

Management's Discussion and Analysis Quarterly Highlights

Three months ended August 31, 2022

Management Discussion & Analysis – Quarterly Highlights Three months ended August 31, 2022

The following management discussion and analysis - quarterly highlights (the "MD&A Highlights") of the financial condition and results of the operations of Geomega Resources Inc. (the "Corporation", "Company" or "Geomega") constitutes management's review of the factors that affected the Corporation's financial and operating performance for Q1-23. This MD&A Highlights should be read in conjunction with the Corporation's unaudited condensed interim financial statements as of August 31, 2022 prepared in accordance with the International Financial Reporting Standards ("IFRS"), as well as with the management discussion and analysis

for the year ended May 31, 2022. All figures are in Canadian dollars unless otherwise noted.

Further information regarding the Corporation and its operations are filed electronically on the System for Electronic Document Analysis and Retrieval (SEDAR) in Canada and can be found on <u>www.sedar.com</u>.

Abbreviation	Period	
Q1-22	June 1, 2021 to August 31, 2021	
Q2-22	September 1, 2021 to November 30, 2021	
Q3-22	December 1, 2021 to February 28, 2022	
Q4-22	March 1, 2022 to May 31, 2022	
Fiscal 22	June 1, 2021 to May 31, 2022	
Q1-23	June 1, 2022 to August 31, 2022	
Q2-23	September 1, 2022 to November 30, 2022	
Q3-23	December 1, 2022 to February 28, 2023	
Q4-23	March 1, 2023 to May 31, 2023	
Fiscal 23	June 1, 2022 to May 31, 2023	

1. NATURE OF ACTIVITIES

Geomega is a mineral exploration and evaluation Corporation focused on the discovery and sustainable development of economic deposits of metals in Quebec. Geomega is committed to meeting the Canadian mining industry standards and distinguishing itself with innovative engineering, high stakeholder engagement and dedication to local transformation benefits. The common shares of the Corporation are trading under the symbol GMA on the TSX Venture Exchange (the "Exchange") and under the symbol GOMRF on the OTCQB market.

As society moves from consumption of fossil fuels to more sustainable energy sources, Geomega believes that the future of clean energy resides in one of the rare earth elements ("REE") called neodymium. Neodymium is vital for the production of high-performance permanent magnets used in a wide variety of electrical motors. Such motors are in increasing demand with the growth of sustainable-energy initiatives such as hybrid and electric vehicles and direct-drive wind turbines.

Innord Inc. ("Innord") is the innovation arm of Geomega and was created in March 2015 to optimize the value of the separation technology by facilitating its development through direct investments of key financial partners. Innord is a wholly owned subsidiary of Geomega that holds all the separation rights and laboratory equipment. The primary goal of Innord is to successfully develop and scale-up its proprietary technologies. All research and development initiatives of Geomega are conducted by Innord.

2. CORPORATE UPDATE

2.1 Financial Highlights

Geomega has \$4,750,133 of cash and cash equivalents as of August 31, 2022 and a working capital of \$4,278,955 (working capital of \$5,040,553 as at May 31, 2022).

Management Discussion & Analysis – Quarterly Highlights Three months ended August 31, 2022

2. CORPORATE UPDATE (CONT'D)

For Q1-23, the Corporation recorded a net loss of \$810,777 compared to a net loss of \$361,390 for Q1-22. Excluding the effects of fluctuations from the investment in an associate, a net loss of \$365,872 was realized in Q1-23 compared to a net loss of \$333,890 in Q1-22. The main variations are as follows:

- Research fees of \$82,345 (\$60,000 in Q1-22). Innord is performing research projects to apply its technology for extraction of critical metals by processing Bauxite residues. Part of the funding for these projects comes from a partner in the aluminum sector. Research revenues are recorded as the Corporation spends money and resources on these projects. With the growth within the research team, work has accelerated compared to the same quarter of the previous year.
- Exploration and evaluation expenses, net of tax credits of \$220,230 (\$141,457 in Q1-22). Now that the engineering of the demonstration plant for magnet recycling is well ongoing, the Corporation has started working on new research projects with the objective to adapt its technology to new streams. Several new employees have been hired to accelerate the development of these new projects.
- Travel, conferences and investor relations of \$56,307 (\$90,335 during Q1-22). Part of the variation comes from stock-based compensation which was \$27,925 for Q1-23 and \$23,095 for Q1-23. Some marketing contracts ended in 2022 and have not been replaced or have been reduced for 2023.
- Filing fees of \$8,919 (\$16,749 in Q1-22). A one-time fee of \$8,500 USD was paid during Q1-22 related to the upgrade performed in the US OTC market where the Company moved from "OTC Pink" to "OTCQB venture".
- Rent expense of \$36,776 (\$18,820 in Q1-22). Rental expense remained relatively stable year over year, but with the end of the previous sublease agreement and the start of equipment orders for its demonstration plant, the Company reduced the area it sublets at its premises in Saint-Bruno-de-Montarville.
- Interest income of \$13,708 (\$4,100 in Q1-22). As the Company invests its cash surplus in low-risk, fixed-return investments, it was able to benefit during Q1-23 from the increase in prime rates, which enabled a rise in rates on GICs and high interest saving accounts.
- Impairment of an investment in an associate of \$394,437 (nil in Q1-22). With the decline observed on the financial markets since the beginning of 2022, the fair value of the investment in Kintavar Exploration Inc. fell for the first time below its book value when the share price on the Exchange was at \$0.055 as of August 31, 2022. An impairment has therefore been recorded to reduce the investment to its estimated recoverable value. A recovery in value may be recorded if the stock rebounds in the coming months.

2.2 Financing Received

During Q1-23, the Corporation received a total of \$11,625 following the exercise of 75,000 stock options against which 75,000 shares were issued.

Other than the exercise of the options mentioned above, no new financing has been announced. However, the Corporation started to receive the first installments of grants confirmed in fiscal 2022. The following amounts have been received of which a part has been applied against property and equipment and a part against research expenses with the balance being recorded as deferred grants:

Management Discussion & Analysis - Quarterly Highlights

Three months ended August 31, 2022

2. CORPORATE UPDATE (CONT'D)

- Sustainable Development Technology Canada (SDTC): \$196,266 received out of \$1,541,000. •
- Ministry of Energy and Natural Resources of Quebec (MERN): \$60,000 received out of \$400,000.
- Quebec Ministry of Economy and Innovation Innovation Program: \$75,000 received out of \$150,000.

2.3 Demonstration Plant

The magnet recycling project has been progressing despite the post-COVID challenges facing the manufacturing sector. Although the project remains behind schedule of the initial estimates from 2019 and 2020, the diligent engineering work serves to improve our technology which is still in Technology Readiness Level 8. The switch to inhouse engineering for the detailed engineering phase provided more control over costs and execution but at the same time slowed down the project while the team was hired and trained, which continues even today.

Progress at the various stages of the project is explained below:

- ✓ Process design The process flow diagrams (PFD) are complete, the Piping & Instrumentation Diagrams (P&ID) are approximately at 80% completeness level and continue to evolve as more equipment is being ordered and detailed designs are provided by the vendors. Instrumentation, control system integrator and valve selections have been made and orders are expected to be issued in November for these items. The process control diagrams (PCDs), P&ID, stream tables, utility list, process description, control philosophy and operation schedule (batch process) are being periodically updated as the project advances.
- ✓ Equipment and packages Equipment ordering began in May 2022. Out of the 31 packages, a total of 10 has been ordered while others are being finalized with vendors and are expected to be ordered in the coming months. Some of the equipment is expected to start arriving in February 2023.
- \checkmark Pre-construction activities - The Corporation has selected the engineering firm for peripheral engineering design (civil and architectural, HVAC system, drain system designs, etc.) and the contract is expected to kick off in the coming weeks. A project safety study was conducted by a specialized firm around the off-gas system of the plant which contributed to process design improvements. A technical risk assessment of the project is being currently conducted by an external consultancy. These safety studies will be important to HAZOP activities which are planned for early 2023, project permitting and insurance contracts. Permitting activities have begun and will continue as required at the various upcoming stages of construction and commissioning.
- ✓ Layout The latest layout was provided in the March 2022 update. An updated layout will be completed by the engineering firm mentioned above in the coming months as their work is being performed and all the detailed equipment drawings are received.
- Complementary testwork Certain pilot and bench scale testwork has continued throughout the year \checkmark to support and adjust the design of the demonstration plant. Some of the improvements include more efficient filtration medium selection and testing, improved cobalt recovery circuit, crushing and grinding optimization and improved cake moisture enabling a simplified solid handling method.

