Testimony before the U.S. Senate
Committee on Energy and Mineral Resources

S. 1600, the Critical Minerals Policy Act of 2013

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Submitted by:
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Testimony on behalf of:
The State of Alaska and Interstate Mining Compact Commission

I. Introduction

Chairman Wyden, Ranking Member Murkowski, and honorable members of the Senate Committee on Energy and Mineral Resources – My name is Robert Swenson and I am Deputy Commissioner of the Alaska Department of Natural Resources (AK DNR). On behalf of Governor Sean Parnell, thank you for this opportunity to testify in strong support of the Critical Minerals Policy Act of 2013. We applaud this bipartisan effort to revitalize the United States' critical minerals supply chain and reduce the nation's dependence on foreign supply.

I have also been entrusted by the 26 member and associate-member states of the Interstate Mining Compact Commission (IMCC) to convey their views to the Subcommittee today, and to express their gratitude for your leadership in this area, as well as their strong support for S. 1600.

Strategic and critical minerals (SCM) are those minerals determined to be essential for use in the United States but subject to potential supply disruptions. The U.S. Geological Survey (USGS) maintains a list of critical minerals that is updated on the basis of supply risk and changing technologies. The list includes rare-earth elements, the platinum-group metals, graphite, and 13 other elements or element groups. It is worth noting that these are just a subset of the 36 elements identified by the USGS for which the United States imports more than 70 percent of its supply, and that this list will change over time based on supply and the evolution of demand.

II. Overview of Today's Testimony

My testimony today will address why this legislation is necessary and timely. I will also outline very similar and complementary efforts the State of Alaska is undertaking through its

strategic minerals initiative launched by Governor Parnell in 2011. My primary objective is to share specific examples of how government investment can significantly improve our understanding of resource potential, ensure protection of the environment, and encourage private sector investment to help meet our mineral commodity needs.

Before getting into substantive matters, I would like to briefly mention my professional background as it pertains to this testimony and provide some information about the IMCC.

As the State Geologist and now Deputy Commissioner of AK DNR, a state agency employing more than 1,100 resource professionals, I have been in charge of designing and implementing the State of Alaska's strategic and critical mineral effort. The AK DNR workforce includes scientists with expertise in conducting geological mapping and airborne geophysical studies as well as experts in permitting who work to ensure that exploration and development is conducted in a manner that is compatible with Alaska's unique environment and stringent regulatory standards.

The IMCC, of which the State of Alaska became a full member last year, is a multi-state organization that represents the natural resource and related environmental protection interests of its member states. Twenty-one states have ratified their membership in the IMCC through acts of their respective state legislatures, and five others participate as associate members while they pursue enactment of state legislation ratifying their membership. A primary focus of the IMCC is liaising with Congress and the federal government to promote a cooperative effort between state and federal agencies in advancing responsible mining development and environmental protection.

As the primary regulators of mineral production activity within their borders, the IMCC member states have a vital interest in the development of all minerals, particularly those of strategic and critical importance to the United States. Even where minerals are produced on federal lands, states often work in concert with our various federal agency partners to ensure that these minerals are mined in an efficient and effective manner, while also protecting the environment and balancing impacts on other resources such as the land, water and air.

III. Significance of S. 1600

In its findings, S. 1600 declares that "the United States lacks a coherent national policy to assure the availability of minerals essential to manufacturing, national economic well-being and security, agricultural production, and global economic competitiveness. We strongly agree with this finding.

The bill seeks to establish a new critical minerals policy that:

- Facilitates domestic production;
- Promotes investment-quality, environmentally-sound domestic mining, processing and minerals recycling;
- Establishes a national assessment for mineral demand, supply and needs; and
- Addresses permitting inefficiencies that impact the minerals sector

Our Nation's federal agencies (e.g., the USGS, the U.S. Bureau of Land Management (BLM), and the U.S. Forest Service (USFS)), will take a lead role in implementing this new policy and, to be successful, they will need to establish strong partnerships with the states that have the resource base to support a strategic minerals sector and the regulatory systems and expertise to develop those resources.

As shown in Figure 1 in the appendix to this testimony, as of 2012, the United States relied on imports for most of its strategic and critical minerals. Figure 1 is a graph from the U.S. Geological Survey's 2013 mineral commodity summary of 63 mineral commodities important to the United States. The figure shows that our nation relies on imports for 100 percent of 17 of the 63 minerals and relies on imports for more than 50 percent of 25 additional minerals. Our reliance on imported minerals, however, is not due to an absence of resource potential.

