Company has since asked AIDEA to shift its expected financing participation to the construction phase as opposed to the design phase, as originally envisioned.

As of the date of this MD&A, the Company and its advisors remain in discussions with AIDEA and are working towards a construction financing schedule for the Alaska SMC processing plant.

### *Prospective Partners*

On October 7, 2021, the Company provided information on the execution of a Memorandum of Agreement ("MOA"), setting forth certain nonbinding understandings and binding agreements between Ucore and Southeast Conference for the evaluation and potential establishment of a Natural Resource Development Complex (the "Complex"). The Complex will include land and a building (the "Facility") suitable to house Ucore's REE separation and purification plant (the "Plant", the "Alaska Strategic Metals Complex" or the "Alaska SMC") for the production of REOs. The site selection for the Facility shall be based on the explicit goal of expanding the Complex with other related and non-related Southeast Alaska economic development opportunities.

On October 19, 2021, the Company provided information on the execution of a Memorandum of Understanding ("MOU") setting forth certain nonbinding understandings and binding agreements between Ucore and Vital Metals Limited ("Vital Metals" or "Vital"). The MOU is the first step towards the establishment of a long-term supply agreement for the delivery of mixed rare earth chemical concentrate ("MREC") from Vital Metals' Nechalacho project to Ucore's planned Alaska SMC in Ketchikan, Alaska. The MREC will be shipped from Vital's Saskatoon, Saskatchewan, Rare Earth Extraction Plant entering into production in 2022.

On January 20, 2022, the Company provided information regarding progress towards pre-purchase & supply agreements for Alaska SMC REO products; a) Under a confidentiality agreement, a 2021 engagement with an international automotive OEM and their engineering consultant to conduct a due diligence review of the Alaska SMC development plan. The initial-phase due diligence was successfully concluded, and discussions continue; b) Engaging in active offtake (for REOs and/or metals/alloys) pre-purchase & supply agreement discussions with several international companies; conversations are at various stages from early-stage to executed non-binding LOIs and/or MOUs.

On April 20, 2022, the Company provided information on the execution of an MOU with thyssenkrupp Materials Trading GmbH. The MOU contemplates thyssenkrupp Materials Trading initially supplying a minimum of 1,000 tons per annum ("tpa") of mixed rare earth carbonate for processing at Ucore's Alaska SMC in 2024, with quantities increasing in subsequent years. The parties have agreed to work toward a 10-year binding contract for



the continued and increasing supply of mixed rare earth carbonates for processing, including the consideration of various marketing strategies.

## **Realignment**

On February 16, 2022, the Company noted that it had accepted notices of resignations from members of the senior management team of IMC, including, IMC Co-founder, Chairman and Chief Executive Officer, Dr. Gareth Hatch; President and Executive Director, Tyler Dinwoodie; and Chief Operating Officer and Vice President, Metallurgy, Dr. Kurt Forrester. The resignations were the result of ongoing operation challenges between IMC and Ucore, and the resignations also coincided with plans to transition to the commercialization phase for RapidSX™ later in 2022 and beyond. The Company created a Special Committee to examine, review, and negotiate the challenges and the transition.

On April 19, 2022, the Company announced a restructuring of IMC's board of directors, management team, and technical development and deployment team as the companies streamlined towards the commercial deployment of the RapidSX™ technology platform. This successful integration resulted in an April 19, 2022, IMC board resolution waiving the remaining resignation notice periods for Dr. Gareth Hatch and Mr. Tyler Dinwoodie as officers and board members of IMC. The Ucore Board of Directors, led by Chairman and CEO Pat Ryan, has since effectively directed the activities of IMC. Patrick Ryan is now the sole member of IMC's board of directors.

As previously noted, the underway RapidSX™ commercialization program is now being led by Ucore's Chairman and CEO Pat Ryan, P.Eng., and Ucore's Vice President and Chief Operating Officer, Mike Schrider, P.E., in conjunction with Dr. Boyd Davis and Mr. Alain Roy, principals of Kingston Process Metallurgy Inc. ("KPM"), supported by additional technical expertise that Ucore/IMC has involved with the program.

## **2022 General Business Information**

On May 12, 2021, the Company provided an update on the Company's three year business model which includes transformative technology, near-term processing, and long-term resource security. A summary of each item is discussed below:

### *Transformative technology*

Since May 2020, the Company has fully financed \$3.9-million of additional cash investment into IMC to advance the RapidSX™ technology for commercial deployment. The Company progressed the design of the RapidSX™ commercial development platform, REE flow sheets and applications engineering, as well as mathematical modelling, to facilitate the design and engineering for commercialization of the RapidSX™ technology. Ucore-centric commercialization paths include the Alaska SMC heavy REO production facility and SMC facilities in the Continental US and/or Canada focused on LREEs.

### *Near-term mid-stream and downstream processing*

Rare earth oxide ("REO") production at the SMC facility during 2024 remains the target of the Company as the first step of the Company's SMC Business Model, to secure a domestic rare earth element ("REE") supply chain for North America. The Company has allocated significant funding to further continuing specific business development activities and SMC engineering activities to enable attainment of the projected timelines. This includes securing long-term supply agreements for U.S.-allied feedstock(s), securing pre-purchase and supply offtake agreements, and through Southeast Conference, finalizing an Alaska SMC facility location within the Ketchikan Gateway Borough.

In parallel to these technical activities, the Company is routinely engaged with Alaska Governor Mike Dunleavy's Alaska Development Team, which has led to mutual discussions regarding near and long-term REOs and metals/alloys supply for original equipment manufacturers involved in the electrification of the world and, specifically, the transformation to electric vehicles.

### *Long-term resource security*

In April 2021, the Company completed the shipment of nearly 500 kilograms of sorted Bokan Project mineralized material to commence the approximately \$130,000 second phase of mill flow sheet development testing at SGS Canada - Lakefield. The goal of this testing program is to finalize the design of the Bokan Project mill flow sheet based on laboratory-scale results, which will include the recovery of REEs and the co-production of beryllium, zirconium, niobium and hafnium from the Bokan Project – testing is still underway. The third phase of the program (to be undertaken as part of a PFS or FS) will be to conduct pilot-scale testing of the developed mill flow sheet utilizing mineralized material from the May/June 2022 field program, and ultimately concluding with separation and purification testing at IMC's RapidSX™ Commercialization and Development Facility ("CDF") in Kingston, Ontario.

On May 10, 2022, the Company announced the planned mobilization of a geological crew to conduct the Company's Summer 2022 fieldwork program (the "Bokan 2022 Program") at the Bokan Project on Prince of Wales Island, Alaska, USA. The Bokan 2022 Program was a continuation of the Company's 2007, 2008, 2009, 2010, 2011 & 2014 Bokan Mountain Complex exploration drill programs and was undertaken by Aurora Geosciences (Alaska) Ltd. ("AGL" or "Aurora") of Juneau, Alaska. The field work was successfully completed and was designed to improve the geological confidence of the mineral deposit in preparation for a forthcoming planned pre-feasibility study ("PFS"), as the rare earth oxide ("REO") market continues its favourable response to the increased electrification demands related to the electric vehicle ("EV") and renewable energy sectors.

The approximately 5-week Bokan 2022 Program consisted of two primary planned objectives for the field work:

1. Conduct a channel sampling program along the ≈2 km exposed vein outcroppings of the Dotson Ridge Zone and incorporate these results into the current deposit model<sup>3</sup>. Upgrade the Bokan-Dotson Ridge Zone Mineral Resource estimate from the current ≈18% Indicated and ≈82% Inferred classifications to include a ≈17% to 20% Measured classification later in 2022. The Measured resource will be drawn predominantly from the current Indicated resource, with over 90% of the new Measured material being drawn from the Indicated resource and 10% from the Inferred resource.
2. Extract ≈50 tonnes of additional mineralized material from two 2021 selected bulk sample locations to support a follow-on mill flowsheet pilot-scale testing program as part of a PFS. This work will be derived from the current mill flowsheet development work that is ongoing at SGS. The produced mineral concentrate from this pilot-scale testing will then be processed at the RapidSX™ Commercialization and Development Facility's ("CDF") Demonstration Plant as part of the Company's commercial technology deployment process. The Program is a prerequisite step in preparation for obtaining potential feedstock mineral concentrate from Bokan to supply the Company's planned Alaska SMC targeted for Ketchikan, Alaska.

As of the date of this MD&A the analytical work to prepare any updates to the resource and assessment of the obtained mineralized material are underway.

### **Ross-Adams Uranium Mine Property**

On June 8, 2022, the Company commented on the recent increasing interest in uranium as an energy source and also current interest in the Company's not-often-mentioned Ross-Adams mine property, a former-producing uranium mine located on the Ross-Adams portion of the Company's Alaskan mineral property. The property is located on Prince of Wales Island, approximately 38 miles southwest of Ketchikan, Alaska, United States, near the west arm of Kendrick Bay (within the Bokan Mountain complex). At its closest point, the edge of the former mine is located more than 500 metres from the Company's Bokan Project.

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<sup>3</sup> The deposit model for the Bokan Project was established and has been maintained by AGL since 2008.