As the above activities are completed, the Corporation will be requesting detailed construction quotes before moving to ground preparation work, equipment receiving, inspection and installation during 2023. More information will be provided as these milestones are met.

Management Discussion & Analysis – Quarterly Highlights Three months ended August 31, 2022

2. CORPORATE UPDATE (CONT'D)

2.4 Bauxite Residues Processing

The Bauxite Residues project has taken up the majority of the work in our R&D labs this year. The project is divided into 2 sub-projects:

- Pilot plant and feasibility study
- Evaluating various opportunities to monetize the iron compounds

Work is advancing in parallel on both of these sub-projects. Various new analytical equipment was ordered and received this year which is now being used to further optimize and advance the processing technology in bench scale in preparation for piloting. The additional bench scale work completed so far this year is encouraging and looks very promising for the piloting in 2023. Some of the piloting equipment has now been ordered and is expected to be received in the coming months. Delays due to longer than expected lead times and hiring the technical team for the Bauxite Residues project are major challenges which are causing delays in the project. Multiple improvements should streamline equipment ordering as the project advances and ramps up in 2023. Challenges and improvements related to hiring the technical team were discussed in the Human Resources section above and should help accelerate the project in the next year. Initial results from the project could be expected in Q3-23 or Q4-23.

3. OUTLOOK ON THE UPCOMING MONTHS

Geomega's objectives are to develop processing technologies and to apply them to rare earth elements and other critical and strategic metals where the existing technologies have poor environmental performance such as large footprints, high consumption of acids, low recoveries, large amounts of waste or loss of valuable metals. The various projects of the Corporation are in different phases of development but since many of these technologies and applications end up having synergies, the rate of progress in some of the projects can change significantly. Ultimately, Geomega is looking to apply its technologies to high value opportunities and deploy them through building and operating the plants, licensing to major companies around the world or a combination of both, depending on the project.

The Corporation's intended activities are presented here and are divided by major ongoing projects.

Rare Earths Recycling

- o Continue detailed engineering of the demonstration plant
- o Continue vendor selection and equipment ordering
- o Integrate equipment design into the piping and instrumentation diagram (P&ID) as they are finalized
- Peripheral engineering design (civil and architectural, HVAC system, drain system designs, etc.)
- Independent HAZOP
- Permitting
- Hand out construction contracts
- Various purification tests on the final products for potential buyers
- o Secure more supply to ensure long-term profitability of commercial plant operations
- o Secure long term offtake agreements with potential clients

Bauxite Residue Sustainable Processing

- Continue testwork, modeling, process design and optimization
- o Continue equipment ordering for the pilot plant
- o Assembly and testing of the received equipment

Management Discussion & Analysis - Quarterly Highlights Three months ended August 31, 2022

3. OUTLOOK ON THE UPCOMING MONTHS (CONT'D)

Montviel REE Deposit - Bench Scale

• Continue testwork, modeling, process design and optimization

Other Sources & Other Metals (REE, Lithium, Graphite, Hydrogen and other metals)

- R&D on different feeds (mining and industrial waste)
- Testwork to produce product for end users evaluation and technology compatibility 0

Corporate

Expand the operations team to accelerate the development on the various projects

4. EXPLORATION AND VALIDATION OF THE SEPARATION TECHNOLOGY ACTIVITIES

4.1 Expense summary - Montviel property

	Three months ended August 31	
Montviel Property	2022	2021
	\$	\$
Acquisition and maintenance	-	361
Exploration		
Share-based compensation	2,734	4,403
Supplies and tools	654	654
Taxes, permits and insurances	360	-
Total exploration	3,748	5,057
Evaluation		
Salaries and benefits – separation process	172,507	133,826
Separation process	57,212	52,134
Depreciation of property and equipment	2,185	6,651
Engineering	22,611	37,723
Total Evaluation	254,515	230,334
Gross E&E expenses	258,263	235,752
Government grants	(37,590)	(28,972)
Net tax credits	(443)	(65,323)
Net E&E expenses - Montviel	220,230	141,457

Alain Cayer, P. Geo., M.Sc., Vice-President Exploration of Geomega, a qualified person as defined in NI 43-101 supervised the preparation of the technical information in sections 4.1.