In fact, while much additional work and investment is needed to develop domestic supplies, many U.S. regions contain significant potential for strategic and critical minerals. To help understand Alaska's potential, we have modified Figure 1 to include current, past, and potential production, and highlight the commodities that are currently on the USGS list of SCMs.

IV. Alaska's Strategic and Critical Minerals Initiative

The State of Alaska is blessed with vast mineral potential on its lands. Based on USGS estimates, if Alaska was a country, it would be in the top 10 for:

- Coal (17% of the world's coal; *2nd most in the world)*
- Copper (6% of the world's copper; *3rd most in the world)*
- Lead (2% of the world's lead; *6th most in the world)*
- Gold: (3% of the world's gold; *7th most in the world)*
- Zinc: (3% of the world's zinc; *8th most in the world)*
- Silver (2% of the world's silver; *8th most in the world)*

In addition, Alaska has more than 70 known occurrences of rare earth elements (REEs) and multiple occurrences of SCM s, as noted on Figure 2. We expect that continued exploration will lead to additional discoveries.

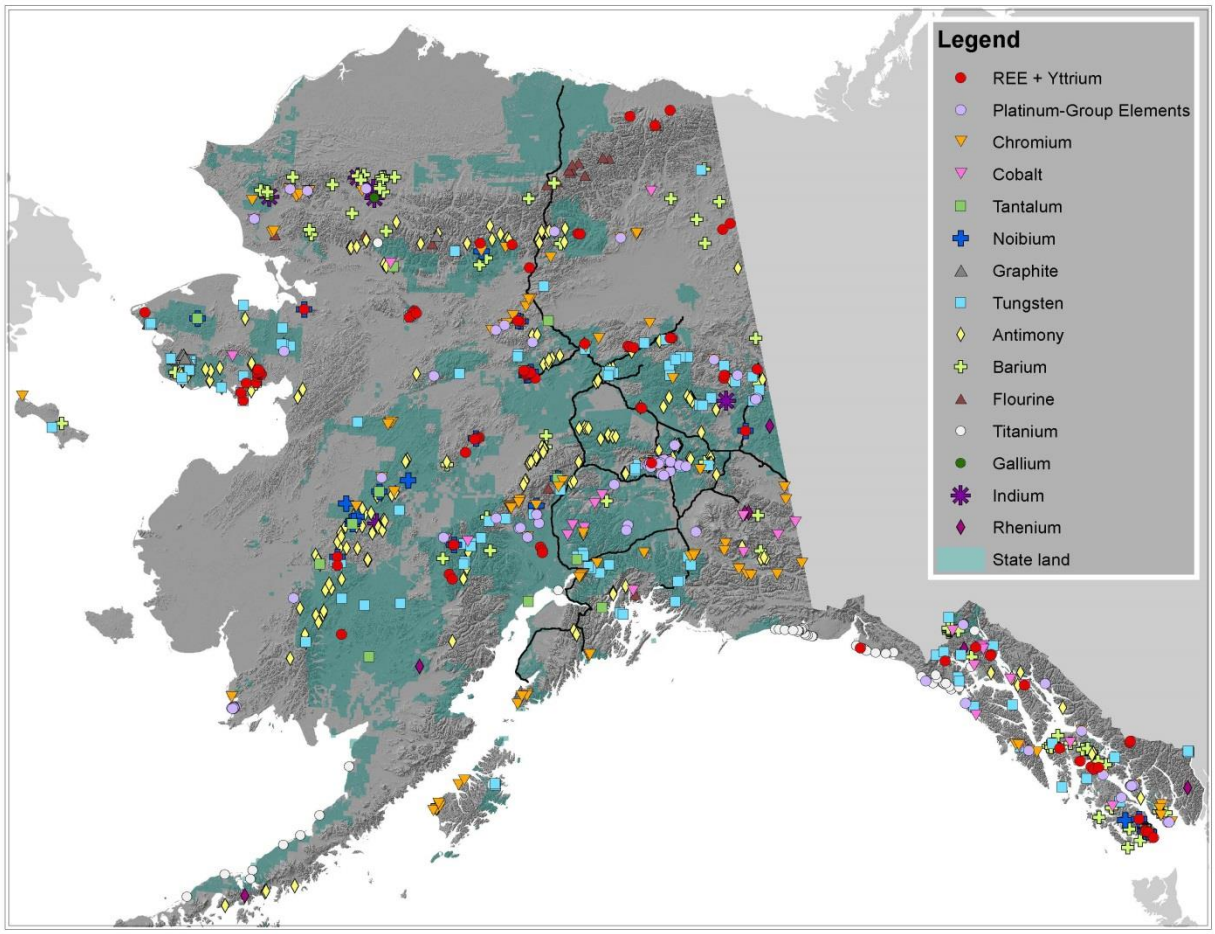

Figure 2: Strategic and critical mineral occurrences in Alaska (Source: AK DGGS)

Recognizing the nation's need for domestic production of SCMs and the significant minerals potential in Alaska, Governor Parnell directed the Department of Natural Resources to hold an inaugural Alaska Strategic and Critical Minerals Summit on September 30, 2011. During the summit, the governor announced *Secure Alaska's Future: Strategic Minerals*, a five-part initiative to assess, incentivize and develop strategic minerals in Alaska. This initiative includes:

- Undertaking a statewide assessment of Alaska's strategic mineral potential;
- Supporting the development of known and highly-prospective strategic mineral occurrences through infrastructure partnerships and incentives;
