

RESPONSES TO QUESTIONS FOR THE RECORD
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HEARING OF THE HOUSE NATURAL RESOURCES COMMITTEE
SUBCOMMITTEE ON ENERGY AND MINERAL RESOURCES
DEEP DIVE: EXAMINING THE REGULATORY AND STATUTORY BARRIERS TO DEEP SEA MINING
Hearing Held January 22, 2026

Questions from Rep. Fulcher

1. What are some of the largest regulatory burdens you anticipate as you look to move forward with mining?

DSHMRA and its implementing regulations provide a credible, predictable path forward towards commercial mining in the high seas. Uncertainty in permitting timelines was our main concern when entering into the application review process; Executive Order 14285 and subsequent actions by NOAA to consolidate exploration license and commercial recovery permits has illustrated the United States' prioritization of deep seabed critical minerals, and commitment to streamlining permitting thereof.

As noted by NOAA, significant technological and information changes since promulgation of the initial regulations in the 1980s have occurred; the Administrator can address these developments through DSHMRA's implementing regulations, however, the modernization of DSHMRA to present day may be beneficial.

2. What are some of the biggest logistic hurdles to deep-sea mining?

The remote location of polymetallic nodules in the Clarion Clipperton Zone presents some logistical challenges – namely, there is no habitable land or permanent facilities in the Project area. It follows that all operations are contingent on marine infrastructure / vessel availability. In TMC USA's case, it is expected that the mining vessel will remain in continuous operation while transfer vessels offload nodules and bulk carriers transport to shore. Under DSHMRA, all mining vessels and at least one transport vessel must be U.S. flagged, which will create up front and operational premiums versus foreign flagged vessels. TMC has conducted an internal assessment to quantify the incremental cost impacts associated with U.S.-flagging relative to current foreign-flag operation using 2025 market conditions, finding significant cost premiums driven primarily by crew, regulatory and compliance requirements. Time must also be allowed to complete the re-flagging process. As the industry matures, demand for U.S. flagged vessels will increase while current supply is limited; it is anticipated that deep seabed mining will drive growth for U.S. flagged commercial vessels where today U.S.-flagged vessels represent a small fraction of the global commercial fleet.¹

On the other hand, the location of the deep seabed nodule field also presents several advantages. The region is well located to ship nodules to the American continent as it is located off the U.S. Western coastline, is located far away from any human communities, limiting impacts to people and their lands, and the lack of fixed infrastructure required to extract nodules and ability to lift and transport nodules to shore provides operators with unique location optionality for mineral processing along with significant potential environmental and social impact benefits.

¹ [hudson.org/national-security-defense/rewriting-future-america-maritime-industry-compete-china-michael-roberts](https://www.hudson.org/national-security-defense/rewriting-future-america-maritime-industry-compete-china-michael-roberts)

Questions from Rep. Daniel Webster (FL-11)

1. I represent Florida, and while we don't have polymetallic nodule deposits off our own coastline, Floridians depend every day on the critical minerals those nodules contain. We use them for everything from energy systems and transportation infrastructure to the spaceships we launch at the Kennedy Space Center. How would responsible deep-sea mining help secure supply chains and lower the cost of living for the Floridians I represent?

As noted, the critical metals contained in polymetallic nodules underpin American manufacturing, energy, infrastructure, aerospace and defense systems. The responsible development of nodule resources and reshoring of mineral processing to the United States can remove material constraints to support Floridian, and broader American, industries. For example, the United States is 100% import-reliant for its primary supply of nickel, cobalt and manganese, and 46% import dependent for its primary supply of copper. China is the leading processor of the global supply of these metals (>90% of manganese, >70% of cobalt, >60% of nickel including Chinese-controlled operations in Indonesia), and >40% of copper).² Polymetallic nodules are the only high-grade, abundant, scalable and cost competitive supply of these metals that can diversify American supply chains away from adversarial control. Reshoring critical mineral supply and processing of nodules to the United States can serve to secure supply chains and ultimately lower costs for these materials.

2. Being from Florida, I have a unique appreciation for preserving marine ecosystems. What lengths has your company gone to in an effort to minimize the environmental impacts of nodule collecting?