The Corporation owns 100% of the Montviel property, located approximately 100 km north of Lebel-sur-Quévillon and 45 km west of the Cree First Nation of Waswanipi. The Montviel property comprises 149 mining claims totalling 8,275 hectares as at August 31, 2021.

4.2 ISR Technology Development

Dr. Pouya Hajiani, process inventor, engineer and CTO of Geomega supervised and approved the technical information of this section.

Management Discussion & Analysis – Quarterly Highlights Three months ended August 31, 2022

4. EXPLORATION AND VALIDATION OF THE SEPARATION TECHNOLOGY ACTIVITIES (CONT'D)

Geomega develops innovative technologies for extraction and separation of rare earth elements and other critical metals essential for a sustainable future. With a focus on renewable energies, vehicle electrification, automation, reduction in greenhouse gas emissions and energy usage, rare earth magnets or neo-magnets (NdFeB) are at the center of all these technologies. Geomega's strategy revolves around gradually deriskingits innovative technology ("Innord Separation of Rare Earths (ISR Technology)") while working directly with the main players in these industries to recycle the magnets that power all those technologies. The Corporation completed a successful pilot scale-up in 2019 and had its material validated by potential end users for manufacturing of permanent magnets and has since focused on the next scale up of the technology to a demonstration plant. Geomega received from Hatch the required documentation to proceed to the next step of engineering and was working since August 2020 on completing its 2nd pilot plant to validate and confirm some of the changes that were completed to the technology since 2019. This validation work was successfully completed in January 2021.

Geomega is advancing towards the construction of the demonstration plant that will be using the ISR technology to recycle rare earth magnets and produce rare earth oxides. On October 1st, 2019, the Corporation published the results of the Front-End Engineering & Design ("FEED") study. The updated design has been scaled up in order to operate on a single work shift of 8 to 10 hours. As a result of this sizing increase and process optimization by Geomega, the demonstration plant could reach a throughput capacity of 1.5 ton per shift, a 50% increase over the initial design. On a per hour basis, this demonstrates a 4.5X increase.

The engineering work to date confirmed that the ISR process that was developed by Innord, a subsidiary of Geomega, is technically feasible and uses off the shelf equipment thereby making it easier to scale up.

In September 2020, the Corporation provided updated capital costs (including working capital) for the demonstration plant which increased from \$3.2M to \$4.8M. Although the equipment cost remains the same as what was presented in the FEED study, the Corporation revised upwards the estimate for plant construction and for the remaining cost of engineering.

The Corporation published the positive results of the pilot tests in January 2021 and an engineering update was provided in July 2021. Work was progressing by both external and inhouse engineers on detailed engineering. In fall 2021, the Corporation began hiring additional senior engineers in various disciplines to accelerate the current work and to become fully independent of external engineering firms for processing engineering. The deliverables of the ongoing detailed engineering and the information from the construction contractor were allowing the firm to start ordering the equipment.

In March 2022, the Corporation provided an update on the rare earths recycling demonstration plant located in Saint-Bruno-de-Montarville, Quebec.

With an expanded team of engineers since the end of 2021, Geomega has been able to advance on many aspects of the engineering work as described below:

Process design – The process flow diagrams (PFD), process control diagrams (PCDs), stream tables, utility list, process description, control philosophy and operation schedule (batch process) for the project were completed with minor changes expected to be integrated periodically as the project advances. The Piping & Instrumentation Diagrams (P&ID) were approximately at 50% completeness level providing sufficient support to start ordering equipment. Line sizing, instrumentation and control hardware selection was ongoing.

Management Discussion & Analysis – Quarterly Highlights Three months ended August 31, 2022

4. EXPLORATION AND VALIDATION OF THE SEPARATION TECHNOLOGY ACTIVITIES (CONT'D)

- Equipment and packages The engineering team completed the internal review of the equipment design, datasheets, and quotes. Updated quotes based on the latest datasheet modifications were requested from selected vendors. Detailed design work continues once purchase orders are submitted and complete technical specifications are received from suppliers.
- Layout An updated layout in 3D has been generated. More information is integrated with additional data received from vendors and once the line sizing is complete (see figure 1 below).