Historical uranium production occurred at the mine from 1957 until 1971, with an estimated total of 1.3 million pounds of U<sub>3</sub>O<sub>8</sub> (triuranium octoxide) produced. Although the Company has performed no work at the mine to date, the Company believes the Ross-Adams zone may have the potential for the reactivation of mining production for uranium due to: (i) the recent price increases for uranium; (ii) geopolitical concerns regarding the security of supply chains and an emphasis on U.S. domestic and allied sources of critical materials; and (iii) a recent increase in the public's perception that uranium and nuclear power can represent an excellent strategic choice for energy production in the present and coming decades as compared with fossil fuels. As a result of this recent interest in uranium, the Company has been fielding unsolicited inquiries with respect to the former Ross-Adams mine. Nevertheless, the Company remains committed to its current business plan -- the development of an independent and comprehensive North American REE supply chain.

The Company has performed no exploration or development work at the Ross-Adams zone. The Company's mineral exploration and development work to date has primarily involved the Company's Bokan/Dotson Ridge zone, which comprises the entirety of the Company's REE mineral resource at the Bokan mountain complex. The Company does not have any current mineral resources or mineral reserves regarding uranium at the Ross-Adams zone. The Company has not published any historical estimates regarding the mineral resources or mineral reserves that may be available at the former mine.

Although the Company will continue to consider potential transactions with respect to the former mine, when the Company is reviewing such proposals, the Company will be prioritizing: (i) its own REE business plan; (ii) ESG (environmental, social and governance) objectives; and (iii) the Company's stakeholders, including the U.S. Forest Service (USFS), the State of Alaska, Alaska natives, Alaska residents, the Alaska Industrial Development and Export Authority (AIDEA), and the Company's shareholders.

### Qualified Persons

The technical disclosures in this section of this MD&A were written by the Company's management based upon information provided to the Company and approved by James Robinson, P. Geo., an independent geologist with Aurora Geosciences.

### **Financing Transactions**

On February 9, 2021, the Company announced the closing of a non-brokered private placement consisting of an aggregate of 6.7 million units at a subscription price of \$1.00 per unit for aggregate gross proceeds to the Company of \$6.7 million.

Each unit consisted of one common share of the Company and one-half of one common share purchase warrant. Each warrant entitles the holder thereof to acquire one additional common share at a price of \$1.50 per share for a period of 36 months from the date of issuance, provided that, if, over a period of 10 consecutive trading days between the date that is four months and a day from the date of issuance of the warrants and the date that the warrants would otherwise expire, the closing price of the common shares on the TSX Venture Exchange is equal to or greater than \$1.75, then the Company may, at its option, elect to accelerate the expiry of the warrants by providing notice to the holders thereof within 10 calendar days following the end of such 10-consecutive-trading-day period, in which case the warrants will expire 30 calendar days following the end of such 10-consecutive-trading-day period.

The Company used the net proceeds from the private placement to: (i) further accelerate the development of IMC's commercialization program for its RapidSX™ separation technology; (ii) continue the development of the Company's plans for its intended Alaska strategic metal complex; and (iii) for general corporate and working capital purposes, all of which are expected to advance the Company's business plans and capabilities toward its goal of earning revenue from licensing, product sales, tolling and production activities.

No cash commission fee expenses were incurred by the Company pursuant to the private placement. Finders' fees totalling an aggregate of 306,060 compensation options were issued to certain arm's-length finders in

connection with the private placement. Each finder warrant will expire 36 months from the date of issue, subject to the Company's exercise of the acceleration provision with respect to the warrants issued pursuant to the private placement and will entitle the holder thereof to purchase one unit at a price of \$1.00 per finder unit at any time up until the finder warrant expiry date. For clarity, if the Company elects to accelerate the expiry of the warrants pursuant to the acceleration provision, then the finder warrant expiry date shall similarly be accelerated such that the warrants and the finder warrants will expire on the same date.

Pursuant to the private placement, Concept Capital Management Ltd. (a greater-than-10% shareholder of the Company) subscribed for a total of 1.25 million units for aggregate gross proceeds to the Company of \$1.25-million, which is considered a related party transaction within the meaning of Multilateral Instrument 61-101 - *Protection of Minority Security Holders in Special Transactions* ("MI 61-101"). Full details of these transactions are available on SEDI as well as in the early warning report filed on the Company's SEDAR profile on February 9, 2021. The private placement is exempt from the formal valuation and minority shareholder approval requirements of MI 61-101 as neither the fair market value of the subject matter of the private placement nor the consideration paid exceeds 25 per cent of the Company's market capitalization. No new insiders or control persons were created in connection with the closing of the private placement. Due to the offering being oversubscribed, no officers or directors of the Company participated as investors in the February 2021 financing.

Assuming that all of the warrants from the private placement become exercised, the average issuance price of the common shares issuable pursuant to the private placement will be \$1.17 per common share, which the Company believes compares favourably with the net proceeds that may have been received in an alternative brokered offering of common shares involving full commission fees and related transaction costs. The private placement was unanimously approved by all of the directors of the Company. The number of common shares potentially issuable to insiders of the Company pursuant to the private placement (including any common shares issuable upon the exercise of the warrants and the finder units) represents not more than 10 per cent of the Company's currently issued and outstanding common shares on a non-diluted basis.

On July 20, 2022, the Company secured a line of credit facility in the amount of up to \$2,000,000 USD. Proceeds from the line of credit will primarily be used to continue the development of the company's RapidSX™ rare-earth element commercial demonstration plant. The line of credit has been extended by Orca Holdings, LLC. In consideration for granting the line of credit two million warrants were issued to Orca Holdings, LLC, with each warrant entitling Orca Holdings, LLC to acquire one common share of the Company at an exercise price of \$0.75 during a one-year term ending on July 20, 2023. The TSX Venture Exchange approved the issuance of the two million warrants on August 16, 2022. Details of this transaction and Mr. Johnson's holdings of the Company's securities are available on SEDI as well as in the Early Warning Report filed on SEDAR on August 19, 2022.

Drawdowns on the line of credit will be available in multiples of \$100,000 USD and carry interest at a rate of 9% per annum. All amounts owing under the line of credit will be repayable by January 20, 2023, unless such repayment is accelerated as a result of the Company completing a significant equity financing prior to January 20, 2023. The line of credit is secured by a general security agreement over the assets of the Company.

Orca Holdings, LLC is owned by Mr. Randy Johnson, a resident of Alaska, USA. Mr. Johnson, directly and indirectly, holds greater than 10% of the Company's outstanding common shares (but less than 20%) and he is Director of the Company. Therefore, the transaction is considered a related party transaction within the meaning of MI 61-101.

The line of credit facility transaction between the Company and Orca Holdings, LLC is exempt from the formal valuation and minority shareholder approval requirements of MI 61-101 since neither the fair market value of the subject matter of the transaction, nor the considered received or payable, exceed 25% of the Company's market capitalization. No new insiders and no control persons were created in connection with the closing of the transaction. The Company's Board of Directors (the "Board") believes that line of credit facility has reasonable commercial terms that are not less advantageous to the Company as compared to if the line of credit were obtained from a person dealing at arm's length with the Company. No commission fees, referral fees or bonuses were payable in regard to these transactions. No new special committee of the Board was created to separately

review and consider the transaction; however, Mr. Johnson did not participate in any Board meetings regarding line of credit facility transaction.

## **COVID-19**

The Company and its business are not immune from the economic and other implications related to the COVID-19 pandemic. The Company has implemented a number of measures regarding the COVID-19 pandemic. These include social distancing, work-from-home provisions, limits on the number of employees permitted to meet in person, cleaning and upkeep protocols, as well as an effective ban on all but essential corporate travel. These measures have become more relaxed as 2022 has progressed and the effects of the pandemic are beginning to wane. The measures are intended to provide reasonable protection to the Company's employees, business associates and neighbours as the Company continues to conduct its day-to-day business affairs in pursuit of its goals as described herein. So far, as at the date hereof, the Company is proud to report that none of its employees have been laid off, furloughed or terminated as a result of COVID-19. Management of the Company is of the opinion that the productivity of the Company and its ability to pursue its business plans, objectives and operations have not been adversely impacted by the COVID-19 pandemic. Even prior to the COVID-19 pandemic, the Company's employees and consultants had work-from-home, online and telephone access to the Company's systems, databases, electronic records, communication tools and colleagues. Regarding the Company's mineral properties, no planned onsite work has not occurred or been delayed as a result of COVID-19 pandemic. Regarding IMC's access to its RapidSX™ equipment, facilities and activities located at Kingston Process Metallurgy Inc. in Kingston, ON, there have been no delays or access issues that have arisen to date as a result of the COVID-19 pandemic. Proper COVID-19 protocols (mask wearing, social distancing and cleaning) are in place at the facilities in Kingston, ON, as prescribed by Kingston Process Metallurgy Inc. while on its premises. The Company has not received any direct financial government assistance related to the COVID-19 pandemic. The Company has benefited from reduced travel and hotel expenses during the COVID-19 pandemic as the Company's staff and business counterparties have generally been able to transition to online meetings (via Zoom or MS Teams) in place of the traditional in-person meetings that had typically occurred in the past. To date, the Company has experienced no significant disruptions to its day-day operations resulting from health and safety measures or government-imposed closures.

