

TESTIMONY OF DR. RUARRI J. DAY-STIRRAT
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BEFORE THE
SUBCOMMITTEE ON ENERGY AND MINERAL RESOURCES
COMMITTEE ON NATURAL RESOURCES
U.S. HOUSE OF REPRESENTATIVES

REGARDING H.R. 9640
THE EARTH MRI REAUTHORIZATION ACT OF 2026

July 21, 2026

Chairman Stauber, Ranking Member Ansari, and Members of the Subcommittee:

Thank you for the opportunity to submit testimony regarding H.R. 9640, the Earth MRI Reauthorization Act of 2026.

My name is Dr. Ruarri J. Day-Stirrat. I serve as President of the Association of American State Geologists and as State Geologist and Director of the Oregon Department of Geology & Mineral Industries. I submit this testimony on behalf of the nation's State Geological Surveys.

The Association of American State Geologists (AASG) strongly supports the reauthorization of the U.S. Geological Survey's Earth Mapping Resources Initiative, commonly known as Earth MRI. We also support the bill's recognition of modern sensing and analytical technologies and its expansion of the program to improve the characterization of geothermal, natural hydrogen, and other subsurface resource systems.

Earth MRI is a successful Federal-State partnership that addresses a fundamental national need: the United States cannot reasonably develop resources that it does not understand.

The initial Earth MRI investment has produced substantial progress, but the national work remains incomplete. Authorized appropriations must match the program's role in critical-mineral security, energy dominance, and global competitiveness.

We therefore respectfully recommend that Congress:

1. Reauthorize Earth MRI;
2. Retain the bill's proposed inclusion of modern sensing technologies, advanced geochemical methods, geothermal resources, natural hydrogen, and integrated subsurface-resource analysis;
3. Authorize not less than \$320 million for fiscal years 2027 through 2031, maintaining at least the nominal total annual funding level previously provided and ensuring that the program's expanded responsibilities and adoption of new technologies do not come at the expense of core geological mapping, existing Earth MRI priorities, or partnerships with State Geological Surveys; and
4. Preserve and strengthen cooperative agreements with State Geological Surveys as a central component of Earth MRI implementation.

EARTH MRI PROVIDES FOUNDATIONAL NATIONAL INFRASTRUCTURE

Before mineral resources can be developed, private capital invested, or permitting decisions made efficiently, reliable geological information must be available.

The United States has become increasingly dependent on foreign sources of minerals necessary for manufacturing, communications, transportation, energy systems, infrastructure, and national defense. At the same time, substantial portions of the country have not been investigated using modern geological, geophysical, geochemical, hyperspectral, and other remote-sensing methods.

Earth MRI addresses this information deficit.

Earth MRI supports the collection, integration, interpretation, and public distribution of foundational geoscience data. By combining geological mapping, geophysical surveys, geochemical information, elevation and hydrographic data, historical records, and other sources, the program gives governments, communities, Tribal Nations, land managers, universities, and private industry a shared and more complete understanding of the Nation's subsurface resources.

Earth MRI produces precompetitive public data rather than directing investment toward a particular company or project. Like topographic maps, weather observations, and stream-gauge records, geological information is public infrastructure: it reduces duplication, lowers exploration cost and risk, and improves both public and private decisions.

New sensing technologies add the greatest value when integrated with geological mapping, field verification, geochemistry, historical records, and other information needed to interpret the observations. Earth MRI provides the national framework for that integration, allowing new capabilities to build on prior public investments rather than becoming isolated datasets.

Foundational data retain value as technologies and national priorities evolve. Information collected to understand a critical-mineral system may later contribute to the identification of geothermal resources, natural hydrogen, groundwater conditions, or geological hazards. Systematic collection, integration, and public availability therefore increase the long-term return on Federal investment.

The resulting benefits extend beyond mineral exploration. Earth MRI supports:

- National and economic security and domestic supply-chain resilience;
- More informed land-management decisions and improved understanding of groundwater, geothermal resources, and geological hazards; and
- Education and workforce development.

Congress should not substantially expand Earth MRI's statutory responsibilities while simultaneously authorizing the program at roughly one-quarter of the annual funding level previously provided.

H.R. 9640 APPROPRIATELY MODERNIZES THE PROGRAM

H.R. 9640 would amend Earth MRI's statutory purpose to recognize data derived from modern sensing technologies, including advanced geophysical acquisition, digital geochemistry, advanced geochemical characterization, real-time or near-real-time acquisition systems, and data-driven analytical methods.

AASG strongly supports modern sensing and analytical technologies, but these tools do not replace foundational geological work. Geophysical surveys, remote sensing, digital geochemistry, and data-driven methods can reveal previously undetectable patterns and anomalies; those results must still be interpreted through field geology, geologic mapping, stratigraphy, mineralogy, geochemistry, structural geology, drill records, and existing State data.

Modernization should therefore strengthen integration with on-the-ground geological mapping and field verification. A geophysical anomaly is not, by itself, a resource assessment. Geological expertise turns observations into useful information about critical minerals, geothermal systems, natural hydrogen, groundwater, geologic hazards, and other subsurface resources.

State Geological Surveys provide the regional expertise and field capability needed to ground-truth and interpret these data. Continued investment in geological mapping and field science must remain a core priority as Earth MRI adopts advanced technologies.