TMC and its affiliates have invested hundreds of millions of dollars in independent research to characterize the deep sea ecosystem in the Clarion Clipperton Zone, define the environmental baseline and quantify in-field impacts from nodule mining. The company has undertaken one of the most comprehensive deep sea research programs in history, spending around \$250 million on environmental research over a 15-year period. This program has involved the world's leading research institutions, delivered hundreds of studies and culminated in the ongoing publication of research findings in peer-reviewed scientific papers.³ Research partners have spanned major American universities (Eckerd College, Universities of Hawaii, Maryland, Texas A&M, etc.) and environmental consultants such as CSA Ocean Sciences, Inc., located in Stuart, Florida.

Part of our environmental baseline studies included the monitoring of our 2022 test mining program, which allowed us to observe the impacts of our nodule collection system. Based on these observations, we are modifying the commercial nodule collection system to further reduce impacts by increasing the depth of the return water from 1,000m to 2,000m to avoid any potential impact to commercial fisheries.

Questions from Rep. King-Hinds

1. Under federal case law, NEPA requires that environmental analysis be conducted at a stage when effects remain uncertain, because delaying review until impacts are fully known would undermine the statute's purpose. Given the substantial uncertainty surrounding the environmental and socioeconomic consequences of deep-sea mineral development in the waters offshore my district, the CNMI, do you agree that any future decision to offer mineral leases arising from this process should additionally be preceded by a properly scoped Environmental Impact Statement, rather than just an Environmental Assessment?

² Critical Minerals Market Review, IEA, 2023; Mineral Commodity Summaries, U.S. Geological Survey, 2025; S&P Global Commodity Insights, 2023.

³ [metals.co/research/](https://www.metals.co/research/)

Under DSHMRA, NEPA-compliant Environmental Impact Statements are required for all phases of a nodule project, from exploration to commercial recovery. TMC USA has submitted applications to NOAA for exploration and commercial recovery of deep seabed mineral resources located in international waters. The Deep Seabed Hard Mineral Resources Act (DSHMRA) and its implementing regulations which govern these potential activities include the requirement for NEPA-compliant Environmental Impact Statements (EISs) for both exploration license and commercial recovery permit issuance. NOAA published its Policy and Procedures for Compliance with NEPA and Related Authorities on June 30, 2025.⁴

Why have you expressed interest in mining in the waters offshore the Pacific territories and not the Blake Plateau offshore Georgia and South Carolina, where there are also known deposits of minerals and where scientists are still observing the effects of mining tests conducted 50 years ago?

TMC USA has focused on the Clarion Clipperton Zone because it is well established as the area of most economic interest for polymetallic nodules based on relative abundance and grades of multiple critical metals.⁵ There is little data available for the quality of Blake Plateau nodules. The sparse data available indicate they are manganese-rich ferromanganese pavements/nodules with trace to low nickel and cobalt, and they have not been demonstrated publicly to reach the ~1–1.5% Ni and ~0.2–0.25% Co typical of CCZ “mineable” nodules.

We also note that the mining tests that were performed on the Blake Plateau 50 years ago were performed using materially different technology with an impact profile that is quite different to the technology we have developed and tested in 2022.⁷

2. Have you expressed formal interest to BOEM for the CNMI RFI zone?

No.

3. If awarded a lease for the CNMI RFI area, do you plan to apply for additional mining rights in adjacent areas outside the EEZ in international waters?

TMC USA has not pursued any mineral leases in this area.

4. Would you support (in principle) legislation that would require the federal government to share revenues from offshore mining operations with local coastal jurisdictions like the CNMI, similar to the revenue sharing arrangements already established under law for Gulf states under the Gulf of Mexico Energy Security Act, also known as GOMESA?

We believe that you must differentiate offshore mineral projects operating in the high seas under legal authority of the Department of Commerce and NOAA from offshore mineral projects operating in U.S. waters under legal authority of the Department of Interior and BOEM. Commercial recovery of seabed minerals from the high seas as regulated by NOAA will not operate as leases and project areas will have no geographical ties to U.S. states or territories as they are located in international waters.