The COVID-19 pandemic has brought increased attention and awareness to many governments and large industrial users of critical metals (such as rare earth elements, nickel, cobalt, lithium and other technology metals) regarding the vulnerability of their supply chains to overseas, single source or non-domestic allied suppliers.<sup>4</sup> The Company believes and welcomes this increased awareness and attention to such topics by the Company's future prospective customers and potential supply-chain joint venture partners and the Company does not believe that the COVID-19 pandemic has resulted in net increased challenges for the Company in the pursuit of its business plans or objectives as a result of the COVID-19 pandemic.

## **Settlement of IBC Litigation**

On February 19, 2021, the Company, its named individual officers (collectively, "Ucore" or "Party") and IBC Advanced Technologies, Inc., its named individual officers, and all IBC shareholders that are party to the Option to Purchase Agreement (collectively, "IBC" or "Party") announced:

That the Parties have reached a settlement agreement (the "Agreement") regarding all litigation activities between the Parties and any other associated individuals.

The specific terms of the Agreement are confidential. The terms include IBC purchasing the MRT pilot plant from Ucore for US \$1.175 million (C \$1.5 million) pursuant to a series of payments. Additionally,

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<sup>4</sup> Similarly, recent increased attention regarding the risks of climate change have been welcomed by the Company's management since these risks are associated with a perceived increase in the importance of "green" initiatives and "technology" metals which the Company believes is supportive of its business plans and is important to the Company's future prospective customers and potential supply-chain joint venture partners.

the Agreement includes the termination of the Option to Purchase Agreement and any other existing agreements between the Parties, and an agreement by all Parties to dismiss all lawsuits with prejudice and to mutually release and waive all claims. Per the terms of the Agreement, there will be no further announcements or release of Agreement details by either Party.

On February 26, 2021, the US District Court, District of Utah dismissed with prejudice the consolidated matter of *IBC Advanced Technologies et al v. Ucore Rare Metals et al.*

On February 26, 2021, the Supreme Court of Nova Scotia:

- Dismissed with prejudice the matter of UCORE RARE METALS INC., a body corporate and IBC ADVANCED TECHNOLOGIES, INC., a body corporate, STEVEN R. IZATT, PAUL J. TALBOT, DR. REED M. IZATT, LIISA MARIANNE SILANDER-IZATT, DR. JERALD S. BRADSHAW in his capacity as trustee of the DR. JERALD S. BRADSHAW TRUST, DR. REED M. IZATT in his capacity as trustee of the REED M. AND HELEN F. IZATT FOUNDATION, DR. RONALD L. BRUENING, STEVEN R. IZATT in his capacity as trustee of IBC ADVANCED TECHNOLOGIES INC. 401(K) PROFIT SHARING TRUST, and DR. REED M. IZATT in his capacity as trustee of the REED M. IZATT TRUST
  - Vacated the Injunction Order issued on December 18, 2019.
- Dismissed the matter of UCORE RARE METALS INC., a body corporate and IBC ADVANCED TECHNOLOGIES, INC., a body corporate and STEVEN R. IZATT

On March 2, 2021, the Utah Court of Appeals dismissed with prejudice the matter of *IBC Advanced Technologies Inc. and Steven R. Izatt vs. Ucore Rare Metals Inc., Jim McKenzie, Mark MacDonald, and Randy MacGillivray.*

As of December 31, 2021, the Company has received all payments from IBC for a total of \$1,491,545 (US\$1.175 million).

## Resource Property Interests

In the past, Ucore's primary focus was the exploration and development of the Bokan Project in Alaska, where the Company has incurred the majority of its mineral exploration expenditures for the past several years. In recent years, more of the Company's time and expenses have been focused on developing the downstream metallurgy component of its plan, which involves the development of mineral separation, processing and metal purification technologies that can be utilized in its downstream business objectives. The Company sees the metallurgy component as one of its priorities since it is a potential bottleneck to implementing the full commercial production of the upstream Bokan Project. Accordingly, Ucore's mineral exploration and development expenses at the Bokan Project have been modest in the past two years.

The Company capitalizes its mineral exploration and evaluation ("E&E") expenditures. A detailed schedule of the Company's deferred E&E costs for the period ended June 30, 2022 and June 30, 2021 is included in Appendix "B" of this MD&A.

### ***Background Info. - The difference between a Preliminary Economic Assessment (PEA), a Prefeasibility Study (PFS) and a Feasibility Study (FS)***

The development of a new mine typically involves moving through three stages of economic review along with the creation of written studies at each stage. These reflect different confidence levels of evaluating a mining project. The confidence levels relate to geological knowledge about the mineral deposit as well as the economic estimates such as capital and operating costs that are required to profitably develop and mine the deposit. After the initial discovery, a mineral deposit is usually delineated by exploration drilling to provide an understanding of its geometry, resources, tonnes, grades and recoveries. The first study is a conceptual PEA, also called a “scoping study”, to define the scope of the project, including preliminary engineering alternatives for developing the mine and processing the ore, broad estimates of capital and operating costs, and other economic parameters.

A PEA tries to answer the question, “How best can this deposit be exploited to maximize its economic returns?” Unlike more advanced studies, a PEA can use “inferred” mineral resources for its operational and financial modeling so long as one has a reasonable expectation the outcome will be a profitable mine. A PEA is normally followed by a PFS and, if financing with debt, a (bankable) FS. A PEA rarely forms the basis for a production decision because of the higher degree of unknown risks and costs and timelines. In fact, the economic analyses that are found in typical PEAs are so speculative that it is a requirement (pursuant to NI 43-101) that if a company discloses the results of a PEA that is based upon any inferred mineral resources, then the company must state with equal prominence that “the PEA is preliminary in nature, that it includes inferred mineral resources that are considered too speculative geologically to have the economic considerations applied to them that would enable them to be categorized as mineral reserves, and there is no certainty that the PEA will be realized.”

A PFS is a more advanced study that uses only mineral “reserves” as well as “measured” and “indicated” mineral “resources”. A PFS involves more detailed engineering in order to optimize the alternatives for developing the mine and processing the ore. It also uses tighter estimates of capital and operating costs and other economic parameters by comparing them to recent examples. A PFS is usually followed by a FS, but if financing with equity, sometimes a PFS be used as the basis for a production decision if the economics are particularly robust or the costing is at a FS level.

An FS is the most advanced study. An FS often only utilises mineral “reserves” and involves definitive engineering and detailed costing based on actual tendered bids (where possible) instead of just cost estimates. An FS is considered essential in order to finance very large, very complex, capital intensive, lower return mining projects, or if financing with traditional bank loans, in which case it is often called a bankable feasibility study (BFS).

The economic analyses that are contained in a PEA, PFS or FS are intended to be utilized to determine the preferred method of commercializing the mine and to estimate its potential future economic performance as a business asset. Any valuation contained in a PEA, PFS or FS is not typically intended to be a valuation of the asset itself either from a financial accounting perspective or from the perspective of being necessarily representative of the “fair market value” of the asset. The economic analyses and any valuation contained in a PEA, PFS or FS are intended to assist the company with capital budgeting and business planning decisions. Ucore does not value its Bokan Mountain mineral property based on the results of its PEA. Ucore’s balance sheet reflects a more conservative figure for the value of Bokan Mountain, being generally only the capitalized sum that Ucore has actually spent in cash acquiring, drilling, and developing the property. In accordance with GAAP and IFRS, Bokan Mountain (just like other assets) is reflected and carried on Ucore’s balance sheet at an amount equal to the lower of its cost or market value. The value of Bokan Mountain (just like other assets) is tested for impairment (i.e. write-downs) on a regular basis, including annually when Ucore’s consolidated financial statements are audited by Ucore’s independent auditor, KPMG LLP.

### ***Background Info. – Understanding Mineral “Resources” and Mineral “Reserves”***

A mineral “resource” is a concentration or occurrence of natural, solid, inorganic, or fossilized organic material in or on the Earth’s crust in such form and quantity and of such a grade or quality that it has reasonable prospects

for economic extraction. The location, quantity, grade, geological characteristics, and continuity of a mineral resource are known, estimated, or interpreted from specific geological evidence and knowledge.

Mineral resources are sub-divided, in order of increasing geological confidence, into the following categories: (i) “inferred”; (ii) “indicated”; and (iii) “measured”. Note that the confidence level in “inferred” mineral resources is typically insufficient to allow the application of technical and economic parameters or to enable an evaluation of economic viability.

Mineral “reserves” are the portion of mineral resources that are economically feasible to produce and sell. Specifically, a mineral reserve is the economically mineable part of “measured” or “indicated” mineral resources demonstrated by at least a PFS or FS (but not a PEA). In order to classify a mineral resource as a reserve, the PFS or FS must include adequate detailed information on mining, processing, metallurgical, economic, and other relevant factors that demonstrate, at the time of reporting, that economic extraction can be justified.

Mineral reserves are sub-divided in order of increasing confidence into: (i) “probable” mineral reserves; and (ii) “proven” mineral reserves.