Figure 1: 3D layout of the REE recycling demonstration plant

In September 2022, additional information on the progress made was provided in the MD&A 2022:

- Pre-construction activities The Corporation was in discussions with service providers who will be handling the peripheral engineering design (civil and architectural, HVAC system, drain system designs, etc.), construction permitting, performing the safety related activities such as independent HAZID and HAZOP, and eventually contribute to construction and commissioning. The external service providers will be working along with the Corporation internal engineering team
- Complementary testwork Certain pilot testwork has been continuing internally and externally throughout the last 6 months focused on magnet crushing and solid handling. Various pilot equipment for this testwork continued to arrive at the Boucherville and Saint-Bruno-de-Montarville's facilities where testing was conducted. Furthermore, bench scale testwork has been performed intermittently to optimize the process and to improve final purity of the products. Relevant results have been integrated to the process. More testwork to support and adjust the design are performed as needed as the project advances.
- In May 2022, the Corporation has started ordering various equipment for the demonstration plant, finalized designs together with the vendors for the various equipment and has integrated all that information into the P&ID which have reached a level of approximately 75% completeness level. Safety studies have been completed for various sections of the plant while the valves and control system packages were nearing completion and will then be ordered. Procurement activities were continuing for the other remaining items.

Management Discussion & Analysis – Quarterly Highlights Three months ended August 31, 2022

4. EXPLORATION AND VALIDATION OF THE SEPARATION TECHNOLOGY ACTIVITIES (CONT'D)

4.3 Environmental Geochemistry

Several environmental studies are underway on Montviel. These are long-term studies with repetitive sampling.

4.4 Preliminary Economic Assessment ("PEA")

The corporate commitment to sustainable development dictated the following operational parameters for the Montviel project: i) underground mining scenario with paste backfill, ii) reduction in reagents to be transported by road and iii) electrical operations with a low voltage power line. It has taken more than three and a half years of metallurgical work and optimization to meet these three parameters.

In 2015, Montviel's flow sheet was greatly simplified. All of the acid required for hydrometallurgy was to be generated on site with the insertion of a closed loop acid regeneration unit. In addition, two physical processes at the beneficiation step significantly decreased the ore mass moving to hydrometallurgy.

The Corporation continues to evaluate the rare earth market and believes that the Montviel deposit, with the largest bastnaesite type mineralization 43-101 resource estimate in North America, could demonstrate solid economics based on its proprietary technology even at current market pricing.

The Corporation continues to gradually optimize and improve the flow sheet. With the additional funding from the MERN and the private placement announced on February 9, 2022, a project was started to improve on the technology that was developed and patented in 2015 (see news releases from April 29, 2015, May 20, 2015 and June 11, 2020) by incorporating the knowledge and experience gained from developing the rare earth recycling project and the bauxite residues project since then.

The main technical objectives to be investigated in this project are:

- Eliminating the flotation circuit
- Valorization of the iron by-product
- Recycling of the main leaching reagents

The successful implementation of these objectives would simplify the process of extracting rare earths and niobium and could significantly reduce its operating costs. The economic benefits of this project include:

- Cost reduction of the chemical reagents
- Energy savings by avoiding very fine grinding that is required for flotation, solid heat recovery and other adjustments
- Improving total REE recovery through whole ore leaching
- Reduction of mining waste and tailings management costs
- Increase of potential revenues through various by-products

Furthermore, the social and environmental impacts of the project are similarly important and will help obtain the required permits in the future and support of the local communities and the Waswanipi CREE First Nation. The environmental benefits of this project include:

- Reduction of water consumption
- Reduction of liquid effluents
- Reduction of solid mining waste volumes
- Reduction of overall energy consumption and greenhouse gas emissions for REE production compared to previous flowsheet
- Further evaluation of the possibility of paste-backfill

These modifications keep improving the process and making the Montviel project more economically robust, less sensitive to REO price fluctuations and more environmentally friendly by closing the processing loop. The results of the project will be used to complete a Preliminary Economic Assessment (PEA) on the Montviel deposit.