Additionally, TMC has enjoyed long tenured relationships with the Pacific Island nations of Nauru and Tonga, with which TMC subsidiaries hold sponsorship agreements which ensure these countries will receive benefits from any future development of seafloor mineral resources.

⁴ noaa.gov/sites/default/files/2025-06/2025NOAANEPAProcedures.pdf

⁵ usgs.gov/publications/deep-ocean-polymetallic-nodules-and-cobalt-rich-ferromanganese-crusts-global-ocean-new;

Questions from Rep. Moylan

With current technologies, do you think it is feasible for small islands, like Guam, to become critical mineral refinement centers for polymetallic nodules collected in the Pacific?

TMC USA has not assessed Guam specifically for nodule processing. TMC's assessments of nodule mineral processing have identified access to abundant and cost competitive power and other consumables particularly fresh water, are crucial to project economics; small islands are not typically ideal candidates for locating processing infrastructure given these requirements, local infrastructure and workforce constraints.

Nevertheless, TMC USA envisions that Pacific Island states can participate through offshore operations and capacity building.

1. In what States or U.S. Territories is The Metals Company exploring investment or partnership opportunities for nodule processing?

If critical mineral refinement centers are not built in Guam or other U.S. Territories, what is the actual economic benefit of deep-sea mining for our communities? How many jobs will deep sea mining bring to communities in the U.S. Territories specifically and what is the salary range for those employed by deep sea mining operations?

TMC USA is examining the potential of the Gulf Coast region for nodule mineral processing and refining, but any potential processing or refining plans are contingent upon feasibility work and government support at the federal and state levels.

Offshore operations are also expected to create hundreds of jobs including crew for mining, transfer and transport vessels.

Beyond direct operations, the mid and downstream industry enabled by deep seabed mineral supply into the United States cannot be understated; the development of 1 billion tons of nodules over 20 years (less than the amount of resource estimated to be contained in TMC USA's application areas alone) could generate over 100,000 American jobs and \$300 billion in GDP.⁶

2. The Metals Company has claimed that its seabed collector systems create less sediment and water column disturbance. However, the system still would effectively "vacuum" nodules and sediment off of the seabed floor, which can disrupt ecosystems. Deep sea experts have pointed out that corals exist on the floor among some nodules and that a species of octopus lays eggs on nodules. What steps will The Metals Company take to ensure that deep sea mining operations does not interrupt seabed ecosystems and breeding environments?

TMC and its affiliates have invested hundreds of millions of dollars in independent research over the last decade to develop a comprehensive environmental baseline of the area in the CCZ targeted for mining - from seafloor to surface - making this area one of the most well documented deep-sea regions on the planet. This program has involved the world's leading research institutions, delivered hundreds of studies and culminated in the ongoing publication of research findings in peer-reviewed scientific papers. In addition, it is important to note that at planned levels of development, it is estimated that only about 0.2% of the global seafloor will be mined for nodules over the next 30 years.⁷

More specifically, MIT among other researchers have found that over 95% of the sediment stirred

⁶ [congress.gov/119/meeting/house/118089/witnesses/HHRG-119-II15-Wstate-BarronG-20250429.pdf](https://www.congress.gov/119/meeting/house/118089/witnesses/HHRG-119-II15-Wstate-BarronG-20250429.pdf)

⁷ [metals.co/how-much-seafloor-will-the-nodule-collection-industry-impact/](https://www.metals.co/how-much-seafloor-will-the-nodule-collection-industry-impact/)

up by the collector resettles within just 1-2 km, because at these depths sediment particles stick together, settling rapidly.⁸ Moreover, the latest study on ecosystem recovery published by researchers from Natural History Museum London and MIT in 2025, observed full recovery of microscopic organisms in both track and plume areas, 44 years after they were disturbed by far more impactful equipment than is planned for use today.⁹ Our system has already demonstrated a much lower impact footprint than earlier tests, and we've documented faster recovery rates for similar microscopic organisms—reaching 30% of pre-disturbance density and 50% of diversity within just one year.

We are currently in discussions with Rep. Moylan's office to schedule a virtual meeting to review these environmental impact findings in more detail.