### ***Bokan-Dotson Ridge, Alaska***

In 2006, the Company acquired the right to the Bokan Mountain mineral property through five separate option agreements to acquire a 100% interest in a parcel of unpatented mineral claims from underlying owners and through staking a 100% interest in an additional parcel of prospective ground. The option agreements provide for the Company to acquire a 100% interest in the optioned claims in exchange for total remaining payments of US\$90,000. The five vendors will retain Net Smelter Royalties (“NSR”) ranging from 2% to 4% on their specific claims. The Company has the right to purchase between 33% and 100% of the NSR for cash payments of US\$500,000 to US\$1,000,000 per vendor. The staked claims, together with the exclusive option agreements, have the effect of providing the Company with an effective 100% control of the Bokan Mountain mineral property.

Ucore’s Bokan Project is located on Prince of Wales Island, Alaska, approximately 60 km southwest of Ketchikan, Alaska and 140 km northwest of Prince Rupert, British Columbia, with direct ocean access to the western seaboard and the Pacific Rim. The project is situated in the Tongass National Forest, within an area set aside for natural resource development.

On November 28, 2012, the Company reported the results of a PEA completed by Tetra Tech of Vancouver, BC, regarding the Dotson Ridge Zone of the Company’s Bokan Project in Southeast Alaska. A copy of this PEA (a NI 43-101 technical report) was filed on SEDAR on March 14, 2013.

On October 15, 2019, the Company issued a press release describing an updated mineral resource estimate for the Bokan Project including the identification of the tonnes and the corresponding grades of additional critical-metal co-product mineral resources. At a total rare earth oxide (“TREO”) cut-off grade of 0.40 percent, an additional 38.5 thousand tonnes of the critical and strategic metals, including niobium (Nb), zirconium (Zr) beryllium (Be), hafnium (Hf), titanium (Ti) and vanadium (V) were added to the mineral resource estimate at Bokan. The October 2019 study did not increase the overall tonnage of the deposit relative to the Company’s May 2015 mineral resource update; it only quantified the occurrence of co-product metals within the mineral resource established in 2015. The Company does not consider the co-product resources to be a “material change” to the Company.

### **Qualified Persons**

The technical disclosures in this section of this MD&A were written by the Company’s management based upon information provided to the Company and approved by James Robinson, P. Geo., an independent geologist with Aurora Geosciences.



## Cautionary Notes

Please note that the Company's PEA is preliminary in nature, that it includes inferred mineral resources that are considered too speculative geologically to have the economic considerations applied to them that would enable them to be categorized as mineral reserves, and there is no certainty that the PEA will be realized. Mineral resources that are not mineral reserves do not have demonstrated economic viability.

## Mineral Exploration and Evaluation ("E&E") expenditures at Bokan

During the period ended June 30, 2022, the Company's expenditures on metallurgy work totalled \$106,608 (2021 - \$42,180), geology expenditures totalled \$539,608 (2021 - \$Nil) as a result of the summer fieldwork program, and an additional \$78,196 (2021 - \$90,299) was spent on environmental and permitting work which includes the general carrying cost of the property. In total, during the period ended June 30, 2022, the Company incurred expenditures totalling \$724,412 (2021 - \$132,479) on the Bokan Project. See Appendix "B" of this MD&A.

## **Selected Annual Information**

The following annual information is prepared in accordance with International Financial Reporting Standards. Amounts are reported in thousands of Canadian dollars, except for per share amounts.

	<b>For the year ended December 31, 2021 \$</b>	<b>For the year ended December 31, 2020 \$</b>	<b>For the year ended December 31, 2019 \$</b>
Net loss	5,511	5,526	10,810
Loss per share – basic and diluted	0.11	0.14	0.36
Total assets	49,444	46,696	40,529

## **Results of Operations**

The Company has no operating revenues. The Company is dependent on equity or other external financings to fund the Company's mineral exploration and evaluation operations, to fund the Company's evaluation and intended development of the Company's Alaska SMC, to fund the Company's pursuit and development of the Company's consolidated business plans (including the expected continued development of IMC's RapidSX™), and also to fund all of the Company's general, administrative, interest and other costs. As a result, the Company expects to incur operating losses until such time as either: (i) an economic mineral resource is identified, developed and put into profitable commercial production on one or more of the Company's mineral properties; (ii) the Alaska SMC becomes designed, constructed and then eventually operational to the extent that it generates net profits; (iii) the Company's IMC subsidiary generates revenues from sales, licencing, fees and/or royalties that can be earned from its RapidSX™ technology; or (iv) the Company profitably sells one or more of its core assets.

During the six-month period ended June 30, 2022, the Company incurred a net loss of approximately \$2.27 million compared to a net loss of \$2.24 million for the period ended June 30, 2021, an increase of approximately \$32,000. Operating expenses totalling approximately \$2.21 million were recognized during the six-month period ended June 30, 2022 compared to \$2.49 million during the six-month period ended June 30, 2021. The decrease in operating expenses is largely a result of decreased expenditures for salaries and consultants. Further variances between the periods are discussed below.

The Company recorded non-cash amortization expenses of approximately \$57,000 during the six-month period ended June 30, 2022, which is consistent with the prior period amount of approximately \$56,000.

The Company recorded salaries and consultant expenditures of approximately \$869,000 for the six-month period ended June 30, 2022, compared to approximately \$1.2 million for the prior period. The decrease of approximately \$335,000 is as a result of payments made to engineering consultants in the prior period to advance the Company's RapidSX™ technology.

During the six-month period ended June 30, 2022 and as a result of the acquisition of IMC, the Company incurred research and development expenditures of approximately \$432,000 (2021 - \$417,000) which relates to third party consulting, analysis, and research facility expenditures incurred to further the advancement of the Company's wholly owned subsidiary's RapidSX™ technology.

Professional services expenditures were approximately \$361,000 for the six-month period ended June 30, 2022, which are consistent with prior period expenditures of \$353,000 as general business activities remained relatively unchanged period over period.

Investor relations and marketing was approximately \$153,000 for the six-month period ended June 30, 2022 an increase of approximately \$22,000 from the prior period. The increase in the current period is as a result of increased digital marketing and advertising campaign expenditures to assist in bringing awareness to the Company's business initiatives.

The Company recorded office and premises expenditures of approximately \$121,000 for the six month period ended June 30, 2022 compared to approximately \$154,000 for the prior period. The decrease in the current period of \$33,000 is as a result of a one-time office expenditures recognized in the prior period.

The Company recorded non-cash share-based compensation expense of approximately \$111,000 attributable to the estimated value of stock options earned and vested during the six-month period ended June 30, 2022. In the prior period, the Company recorded an expense of approximately \$122,000 resulting in a difference of approximately \$11,000. Differences period over period are largely attributable to size and timing of the options granted in each period.

The Company recorded travel expenditures of approximately \$56,000 for the six-month period ended June 30, 2022, compared to \$2,700 for the comparable prior period. The lower travel expenditures in the prior period are as result of the travel restrictions imposed by the COVID-19 pandemic. During the current period, employees travelled to: (i) Ketchikan, Alaska to support the Bokan summer fieldwork program; (ii) Kingston, Ontario to support the continuing development of RapidSX™; and (iii) Toronto, Ontario to attend the annual PDAC convention.

When looking at the Company's consolidated statement of loss and comprehensive loss, the difference between the operating expenses and the net loss is the result of the following items:

- During the six-month period ended June 30, 2022, the Company recorded interest and accretion expense of approximately \$218,000 (2021 - \$246,000). The interest and accretion expenditures are as a result of the Company's convertible debentures, loan payable and lease liability.
- During the year ended December 31, 2020, the Company issued 2,800 convertible debentures at a price of \$1,000 per debenture for aggregate gross proceeds of \$2.8 million. Each debenture is convertible into one common share and one half common share purchase warrant of the Company. In addition, the Company issued 50 commitment warrants per convertible debenture. On initial recognition the Company recorded a loss of approximately \$676,000. During the three-month period ended March 31, 2021, 1,545 convertible debentures were converted resulting in a loss on the conversion of convertible debentures of approximately \$534,000. Furthermore, the convertible debentures contain multiple embedded derivatives which have been revalued as at June 30, 2022 resulting in a loss on the fair value adjustment of approximately \$180,000 (2021 – \$503,000).

- On February 19, 2021, the Company and its named individual officers and IBC Advanced Technologies Inc., its named individual officers and all IBC shareholders that are party to the Option to Purchase Agreement, reached a settlement agreement regarding all litigation activities between the parties and any other associated individuals. The terms include IBC purchasing the MRT pilot plant from the Company for \$1,491,545 (\$1,175,000 USD) pursuant to a series of payments. The Company recorded a gain on the sale of the MRT pilot plant of \$1,491,545. Additionally, the agreement includes the termination of the option to purchase agreement and any other existing agreements between the parties, and an agreement by all parties to dismiss all lawsuits with prejudice and to mutually release and waive all claims. The Company has received all payments that were owing to it by IBC pursuant to the settlement and the sale of the MRT pilot plant.
- The Company recorded a foreign exchange loss of approximately \$17,000 during the six-month period ended June 30, 2022 versus a gain of approximately \$42,000 in the prior period. As the Company continues to deal in both the Canadian and United States currencies, the Company may continue to incur foreign exchange gains and losses arising from changes in the value of the United States dollar relative to the Canadian dollar.