Management Discussion & Analysis – Quarterly Highlights Three months ended August 31, 2022

4. EXPLORATION AND VALIDATION OF THE SEPARATION TECHNOLOGY ACTIVITIES (CONT'D)

4.5 Treatment of bauxite residues

Large quantities of this caustic red mud are generated worldwide every year, posing environmental and safety challenges. Storage of bauxite residues is a challenge for alumina refineries with over 80 plants across the world currently producing alumina from bauxite ore. It is estimated that over 1.5 million tonnes of bauxite residues are generated every year and as the demand for aluminum metal increases so does the production of bauxite residues. As a result of population growth, many of these plants are now located inside urban areas resulting in storage space limitations and increasing environmental regulations that threaten these operations. Closure of these alumina refineries could result in the loss of thousands of jobs and millions of dollars of economic benefits for these regions. With over 4 billion tonnes of BR stored in tailings globally, this feed material represents potential \$400B in metal value that could be unlocked using Innord's technology.

Geomega believes that BR is a perfect fit to expand Innord's extraction technology. Drawing from the strengths and versatility of its technology, Innord had been seeking to identify large industrial and mining waste challenges with the following characteristics:

- High iron (Fe) content in BR >40% Fe₂O₃
- Loss of critical and strategic metals in the tailings (rare earth elements, scandium, titanium and vanadium)
- Need for reagents recycling and tailings volume reduction

Ownership of the Intellectual Property developed by Innord through this research work will remain with the Corporation. With BR representing a global challenge, Innord is developing the technology with the objective to make it available globally through a licensing / royalty structure once the technology has demonstrated its economical and environmental feasibility on a larger scale.

In parallel to the BR technology, Rio Tinto and Innord have agreed to begin evaluating in parallel various opportunities to monetize the iron compounds produced by Innord's Bauxite Residues Technology (IBRT). As part of the project, over the next 12 months, Innord has committed to develop and test an extension technology to IBRT to produce the desired product that will then be evaluated by Rio Tinto. The Intellectual property developed from this project extension will be owned by Rio Tinto who is fully funding the project. Innord will receive a royalty payment for the underlying base technology (IBRT) upon commercialization of the technology and any production of commercial products. Details of the agreement between Geomega and Rio Tinto, including the royalty level, will remain confidential.

Relative to existing methods (less than 5% of global BR is being used today) and contrary to previously developed metallurgical approaches that either only displace the environmental impact towards effluents and/or other residues, provide insufficient volume reduction or have limited economic viability, Innord's process potential offers the following benefits:

- Significant tailings volume reduction (>80%)
- Minimize effluents by recycling the main reagents, which would in turn reduce operating costs and avoid creating other waste streams
- Value maximization of the available metals, thereby enhancing the economics of the process, which include:
 - Bulk traditional metals such as AI and Fe
 - Strategic metal concentrates (REE, Sc, Ti, V)

Management Discussion & Analysis – Quarterly Highlights Three months ended August 31, 2022

4. EXPLORATION AND VALIDATION OF THE SEPARATION TECHNOLOGY ACTIVITIES (CONT'D)

The up to 24-month pilot project is to demonstrate the scalability of the technology while testing and validating various technical parameters before completing a feasibility study.

October 26, 2022

<u>(s) Kiril Mugerman</u> Kiril Mugerman President and CEO <u>(s) Mathieu Bourdeau</u> Mathieu Bourdeau CFO

Management Discussion & Analysis- Quarterly Highlights Three months ended August 31 2021

Management

Kiril Mugerman, President & CEO Alain Cayer, VP Exploration Mathieu Bourdeau, CFO Pouya Hajiani, CTO

Board of directors

Gilles Gingras, President of the Audit Committee ¹⁾ Kosta Kostic Matt Silvestro ¹⁾ Nick Nickoletopoulos ¹⁾ Kiril Mugerman

Notes: 1) Member of the Audit Committee

Head office

75 boul. de Mortagne Boucherville (Quebec) J4B 6Y4 Tel.: (450) 641-5119 Website: https://ressourcesgeomega.ca

<u>Lawyers</u>

Fasken Martineau DuMoulin S.E.N.C.R.L., s.r.l. 800, rue du Square-Victoria, bureau 3500 Montréal, Québec H4Z 1E9

Auditors

MNP s.r.l. 1155, boul. René-Lévesque O., 23^e étage Montréal (Quebec) H3B 2K2

Transfer agents

Computershare Inc. 1500, rue Robert-Bourassa, bureau 700 Montréal (Quebec) H3A 3S8 Tel.: (514) 982-7888