3. Technologies like autonomous underwater vehicles and submersible robotics that use “pick and place” arms may result in even less disruption. Why is The Metals Company pursuing seabed collectors for use rather than AUVs?

Proposed ‘selective pickup’ of nodules with robotic arms has not been proven – not at pilot scale, not in an actual deep sea environment, and not with actual nodules. Serious concerns about technical feasibility, relative costs and actual relative benefits remain (e.g., only harvesting 5-10% of nodules and avoiding nodules with organisms visible to naked eye, whereas the majority of organisms living on nodules are microscopic). The bar for claims relating to technological capabilities, economic viability and environmental benefits is much higher for publicly listed companies such as TMC. Related SEC Regulation S-K Subpart 1300 mining property disclosures and third party verified life cycle assessments are available for TMC's projects, selected collection systems and processing methodologies.¹⁰

TMC will continually evaluate new technology and processes that cause the least impact to the environment; if in the future new systems are demonstrated to be commercially viable we will consider them.

4. Using your best estimates, what would be the timelines for TMC or Impossible Metals to actually stand up commercial-scale operations in the Pacific and how long would it take for these to be profitable?

I can only comment on TMC USA operations; the company has publicly stated its estimated start of offshore commercial operations as Q4 2027.¹¹ Project economics are detailed in our public prefeasibility study (PFS).¹²

5. Guam's unified response to deep sea mining has a common underlying current across every resolution, petition, and letter: the actions taken so far have been without the prior consultation or consent of our people. How is The Metals Company engaging local communities in Guam, the Northern Mariana Islands, and American Samoa about deep sea mining?

TMC USA's application areas are in international waters. To contextualize this relative to the locations of these nations and their Peoples, the midpoint of the Clarion Clipperton Zone sits

⁸ metals.co/mining-the-facts/

⁹ [nature.com/articles/s41586-025-08921-3](https://www.nature.com/articles/s41586-025-08921-3)

¹⁰ sec.gov/Archives/edgar/data/1798562/000110465925073349/tm2521867d1_ex96-1.htm;
metals.co/bmi-lca-report/

¹¹ sec.gov/Archives/edgar/data/1798562/000141057825001821/tmc-20250630x10q.htm;
sec.gov/Archives/edgar/data/1798562/000110465925078582/tm2523537d1_ex99-1.htm; investors.metals.co/static-files/368039db-0aa1-49e9-9f64-e359ef0eb9a9

¹² sec.gov/Archives/edgar/data/1798562/000110465925073349/tm2521867d1_ex96-1.htm

approximately 4,500 nautical miles from Guam, 3,000 nautical miles from the Marshall Islands, and 2,500 nautical miles from American Samoa. This is similar to the distance between Honolulu and Tokyo, or Los Angeles to the Panama Canal. TMC USA's exploration applications, and corresponding planned activities, have been posted to the Federal Register, underwent public hearings and are currently in an active public comment period through February 23, 2026.¹³

TMC USA's applications will follow the NOAA approval process which provides multiple opportunities for the public to review and engage on our applications.

6. In Mr. Gunasekara's opening testimony, he mentioned that the People's Republic of China's (PRC's) technology simply vacuums the seafloor and is environmentally damaging. This statement seems to indicate that similar technologies using the Coanda effect or vacuums are also environmentally damaging. What, if any, meaningful difference exists between the PRC's technology and the system proposed by The Metals Company? Why should the people of Guam or any other district in the U.S. feel more comfortable with an American vacuum system over the same technologies used by the PRC?

Coanda nozzle systems have been selected for TMC USA's collector system based on their ability to optimize nodule collection efficiency while minimizing sediment intake and seafloor impact.¹⁴ Studies conducted by TMC and MIT have confirmed that the conjecture around the damaging impacts of the sediment plume are largely unfounded.¹⁵ For this, among other reasons, this technology has been adopted by leading deep-seabed nodule developers.

Guam and any other district should take comfort in the fact that the United States – not China or a Chinese controlled international regulator - will be the first country to regulate commercial recovery of deep seabed minerals in the high seas, the technologies used to do so and associated impacts on the marine environment.