## Summary of Quarterly Financial Results

Expressed in thousands of dollars, except per share amounts	6/30/22 \$	03/31/22 \$	12/31/21 \$	9/30/21 \$	6/30/21 \$	3/31/21 \$	12/31/20 \$	9/30/20 \$
Net loss	976	1,294	1,385	1,889	1,210	1,027	1,159	810
Loss per share – basic and diluted	0.02	0.03	0.03	0.04	0.03	0.02	0.03	0.02
Total Assets	47,939	47,466	49,444	50,934	51,331	53,363	46,696	46,668

During the second quarter of 2022, the Company incurred a net loss of approximately \$976,000 compared to a net loss of \$1.21 million for the comparable prior period. Research and development expenditures increased by approximately \$143,000 period over period due to increased research activity in the current period as the Company advances the development of the Company's the RapidSX™ technology to meet the timelines as noted in this MD&A. In the current quarter, the Company recorded a reduction of salaries and consultant expenditures of approximately \$340,000 as a result of engineering consultants used in the prior quarter to advance the RapidSX™ technology. The remaining operating expenditures remained relatively consistent period over period as operations remained consistent. In the current quarter, the Company recorded fair value adjustment of derivative liabilities of approximately \$203,000 compared to approximately \$120,000 in the prior quarter.

## Liquidity and Capital Resources

The consolidated financial statements have been prepared in accordance with International Financial Reporting Standards ("IFRS") applicable to a going concern, which assumes the Company will continue in operation for the foreseeable future and be able to realize its assets and discharge its liabilities and commitments in the normal course of business. In assessing whether the going concern assumption is appropriate, management takes into account all available information about the future, which is at least, but is not limited to, twelve months from the end of the reporting period. Management is aware, in making its assessment, of material uncertainties related to events or conditions that may cast significant doubt upon the Company's ability to continue as a going concern, as described in the following paragraphs.

The Company has no sources of revenue, experienced significant losses and negative cash flows from operations in previous years and has a deficit. Management estimates current working capital may not be sufficient to fund all of the Company's planned expenditures through the next 12 months. The ability of the Company to continue as a going concern, realize its assets and discharge its liabilities in the normal course of business and continue with, or expand upon its exploration programs is contingent upon securing financing or monetizing assets. The timing and availability of additional financing will be determined largely by market conditions and the results of the Company's ongoing exploration programs. There is no certainty that the Company will be able to raise funds as they are required in the future.

The consolidated financial statements do not reflect adjustments that would be necessary if the going concern assumption were not appropriate. If the going concern basis was not appropriate for the consolidated financial statements, then adjustments would be necessary to the carrying value of assets and liabilities, the reported revenues and expenses, and the statement of financial position classifications used.

As at June 30, 2022, the Company had negative working capital of approximately \$1.26 million with an unrestricted cash balance of approximately \$713,000.

The Company's operations used approximately \$2.27 million of cash for the six-month period ended June 30, 2022. Net cash expenditures on resource properties and related deferred costs totalled approximately \$223,000 during the period, largely driven by expenditures on metallurgy and general carrying costs of the property. This was primarily funded from working capital.

On February 9, 2021, the Company closed a non-brokered private placement consisting of an aggregate of 6.7 million units at a subscription price of \$1.00 per unit for aggregate gross proceeds to the Company of \$6.7 million. See "2021 Financing Transactions" above for additional information.

During the year ended December 31, 2021, the Company received \$83,998 from the issuance of common shares on the exercise of in-the-money warrants.

During the year ended December 31, 2021, and up to the date of this report the Company received conversion notices of \$1,545,000 for the Company's previously issued convertible debentures. In connection with the conversions the Company issued 1,287,483 common shares of the Company. The face value of the convertible debentures outstanding as at June 30, 2022 is \$1,255,000 (2021 - \$1,255,000).

On July 20, 2022, the Company secured a line of credit facility in the amount of up to \$2,000,000 USD. Proceeds from the line of credit will primarily be used to continue the development of the company's RapidSX™ rare-earth element commercial demonstration plant. The line of credit has been extended by Orca Holdings, LLC ("Orca"). In consideration for granting the line of credit two million warrants were issued to Orca, with each warrant entitling Orca to acquire one common share of the Company at an exercise price of \$0.75 during a one-year term ending on July 20, 2023.

Drawdowns on the line of credit will be available in multiples of \$100,000 USD and carry interest at a rate of 9% per annum. All amounts owing under the line of credit will be repayable by January 20, 2023, unless such repayment is accelerated by the Company's. The line of credit is secured by a general security agreement over the assets of the Company.

The Company is reliant on equity or other types of financing for its current short term and long-term working capital requirements and to fund its exploration programs and business development activities. The Company's ability to continue as a going concern is dependent upon the ability of the Company to obtain necessary financing or other satisfactory arrangements to fund its operating expenses and interest expense until development financing is obtained to allow the Company to be self-sufficient. The Company's ability to continue its development activities is dependent on management's ability to secure additional financing in the future, which may be completed by way of traditional equity financings or in a number of alternative ways including, but not limited to, a combination of: new strategic partnerships; joint venture arrangements; project-level or subsidiary-

level third-party financings; royalty or streaming financing; the sale of core and/or non-core assets; and other capital market alternatives. Management is pursuing additional financial sources, and while the Company's management has been successful in obtaining financing for the Company in the past, there can be no assurance it will be able to do so in the future or that these sources of funding or initiatives will be available for the Company or that they will be available on terms which are acceptable to the Company.

#### *Market Maker*

In regard to market making services related to the Company's common shares, the Company currently retains the services of Venture Liquidity Providers Inc. ("VLP") to provide assistance in maintaining an orderly trading market for the common shares of the Company on the TSX Venture Exchange. These market making services are undertaken by VLP through a registered investment dealer, W.D. Latimer Co. Ltd., in compliance with the policies of the TSX Venture Exchange and other applicable legislation. The Company continues to pay VLP \$5,000 per month as was described in the Company's press release dated January 15, 2016 when VLP was first retained by the Company.

#### *Investor Relations*

In regard to investor relations activities, the Company currently retains Stormcrow Capital Ltd. ("Stormcrow") to provide investment research coverage about the Company. Please see the Company's press release dated March 9, 2021. To date, Stormcrow has provided and publicly disseminated three investment research reports about the Company, these are dated March 8, 2021, May 19, 2021 and May 16, 2022 and they are available on Stormcrow's website. The Company considers the research coverage provided by Stormcrow to be independent because the Company has paid Stormcrow a fixed and flat fee of \$90,000 to provide this coverage for an extendable one-year term and this fee is not contingent on the opinions expressed by Stormcrow. The Company has engaged Stockhouse Publishing Ltd. ("Stockhouse") at a cost of \$7,500 per month for a 12 month period which ended on April 30, 2022. Stockhouse provided the Company with a variety of digital marketing, investor relations and capital markets awareness services, as well as consulting services. Commencing in February 2022, the Company has used advertising and promotion services offered by Google and Facebook to promote the Company's website and corporate videos to bring awareness to the Company's business initiatives. Since February 2022 and up until June 30, 2022, the Company has spent on average approximately \$12,500 per month for the advertising and promotion services provided by Google and Facebook. The Company's corporate videos are approved by the Company's management prior to public distribution.

### **Off-Balance Sheet Arrangements**

As at June 30, 2022, the Company had no material off-balance sheet arrangements such as guarantee contracts, contingent interest in assets transferred to an entity, derivative instruments obligations or any obligations that trigger financing, liquidity, market or credit risk to the Company.

### **Critical Accounting Estimates**

The preparation of financial statements in conformity with IFRS requires management to make estimates, judgments, and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the year. These estimates are based on historical experience, current and future economic conditions, and other factors, including expectations of future events that are believed to be reasonable under the circumstances. The determination of estimates requires the exercise of judgment based on various

assumptions and other factors such as historical experience and current and expected economic conditions. Actual results could differ from those estimates.

Further information on management's judgments, estimates and assumptions and how they impact accounting policies are described below and also in the relevant notes to the consolidated financial statements.

#### *Going concern*

The assessment of the Company's ability to continue as a going concern and to raise sufficient funds to pay for its ongoing operating expenditures, meets its liabilities for the ensuing year, and to fund planned and contractual development and exploration programs, involves significant judgment based on historical experience and other factors including expectation of future events that are believed to be reasonable under the circumstances.

#### *Recoverability of exploration and evaluation assets*

At the end of each reporting period, the Company assess its exploration and evaluation assets to determine whether any indication of impairment exists. Judgement is required in determining whether indicators of impairment exist, including factors such as the period for which the Company has the right to explore, expected renewal of exploration rights, whether substantive expenditures on further exploration and evaluation of resource properties are budgeted and results of exploration and evaluation activities on the exploration and evaluation assets.

Where an indicator of impairment exists, a formal estimate of the recoverable amount is made, which is considered to be the greater of the fair value less cost of disposal and value in use. The impairment analysis requires the use of estimates and assumptions, such as long-term commodity prices, discount rates, future capital expenditures, exploration potential and operating costs. Fair value of exploration and evaluation assets is generally determined as the present value of estimated future cash flows arising from the continued use of the assets, which includes estimates such as the cost of future expansion plans and eventual disposal, using assumptions that an independent market participation may take into account. Cash flows are discounted to their present value using a pre-tax discount rate that reflects current market assessment of the time value of money and risk to the asset. If the Company does not have sufficient information about a particular mineral resource property to meaningfully estimate future cash flows, the fair value is estimated by management through comparison to similar market assets and, where available, industry benchmarks.