Earth MRI should remain the Nation's primary framework for incorporating new technologies into a coordinated geoscience program. H.R. 9640 appropriately provides that flexibility while ensuring that advanced geophysics, remote sensing, digital geochemistry, data-driven analysis, and future technologies complement one another and integrate with existing geological knowledge.

AASG also supports the bill's addition of the USGS 3D Hydrography Program as an Earth MRI data source. Integrating hydrography with geologic, geophysical, geochemical, and elevation data can improve understanding of landscape processes and the connections among surface water, groundwater, and subsurface resource systems. This provision recognizes that critical minerals, geothermal resources, natural hydrogen, groundwater, and other subsurface systems are scientifically interconnected.

THE FEDERAL-STATE PARTNERSHIP IS ESSENTIAL

State Geological Surveys are indispensable to Earth MRI's success.

USGS provides national coordination, research capability, common standards, and the ability to undertake large-scale data acquisition. State Geological Surveys contribute detailed local knowledge and the institutional capacity necessary to translate national data into practical information.

State Geological Surveys maintain geological maps, drill records, sample collections, mine records, geochemical databases, and decades of institutional knowledge. They conduct field investigations, collaborate with universities, work with State and local governments, and understand the regulatory and land-management systems within their jurisdictions. They are the recognized geological experts in their States.

EARTH MRI IS PRODUCING MEASURABLE RESULTS

Since its establishment, Earth MRI has significantly expanded the collection of modern geological information across the United States.

State Geological Surveys have seen the program's benefits firsthand.

- In Michigan, Earth MRI partnerships have helped support the development of dedicated mineral-program capacity.

- In Wyoming, Federal Earth MRI investments have complemented substantial state investments in geological and mineral-resource information.
- In Colorado, Earth MRI projects have advanced critical-mineral assessment while creating opportunities to train students and early-career geoscientists.
- In Idaho and Nevada, Earth MRI data are improving understanding of critical-mineral systems in important mining jurisdictions.
- In California and Oregon, modern geological mapping and geophysical investigations are improving understanding of nationally significant resources.
- In Alaska, Earth MRI has almost doubled preexisting publicly available geophysical data coverage.

MINE WASTE PRESENTS BOTH A CHALLENGE AND AN OPPORTUNITY

Earth MRI's work on mine waste is another important contribution.

Historical mine waste may contain minerals that were not economically valuable, technologically recoverable, or strategically important when the material was originally extracted. In other cases, older processing methods may have left substantial quantities of valuable minerals behind.

Characterizing these materials can identify potential economic resources while also supporting reclamation and environmental improvement. The material has already been mined, crushed, processed, or moved. That does not eliminate environmental or technical challenges, but it may reduce certain costs and surface disturbances associated with recovering minerals from previously undisturbed deposits.

THE WORK REMAINS INCOMPLETE

Earth MRI has demonstrated that a coordinated national effort can rapidly improve the country's geological information. Before Earth MRI, only approximately 7 percent of the United States was covered by high-quality geophysical data. By fiscal year 2025, coverage had increased to approximately 26 percent.

That represents substantial progress. It also means that much of the nation still lacks the modern information required for comprehensive assessment.

USGS has identified future Earth MRI goals that include:

- Completing high-resolution geophysical coverage of known critical-mineral focus areas;
- Inventorying significant legacy and active mine-waste sites related to critical minerals;
- Evaluating mine-waste volumes and potential mineral endowments;
- Integrating new data into national mineral-resource assessments; and
- Continuing development of accessible, modern systems for delivering Earth MRI data to the public.

The program is not approaching the end of an assignment. It is reaching the stage at which years of investment, capacity building, and coordinated data acquisition can produce increasingly valuable national assessments.

A significant reduction in funding at this stage would interrupt momentum, weaken State and Federal capacity, disperse specialized personnel, and delay completion of the national mapping effort.

STABLE FUNDING IMPROVES EFFICIENCY

Continuity is essential because geological mapping and resource assessment require multiyear planning. Airborne surveys must be scoped, contracted, flown under appropriate seasonal conditions, quality controlled, processed, interpreted, and integrated with field and laboratory work. State Geological Surveys must recruit and retain specialists; universities and laboratories must plan participation and analyses; and Federal and State partners must coordinate adjoining surveys and compatible data standards.

Large fluctuations in funding do not simply reduce the quantity of work completed. They reduce efficiency by disrupting planning, contracting, hiring, training, and coordination.

A stable five-year authorization would allow USGS and State Geological Surveys to sequence projects strategically, retain expertise, coordinate regional work, and deliver data more efficiently. That stability ultimately benefits businesses and other users that depend on timely, reliable information.

CONCLUSION

Earth MRI is working.

Earth MRI is an efficient, collaborative, science-based investment in the Nation's economic competitiveness, energy and mineral security, and scientific infrastructure.

The program leverages Federal and State expertise. It produces public information rather than solely private advantage. It supports private-sector activity while also improving governmental decision-making. The geological information produced today will remain valuable for decades. Future scientists, communities, agencies, and industries will continue to use these data for purposes that may not yet be anticipated.

The Association of American State Geologists strongly supports reauthorization of Earth MRI through H.R. 9640. We respectfully urge the Committee to increase the authorization to a level commensurate with the program's unfinished national mission and the expanded responsibilities established by this legislation.

Thank you for the opportunity to provide this testimony and for the Committee's bipartisan leadership on this important national initiative.

Respectfully submitted,

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