7. Throughout the hearing, we discussed the risk of mining critical minerals on land, particularly the fact that it can and has permanently damaged and significantly disrupted ecosystems. By simply moving critical mineral mining operations underwater, are we just hiding the environmental problems in another ecosystem?

Extensive third-party research has illustrated that deep seabed nodules offer a lower impact, alternative supply of critical minerals.¹⁶

8. During the hearing, Mr. Huffman brought up an important point: the U.S. is not a party to the UN Convention on the Law of the Sea (UNCLOS) or a full member of the International Seabed Authority (ISA). Effectively, this means that we are outside of the international permitting regime for deep sea mining. The PRCS has, in the past, simply utilized their distant water fishing fleet and other state subsidized or owned vessels to force other nations out of areas that the PRC is interested in controlling. Without sole-jurisdiction permitting from the ISA or the signatory guarantees of UNCLOS, we would have no recourse in the international systems to fight those actions if they were to occur. If the U.S. were to issue leases in waters beyond national

¹³ [federalregister.gov/documents/2025/12/23/2025-23795/deep-seabed-mining-notice-of-receipt-of-applications-for-deep-seabed-mining-exploration-licenses-and](https://www.federalregister.gov/documents/2025/12/23/2025-23795/deep-seabed-mining-notice-of-receipt-of-applications-for-deep-seabed-mining-exploration-licenses-and)

¹⁴ [youtube.com/watch?v=sb1dXUzriIw](https://www.youtube.com/watch?v=sb1dXUzriIw)

¹⁵ news.mit.edu/2022/sediment-deep-sea-mining-0921

¹⁶ [sciencedirect.com/science/article/pii/S0959652620338671?via%3Dihub](https://www.sciencedirect.com/science/article/pii/S0959652620338671?via%3Dihub); [sciencedirect.com/science/article/pii/S0959652621040543?via%3Dihub](https://www.sciencedirect.com/science/article/pii/S0959652621040543?via%3Dihub); [metals.co/bmi-lca-report/](https://www.metals.co/bmi-lca-report/); [metals.co/wp-content/uploads/2025/09/Ecoquant_TMC_ComprativeLCA_August2025-1.pdf#:~:text=This%20report%20was%20prepared%20by%20Ecoquant%20\(t/a,Metals%20Company%20\(TM C\)%20for%20the%20purpose%20of](https://www.metals.co/wp-content/uploads/2025/09/Ecoquant_TMC_ComprativeLCA_August2025-1.pdf#:~:text=This%20report%20was%20prepared%20by%20Ecoquant%20(t/a,Metals%20Company%20(TM C)%20for%20the%20purpose%20of)

jurisdiction, what would ensure that we would have sole access to those spaces?

U.S. regulations for deep seabed mineral exploration in international waters predates UNCLOS and the formation of the International Seabed Authority (ISA); primarily due to the seabed mining provisions in UNCLOS, the U.S. has remained a 'persistent objector' and the Senate has never ratified the treaty. In this manner, exploration and commercial recovery of seabed minerals in international waters remains a high seas freedom to the United States.

As noted, despite having ratified UNCLOS and being a Member of the ISA, the PRC has acted outside of its obligations to the Treaty and customary international law including ignoring rulings on its activities by international tribunal.¹⁷ Together with its inability to adopt a Mining Code, these realities call into question the ability for the ISA to issue or enforce regulations, as well as provide consequences to bad actors.

Questions from Rep. Huffman

Mr. Barron, you stated that The Metals Company is prepared to start commercial extraction in 2027 and that you plan to use US-flagged vessels for your commercial operations. Please name the vessel(s) and vessel owners with whom you have contracted or plan to contract with for operations in 2027.

TMC USA's offshore operations are planned to begin utilizing the converted drillship *Hidden Gem*, owned by our long-term partner, Allseas. DSHMRA requires that all mining ships and at least one of the transport ships used by each permittee be documented under the laws of the United States; accordingly, the *Hidden Gem* will be reflagged to the United States.