#### *Asset acquisitions*

Determining whether an acquisition is a business combination or an asset acquisition requires judgment. Key factors in this determination include assessing inputs, processes, and outputs, as well as the application of the concentration test. Measuring the fair value of equity instruments issued as consideration for a business combination, and in allocating the fair value of consideration paid to the assets acquired and liabilities assumed.

#### *Convertible debentures*

In 2020 the Company issued convertible debentures with an embedded derivative, a conversion option, allowing the holder to convert any or all amounts outstanding to units, consisting of common shares and share purchase warrants of the Company. The terms of the debentures also allow the Company to convert any or all amounts outstanding to common shares under certain conditions and to extend the maturity date by one year.

#### *Other derivative financial instruments*

The determination of categories of financial assets and liabilities has been identified as an accounting policy which involves judgments or assessments made by management.

The Company records the fair value of derivative assets using valuation models where the fair value cannot be determined in active markets. The inputs used in the fair value models contain inherent uncertainties, estimates and use of judgment as certain valuation inputs are unobservable.

The identification of convertible note components is based on interpretations of the substance of the contractual arrangement and therefore requires judgement from management. The separation of components affects the initial recognition of the convertible debenture at issuance and the subsequent recognition of interest on the liability component. The determination of fair value of the liability is also based on several assumptions, including contractual future cash flows, discount rates and the presence of any derivative financial instruments.

## **Changes in Accounting Policies including Initial Adoption**

### *New accounting standards not yet adopted*

The IASB issued the following standards that have not been applied in preparing the interim consolidated financial statements as their effective date falls within annual periods beginning subsequent to the current reporting period.

#### IAS 1 – Presentation of Financial Statements

On January 23, 2020, the IASB issued an amendment to IAS 1 Presentation of Financial Statements providing a more general approach to the classification of liabilities. The amendment clarifies that the classification of liabilities as current or noncurrent depends on the rights existing at the end of the reporting period as opposed to the expectations of exercising the right for settlement of the liability. The amendments further clarify that settlement refers to the transfer of cash, equity instruments, other assets, or services to the counterparty. The amendments are effective for annual periods beginning on or after January 1, 2023 and are to be applied retrospectively, with early adoption permitted. The Company is currently assessing the financial impact of the amendments and expects to apply the amendments at the effective date.

The Company adopted the following accounting standards and amendments to accounting standards effective January 1, 2022:

#### IAS 16 – Property, Plant and Equipment

On May 14, 2020, the IASB issued an amendment to IAS 16 Property, Plant and Equipment to prohibit deducting from the cost of an item of property, plant and equipment, any proceeds from selling items produced while bringing the asset to the location and condition necessary for it to be capable of operating in the manner intended by management. The proceeds from selling such items, and the cost of producing those items are to be recognized in profit and loss. The amendments are effective for annual periods beginning on or after January 1, 2022 with early adoption permitted. The amendment is to be applied retrospectively only to items of property, plant and equipment that are brought to the location and condition necessary for them to be capable of operating in the manner intended by management on or after the earliest period presented in the financial statements in the year in which the amendments are first applied. These amendments had no impact on the Company's condensed interim consolidated financial statements.

#### IAS 37 – Provisions, Contingent Liabilities and Contingent Assets

On May 14, 2020, the IASB issued an amendment to IAS 37 Provisions, Contingent Liabilities and Contingent Assets to specify which costs an entity includes in determining the cost of fulfilling a contract for the purpose of assessing whether the contract is onerous. The amendment specifies that the cost of fulfilling a contract comprises the costs that relate directly to the contract. Costs that relate directly to the contract can either be incremental costs of fulfilling the contract or an allocation of other costs that relate directly to fulfilling contracts. The amendments are effective for contracts for which the Company has not yet fulfilled all its obligations on or after January 1, 2022 with early adoption permitted. These amendments had no impact on the Company's condensed interim consolidated financial statements.

## IFRS 9 – Financial Instruments

On May 14, 2020, the IASB issued an amendment to IFRS 9 Financial Instruments clarifying which fees to include in the test in assessing whether to derecognize a financial liability. Only those fees paid or received between the borrower and the lender, including fees paid or received by either the entity or the lender on the other's behalf are included. The amendment is effective for annual periods beginning on or after January 1, 2022 with early adoption permitted. These amendments had no impact on the Company's condensed interim consolidated financial statements.

## **Related Party Transactions**

Related parties consist of key management personnel, directors, and entities that are associated with the Company as well as significant shareholders including Orca Holdings, LLC. The Company has defined key management personnel as senior executive officers, as well as the Board of Directors. The total remuneration of key management personnel and the Board of Directors was as follows:

	Six month period ended June 30, 2022	Six month period ended June 30, 2021
Director's fees	\$ 109,500	\$ 101,500
Share-based payments to directors	47,022	5,947
Key management short-term benefits	238,544	175,637
Share-based payments to key management	37,618	14,913
	\$ 432,684	\$ 297,997

Key management short-term benefits include all salary, bonuses, and health/dental benefits earned by officers during the period.

### *Other related party transactions*

During the quarter ended June 30, 2022, the Company paid \$171,151 (Q2 2021 - \$179,475) in legal fees to Miller Thomson LLP. Mr. Geoff Clarke, a director of the Company, is a partner of that law firm. Payments made by the Company to Miller Thomson LLP are for the various legal services provided to the Company by several lawyers and law clerks at the firm, which includes lawyers and law clerks in multiple provinces and offices across Canada.

On February 9, 2021, the Company announced the closing of a non-brokered private placement consisting of an aggregate of 6.7 million units at a subscription price of \$1.00 per unit for aggregate gross proceeds to the Company of \$6.7 million. See "Q1 2021 Financings" above. As part of this offering, Concept Capital Management Ltd. (a greater-than-10% shareholder of the Company) subscribed for a total of 1.25 million units for aggregate gross proceeds to the Company of \$1.25-million, which is considered a related party transaction within the meaning of MI 61-101. Details of this transaction are available on SEDI as well as in the Early Warning Report filed on SEDAR on February 9, 2021. This private placement was exempt from the formal valuation and minority shareholder approval requirements of MI 61-101 as neither the fair market value of the subject matter of the private placement nor the consideration paid exceeds 25 per cent of the Company's market capitalization. No new insiders or control persons were created in connection with the closing of the private placement. Due to this offering being oversubscribed, no officers or directors of the Company participated as investors in this February 2021 financing.

On April 2, 2019, the Company announced that it has entered into a secured loan agreement with Orca Holdings, LLC (owned by Mr. Randy Johnson). Mr. Johnson, directly and indirectly, holds greater than 10% of the Company's outstanding common shares (but less than 20%). The loan is in the amount of \$3.6 million and the proceeds were used for general working capital purposes, and to set-off or dismiss any short-term amounts owing to Orca Holdings, LLC. The short-term obligations include payments on the sale leaseback, and subsequent repurchase of the Company's Pilot Plant. The loan had termination date of March 31, 2021. Payments which would have otherwise come due under the lease agreement between April 1, 2019 and June 30, 2019 were added to the



principal amount of the loan. The loan had an interest at a rate of 12.5% annually for the first 9 months commencing July 1, 2019 and then at a rate of 15% annually for the 12 months commencing April 1, 2020. In addition to the aforementioned loan, on August 23, 2019 the Company secured a separate bridge loan in the amount of \$397,500 (\$300,000 USD) from Orca Holdings, LLC which had an interest of 12.5%. On November 6, 2019, the Company repaid in full the principal and interest outstanding on the bridge loan with Orca Holdings, LLC. In addition, on November 27, 2019, the Company announced that it has repaid \$2,500,000 in principal owing, extended the maturity date of the loan until November 30, 2021, and renegotiated a reduced interest rate of 9%. Furthermore, in consideration for agreeing to these more favourable terms for the Company, subject to the TSX Venture Exchange's approval, the Company will issue five hundred thousand bonus warrants to Orca Holdings, LLC. Each warrant will entitle Orca Holdings, LLC to acquire one common share of the Company at an exercise price of \$1.20 during the term ending on November 30, 2021. The remaining loan is secured by a first charge on the Company's assets.

On November 29, 2021, the Company amended the secured loan agreement with Orca Holdings, LLC for which the maturity date was extended 24 months to November 30, 2023 and the Company issued 1,000,000 warrants to Orca Holdings, LLC with an exercise price of \$1.20 and an expiry date of November 30, 2023.

On July 20, 2022, the Company secured a line of credit facility in the amount of up to \$2,000,000 USD. Proceeds from the line of credit will primarily be used to continue the development of the company's RapidSX™ rare-earth element commercial demonstration plant. The line of credit has been extended by Orca Holdings, LLC. In consideration for granting the line of credit, two million warrants were issued to Orca Holdings, LLC, with each warrant entitling Orca Holdings, LLC to acquire one common share of the Company at an exercise price of \$0.75 during a one-year term ending on July 20, 2023. The TSX Venture Exchange approved the issuance of the warrants on August 16, 2022.