1. Mr. Barron, you stated that you are "exploring processing [your] materials in Japan." Japan is a party to the U.N. Convention on the Law of the Sea (UNCLOS) and a member state of the International Seabed Authority (ISA). Per Article 137(3) of UNCLOS, State Parties have "a duty not to recognize any claim, acquisition, or exercise of rights over minerals recovered from the Area by any State or by any natural or juridical person, unless conducted in accordance with Part XI of UNCLOS". Please provide your analysis of how minerals extracted from the Area without a commercial recovery permit may be legally processed in a country party to UNCLOS.

As noted in my testimony, TMC is actively focused on establishing processing and refining capacity on U.S. soil, contingent on U.S. government support at the federal and state levels. The company's current planning and engagement with the Administration are directed toward domestic processing in order to strengthen U.S. supply chains, reduce reliance on foreign processing, and ensure full alignment with U.S. regulatory and national security objectives.

Article 137(3) of UNCLOS is narrow in scope; it prohibits the claim, acquisition or exercise of rights with respect to the physical minerals recovered from international waters by UNCLOS States Parties outside of the Part XI framework. It does not extend to the provision of services to non-Member State Parties.

2. You have also indicated that TMC is working together with Allseas, which is headquartered in the Switzerland and has its engineering and project offices in the Netherlands, both parties to UNCLOS and member States of the ISA. UNCLOS Article 139(1) provides that "States Parties shall have the responsibility to ensure that activities in the Area, whether carried out by States Parties, or state enterprises or natural or juridical persons which possess the nationality of States

¹⁷ [npr.org/sections/thetwo-way/2016/07/12/485666758/beijings-claims-to-south-china-sea-are-invalid-international-tribunal-says](https://www.npr.org/sections/thetwo-way/2016/07/12/485666758/beijings-claims-to-south-china-sea-are-invalid-international-tribunal-says)

Parties or are effectively controlled by them or their nationals, shall be carried out in conformity with this Part." Please provide your analysis of how TMC can partner with entities based in countries that are party to UNCLOS.

As noted in my testimony, TMC's planned operations are structured around U.S. permitting, U.S. flag requirements, and U.S.-based processing. The company is pursuing a U.S.-centric development model to ensure that both operational control and value creation remain within the United States.

3. Please provide a dated list of every meeting you have had with the Department of Commerce and NOAA regarding deep sea mining. Please also provide the topics discussed, including but not limited to changes to DSHMRA regulations.

TMC USA has engaged with the Department of Commerce and NOAA in the ordinary course of regulatory consultations, consistent with standard practice for applicants under federal permitting regimes. These engagements have included introductory briefings, clarification of regulatory processes, procedural questions regarding application requirements, and discussions related to publicly noticed rulemakings.

4. Please provide a general description of any materials redacted from TMC's applications for deep seabed mining exploration licenses.

Redactions in TMC USA's applications were limited and made in accordance with DSHMRA and NOAA's regulations governing confidential and proprietary information. These include commercially sensitive business information.

The redactions do not obscure information necessary for environmental review, public participation, or agency decision making. NOAA independently reviews all redactions and determines whether information qualifies for confidential treatment under applicable law.

5. Have you communicated to NOAA or another federal agency, formally or informally, additional priority areas for mapping seabed resources outside of your leasing application?

No; I would also clarify that our applications are for exploration license and commercial recovery permits and are not considered 'leases.'

6. In The Metals Company's press release about TMC USA's consolidated deep-seabed mining application, TMC states "the Company's test mining and recovery data [...] demonstrates that both benthic biodiversity and sediment plume impacts are confined to the directly mined area." Please elaborate on:

- a. how TMC USA defines the directly mined area, as O'Malley et. al (2025) states that scientists detected evidence of sediment plumes ("elevated ²³⁴Thxs activities") within 1 – 2 km of the mining collector tracks;

Tracking of the plume during test mining demonstrated that over 95% of the benthic sediment settles within 1-2 kms of the directly mined areas. This observation has also been made by researchers at MIT.¹² This is a significantly different picture than that painted by opposition groups who claim that the plume would spread for 1,000's of kilometers from the mining site.¹⁸

¹⁸ dsm-campaign.org/blue-peril/

- b. any research TMC has or plans to conduct on deep sea mining operations' impacts on midwater organisms and food webs or the connections between benthic ecosystems disturbed by mining and ocean processes;

This work has been completed by the Commonwealth Scientific and Industrial Research Organization (CSIRO) and the following reports are available on their website:

Hyman, J., Dunstan, P., Clark, M., Connolly, R., Fulton, E., Hosack, G., ... & Dambacher, J. (2025). Integrated assessment identifies pathways for effects of deep-sea nodule mining across ocean and seafloor ecosystems.¹⁹

Pethybridge H, Fulton EA, Parr JM, Dunston PK, Rowden AA, Dambacher JM. 2025. Modelling ecological impacts of metal bioaccumulation from mid-water plume discharges. CSIRO Marine Laboratories, Hobart.²⁰

- c. if TMC has or will conduct research to understand the cumulative impacts of mining and sedimentation on deep sea;

Impact Reference Zones and Reference (control) Areas will be continuously monitored throughout the life of the mining site. This will include ongoing investigations to cumulative impacts and sedimentation.

- d. the timescales of the environmental baseline research sponsored by TMC and how that compares to the timescale of the proposed mining operations.

TMC USA's anticipated life of mine for the area under our August 2025 pre-feasibility study is 18 years. TMC and its affiliates' deep seabed seafloor to surface environment program has spanned 15 years. Site specific environmental studies in TMC's program have been conducted over the past 6 years. Importantly, TMCs environmental program is the first to sample on a seasonal basis which has enabled us to resolve intra-annual variation in organic matter availability and subsequent benthic community dynamics. A key finding of this work is that the intra-annual variation signals appear to be stronger than the inter-annual signals (e.g., seasonality is more important than annual variations). This key finding is currently being written up for peer review.

We presume this question is intended to address the duration of mining impact monitoring to ecosystem recovery; as noted above, legacy domestic test mining was performed using materially different technology with an impact profile that is quite different to the technology we have developed and tested in 2022 and revisited in 2023. The latest study, published by researchers from Natural History Museum London and MIT in 2025, observed full recovery of microscopic organisms in both track and plume areas, 44 years after they were disturbed by far more impactful equipment than is planned for use today.²¹ Our collection system has already demonstrated a much lower impact footprint than earlier tests, and we've documented faster recovery rates for similar microscopic organisms—reaching 30% of pre-disturbance density and 50% of diversity within just one year.⁶

After a decade of research and 22 campaigns to our proposed mining area, TMC has compiled a summary addressing the six main environmental concerns for deep seabed nodule mining.⁷ Beyond the hundreds of millions of dollars TMC has invested in

¹⁹ assets-eu.researchsquare.com/files/rs-6631838/v1_covered_f258d356-9699-43b2-9265-34b03b28503b.pdf?c=1770718318

²⁰ research.csiro.au/dsm/wp-content/uploads/sites/569/2025/07/CSIRO-dsm-pelagic-Ecotracer-modelling.pdf

²¹ nature.com/articles/s41586-025-08921-3

independent research, TMC has contributed - alongside over 40 marine mineral developers, financial institutions, science institutions, and NGOs - to a 2-year, iterative process to develop the Marine Minerals ESG Handbook. The group has developed the first edition of an ESG disclosure framework for the marine minerals industry. Material ESG topics for the industry have been identified and disclosure metrics have been defined.

7. You stated during the hearing that TMC is “currently talking to the administration about what they could do to help us fast track the establishment of [processing] on USA soil.” What specific processing possibilities have you discussed with the administration? Have you identified specific partners to develop processing in the United States, and if so, who and where? What is the timeline for development of processing capacity and how does that align with your plans to begin commercial extraction in 2027?

TMC USA has been evaluating potential U.S. sites for its processing and refining facilities for years. I cannot comment further past publicly disclosed information which has highlighted potential development sites on the coast of the Gulf of America, most likely in Texas.

8. A map included in a TMC press release announcing its "Consolidated Deep-Seabed Mining Application" appears to show that the application for commercial recovery covers areas in which TMC has not completed exploration. Please describe any exploration undertaken or planned in areas TMC-A-B and TMC-A-C to support TMC's application for a commercial recovery permit in those areas.

TMC USA’s consolidated application will detail this information and will be released for public review and comment as part of NOAA’s review process.