Drawdowns on the line of credit will be available in multiples of \$100,000 USD and carry interest at a rate of 9% per annum. All amounts owing under the line of credit will be repayable by January 20, 2023, unless such repayment is accelerated by the Company's. The line of credit is secured by a general security agreement over the assets of the Company.

The loan transactions and line of credit facility are considered related party transactions within the meaning of MI 61-101.

The secured loan transactions and line of credit facility between the Company and Orca Holdings, LLC are exempt from the formal valuation and minority shareholder approval requirements of MI 61-101 since neither the fair market value of the subject matter of the transaction, nor the considered received or payable, exceeded 25% of the Company's market capitalization. No new insiders and no control persons were created in connection with the closing of the transactions. The Company's Board of Directors (the "Board") believes that the secured loans and line of credit facility have reasonable commercial terms that are not less advantageous to the Company as compared to if the loan or line of credit was obtained from a person dealing at arm's length with the Company. No commission fees, referral fees or bonuses were payable in regard to these transactions. In addition, no specific restrictive operating or financial ratio covenants exist in regard to the secured loans that could trigger a default or would otherwise affect the operations of the Company. No new special committee of the Board was created to separately review and consider the original loan and amendment transactions since Mr. Johnson was not a member of the Board at the time of those transactions. Although Mr. Johnson became a Board member of the Company on October 6, 2020, Mr. Johnson did not participate in any Board decisions regarding the November 19, 2021 loan extension and the July 20, 2022 line of credit facility transaction. For information about Mr. Johnson's holdings of Ucore's securities, please the Early Warning Report filed on SEDAR on August 19, 2022.

All related party transactions were valued and recorded by the Company at the stated amount agreed to between the parties. To the Company's knowledge, the Company's reporting insiders have reported their transactions on the System for Electronic Disclosure by Insiders, known as SEDI ([www.SEDI.ca](http://www.SEDI.ca)).

## Outstanding Share Data

The Company's outstanding share capital is detailed in note 15 of the Company's condensed interim consolidated financial statements for the fiscal quarter ended June 30, 2022. Since June 30, 2022, the following share capital transactions have occurred:

- On August 9, 2022, the Company granted an aggregate of 2,325,000 options to directors, officers, employees and consultants of the Company. The options are exercisable into common shares at a price of \$0.85 per share and the options expire five years from August 9, 2022, the date of grant. One third of the options will vest after six months, with one third vesting every six months thereafter until fully vested.
- On August 16, 2022, the Company issued 2 million warrants to Orca Holdings, LLC in consideration for the credit facility that was entered into on July 20, 2022.
- On August 21, 2022, 810,000 options (which were granted on August 21, 2017) expired unexercised.

The following is the Company's issued and outstanding share data as of the date of this MD&A report (August 28, 2022).

Securities	Number	Weighted average exercise price \$	Weighted average remaining life (years)
Common shares	49,084,130	n/a	n/a
Warrants	7,258,141	1.26	1.21
Stock options under plans approved by shareholders	3,784,000	1.05	4.23
Deferred share units under plans approved by shareholders	55,710	n/a	n/a

## Risks and Uncertainties

In conducting its business, the principal risks and uncertainties faced by the Company relate to:

- exploration and development success of the Company's mineral properties;
- the development of the Company's prospective Alaska SMC and SMC No. 1 including the procurement of one or more business partners and/or suppliers to either: (i) design and provide a traditional solvent extraction (SX) mineral processing and purification technology capable of efficiently processing and purifying one or more feedstocks of mixed rare earth mineral concentrates and/or any related critical material co-products; or (ii) design and provide an innovative SX mineral processing and purification technology (such as RapidSX™) capable of efficiently processing and purifying one or more feedstocks of mixed rare earth mineral concentrates and/or any related critical material co-products;
- the ability of IMC to generate positive cashflow from its business operations;
- the ability of the prospective Alaska SMC or SMC No. 1 to generate positive cashflow from its expected future business operations;
- commodity prices and the demand for REEs and other critical materials that underlay the business objectives of the Company;
- capital adequacy, liquidity and cash management along with the ability to obtain additional financing in both the short and long terms;

- counter-party risk and issues related to any significant non-compliance by the parties to the Company's material contracts;
- the ability of the Company to develop and/or protect its intellectual property; and
- general economic, business and capital market sentiment and conditions.

The Company's PEA (discussed in the overview section of this MD&A) is preliminary in nature. The PEA includes indicated and inferred mineral resources only, which are considered too speculative geologically to have the economic considerations applied to them that would enable them to be categorized as mineral reserves. There is no certainty that the PEA will be realized. Mineral resources that are not mineral reserves do not have demonstrated economic viability. See the "Background Info" sections above.

Most mineral exploration projects do not result in the discovery or development of commercially or profitably mineable ore deposits. No assurance can be given that any particular level of recovery of ore reserves or resources will be realized or produced from the Company's Bokan Project. Estimates of reserves and resources, mineral deposits and production costs can also be affected by such factors as: property title and tenement defects; environmental permitting; mining regulations and regulatory requirements; first nations rights or entitlements; wildlife concerns; weather and environmental factors; unforeseen technical difficulties; unusual or unexpected geological formations; work interruptions, strikes and/or protests. Material changes in ore reserves and resources, grades, stripping ratios, recovery rates or expected vs. realized selling prices of the underlying commodities may also significantly affect the economic viability of any project. Certain of the Company's mineral properties may be subject to defects in title not yet known to the Company resulting the risk of loss of ownership. The Company may incur significant costs related to defending the title to the Company's properties.

The Company's future viability may depend, in part, on its ability to identify and acquire new or additional mineral rights and/or business opportunities, and on the ability to finance and develop those opportunities. Mineral exploration and development is highly speculative in nature, expensive and is frequently non-productive or profitable. Substantial expenditures are required to:

- locate and establish ore reserves and resources through drilling and metallurgical and other testing techniques;
- determine metal content and metallurgical recovery processes to extract metal from the ore; and
- permit, construct, renovate and/or expand mining and processing facilities.

In addition, the prices of metals fluctuate widely and are affected by many factors outside of the Company's control. The relative prices of metals and future expectations for such prices have a significant impact on the market sentiment for investment in mining and mineral exploration companies.

The Company will be reliant on equity or other types of external financing for its current, short-term and long-term working capital requirements and to fund its exploration programs. The Company does not generate any revenue and does not have sufficient funds to put any of its resource's interests (including the Alaska SMC) into production from its own financial resources. There is no assurance that a future significant financing will be available to the Company, or that it will be available on acceptable terms. If an equity or convertible securities financing is undertaken and completed by the Company, the Company's current stockholders will suffer immediate dilution to their equity and voting interests as a result of such a financing. If additional capital is not available in sufficient amounts or on a timely basis, the Company will experience liquidity problems, and the Company could face the need to significantly curtail current operations, change our planned business strategies and pursue other remedial measures. Any curtailment of business operations would have a material negative effect on operating results, the value of the Company's outstanding common shares and the Company's ability to continue as a going concern.

The Company has no history of paying dividends on its common shares, and the Company does not anticipate paying any dividends in the foreseeable future.

There is no assurance that the Company will receive any direct funding from the US Government related to the IBAS program.

There is no assurance that AIDEA will provide any funding related to the Alaska SMC, as contemplated in the letter from AIDEA dated December 18, 2019.

IMC's RapidSX™ mineral processing and purification technology is only at advanced testing and optimizations stages utilizing a pilot facility that is located in Kingston, Ontario, Canada and has yet to be proven at a commercial scale in a large REE purification and processing facility. Ucore has not yet prepared or released an economic assessment or feasibility study that utilizes RapidSX™ for the separation and production of REEs from the Bokan Project property. The following risks are specific to IMC and RapidSX™:

- The commercial effectiveness of RapidSX™ is subject to uncertainty and risk, and may be affected by many factors, some of which are beyond the Company's control, including the emergence of newer, more competitive technologies and processes, the cost of building and operating a commercial-scale RapidSX™ facility, regulatory and environmental requirements, unknown profitability performance and financial metrics, the existence, knowledge and cooperation of key individuals of IMC, and the ability to attract customers and sources of feedstock.
- The long-term success of the Company's acquisition of IMC will depend upon, among other things, the ability to protect the key intellectual property including any relevant patents, trade secrets, trademarks, and copyright materials and property. There is no assurance that these will remain protected. There is also no assurance that alternate or competing technology will not get developed that will result in existing intellectual property becoming obsolete or less competitive.
- The specialized scientific nature of RapidSX™ means that the acquisition's success depends in a large part on the ability to recruit and retain key management, engineering, scientific, and operating personnel. Recruiting in these fields can be highly competitive and there is no assurance that key employees will be able to be recruited and retained.

The Alaska SMC and SMC No. 1 discussed in this MD&A are preliminary, conceptual and aspirational in nature as at the date hereof. There is not yet a physical plant or facility and their development will require funding and the support of business partners, customers and the State government in order to be designed, developed, constructed and become operational, none of which is assured.

The Company's business activities are inherently risky and the Company is exposed to business and financial risks as well as liability. Many of these risks are non-insurable. For the insurable risks, if the Company is unable to maintain adequate insurance, or liabilities exceed the limits of the Company's insurance policies, the Company may be unable to continue operations. Because of the unique difficulties and uncertainties inherent in new mineral exploration ventures as well as new scientific and technological business ventures, the Company's activities face a high risk of business failure. Due to the Company's limited capital, this risk poses a significant threat as compared to larger companies in our business sector.

The Company's financial instruments consist of cash, restricted cash, short-term deposits, marketable securities, trade and other receivables, and accounts payable and accrued liabilities. Management does not believe these financial instruments expose the Company to any significant interest, currency or credit risks arising from these financial instruments. The fair market values of these financial instruments approximate their carrying values, unless otherwise noted.

## **COVID-19**

In March 2020, the World Health Organization declared coronavirus COVID-19 a global pandemic. This contagious disease outbreak, which has continued to spread, and any related adverse public health developments, has adversely affected workforces, economies, and financial markets globally, potentially leading to an economic

downturn. It is not possible for the Company to predict the duration or magnitude of the adverse results of the outbreak and its effects on the Company's business or results of operations at this time. As of the date of this MD&A, the Company has not suffered any significant setbacks to its operations as a direct result of COVID-19 and no staff members have been laid off or furloughed. However, the pandemic may impair the Company's ability to pursue business opportunities with various other parties that have not been so fortunate.

The COVID-19 pandemic has resulted in the Company and its staff members having more work-from-home and online remote working situations and meetings. This transition has caused the Company to be more aware of cybersecurity risks and information technology risks which may be heightened as a result of these circumstances. The Company's management assess this risk and take measures to minimize it, such as using and updating to current versions of software, employing online communications with encryption protection and maintaining backup soft copies of with the Company's required books and records.

## **Climate Change**

Recent increased attention regarding the risks of climate change may result in an increase in the stigmatization of the Company's industry (mineral resource development and mineral extraction/separation technologies). This may result in reduced interest or investment participation by capital market participants and the Company, thereby making it more difficult for the Company to raise funding on terms that are acceptable to the Company. In addition, increased concerns about climate change and any negative sentiments about the Company's industry and sector may adversely affect the timing or ability to receive any required environmental permits that may eventually be required prior to the potential Alaska SMC or SMC No. 1 facility going into production, the Bokan property becoming built into an operating mine, and/or influencing IMC's future expected customers and their ability to build and operate their mines and generate feedstock for eventual processing in a potential RapidSX™ separation facility.

## **Disclosure Controls and Procedures and Internal Controls over Financial Reporting**

Disclosure controls and procedures ("DC&P") are intended to provide reasonable assurance that material information is gathered and reported to senior management to permit timely decisions regarding public disclosure. Internal controls over financial reporting ("ICFR") are intended to provide reasonable assurance regarding the reliability of financial reporting and the preparation of consolidated financial statements for external purposes in accordance with Canadian generally accepted accounting principles.

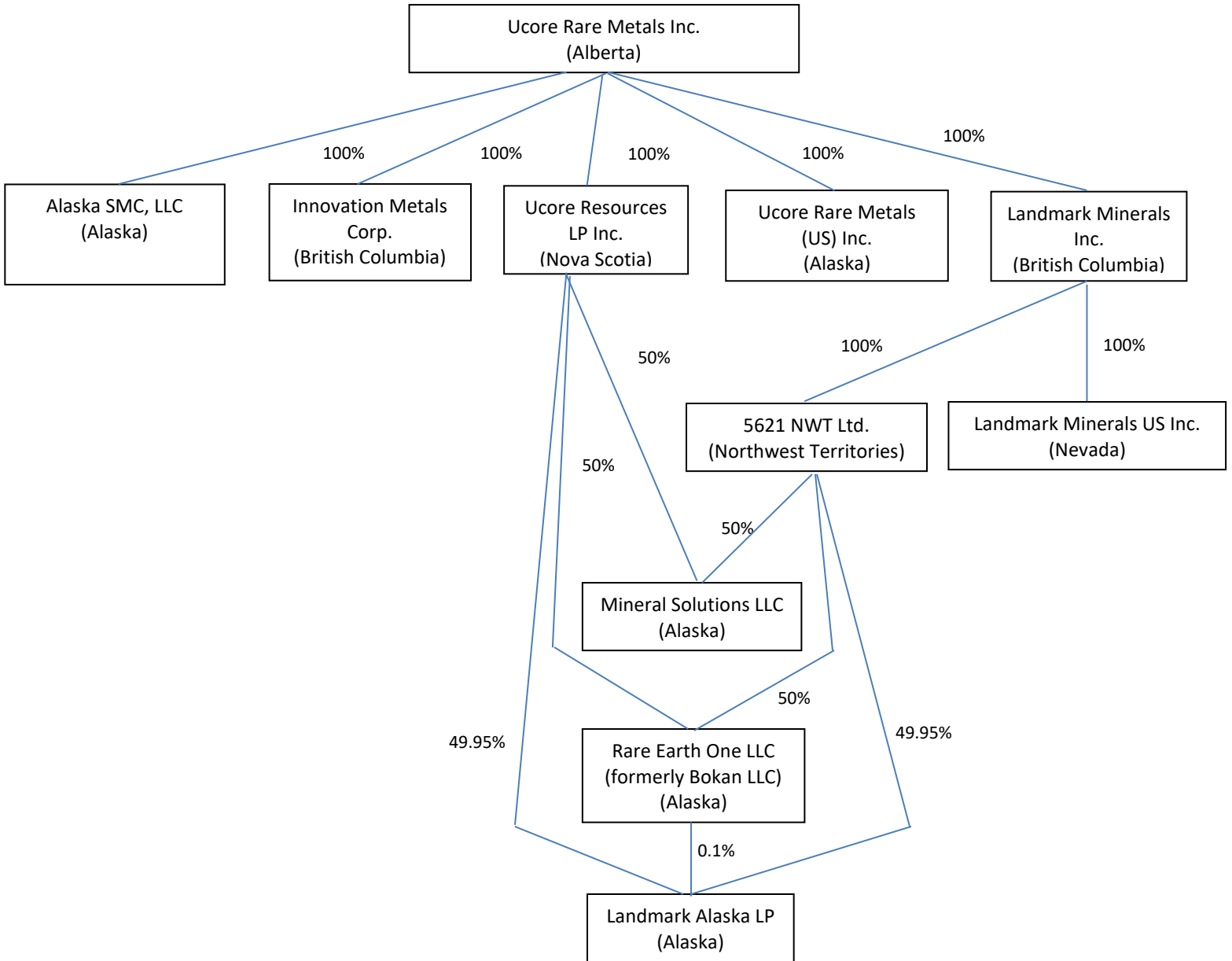
TSX Venture Exchange listed companies are not required to provide representations in their annual and interim filings relating to the establishment and maintenance of DC&P and ICFR, as defined in Multinational Instrument 52-109. In particular, the CEO and CFO certifying officers do not make any representations relating to the establishment and maintenance of (a) controls and other procedures designed to provide reasonable assurance that information required to be disclosed by the issuer in its annual filings, interim filings or other reports filed or submitted under securities legislation is recorded, processed, summarized and reported within the time periods specified in securities legislation, and (b) processes to provide reasonable assurance regarding the reliability of financial reporting and the preparation of consolidated financial statements for external purposes in accordance with the issuer's GAAP.

## **Other Information**

Additional information regarding the Company is available on SEDAR at [www.sedar.com](http://www.sedar.com) and on the Company's website at [www.ucore.com](http://www.ucore.com).

## Appendix "A"

### Ucore Rare Metals Inc. Corporate Organizational Chart as at August 29, 2022



**Appendix “B”**  
**Ucore’s Mineral Exploration and Evaluation (“E&E”) Expenditures**

**For the period ended June 30, 2022**

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**Details of Resource Properties and Related Deferred Costs**

	Bokan Mountain/ Dotson Ridge
<b>Mineral Properties</b>	
Balance, beginning of period	\$ 4,733,821
Expenditures during the period	-
Change in foreign exchange rates	43,630
Balance, end of period	4,777,451
<b>Deferred Exploration expenditures:</b>	
Geology	539,608
Environmental & permitting	78,196
Metallurgy	106,608
	724,412
Balance, beginning of period	32,471,189
	33,195,601
Change in foreign exchange rates	307,757
Balance, end of period	33,503,358
<b>Mineral properties and deferred exploration expenditures, end of period</b>	<b>\$ 38,280,809</b>

**For the period ended June 30, 2021**

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**Details of Resource Properties and Related Deferred Costs**

	Bokan Mountain/ Dotson Ridge
<b>Mineral Properties</b>	
Balance, beginning of period	\$ 4,725,425
Expenditures during the period	-
Change in foreign exchange rates	(77,317)
Balance, end of period	4,648,108
<b>Deferred Exploration expenditures:</b>	
Geology	-
Environmental & permitting	90,299
Metallurgy	42,180
	132,479
Balance, beginning of period	32,112,603
	32,245,082
Change in foreign exchange rates	(545,387)
Balance, end of period	31,699,695
<b>Mineral properties and deferred exploration expenditures, end of period</b>	<b>\$ 36,347,803</b>