- Improving the structure and efficiency of the permitting process
- Deepening partnership and cooperation with the federal government and other stakeholders to encourage domestic exploration, development, and processing of REEs and other strategic minerals.
- Attracting new investment and markets for Alaska's abundant mineral resources

I will now give you a brief summary of these efforts as an example of what can be done with proper leadership, cooperation, and funding. My hope is that this Committee can use Alaska's Strategic Minerals Initiative as an example of successful government investment in the minerals sector and gauge the level of investment needed to address a national effort.

Statewide Assessment

Following Governor Parnell's 2011 directive, and with funding approved by the Alaska Legislature, the Alaska Division of Geological & Geophysical Surveys (DGGS) embarked on a program to better characterize Alaska's SCM endowment. The schedule and timetable for completion of the division's Strategic and Critical Minerals Assessment project is shown in Table 1, and Exhibit A of the appendix provides a list of products that will be made available through this project.

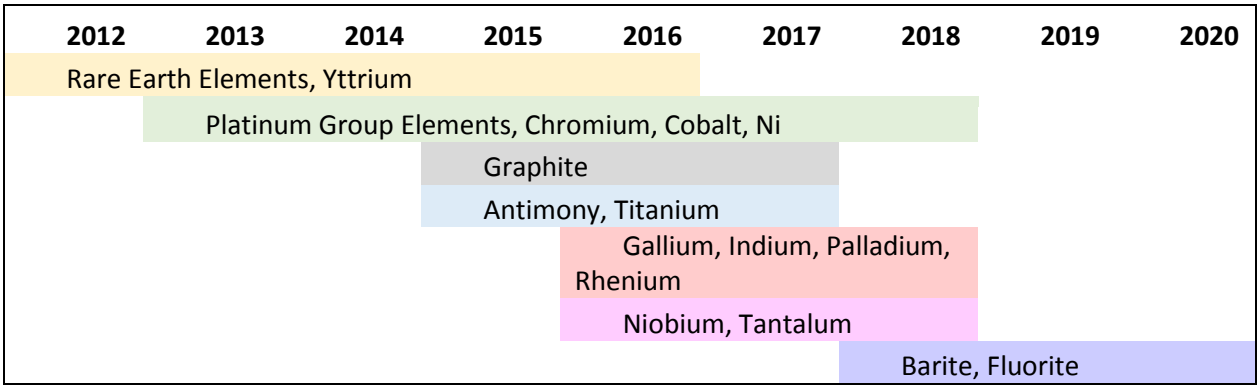

Table 1: Alaska planned strategic and critical minerals project schedule (Source: AK DGGS)

Compiling existing data sets was a key first step in the process and it allowed the state to focus limited funds on highly-prospective state lands that are open to mineral exploration. Partnering with federal agencies was an important step to ensure that geopolitical boundaries do not hinder the geological analysis.

High-quality, district-scale geological data is lacking for most areas of Alaska with known SCM occurrences. The most basic and useful data – geologic maps – are generally not available at a scale useful for mineral exploration (1:63,360 or 1" = 1 mile). Much of the other available public data occurs in a patchwork of coverage of varying quality, vintage, and scale. The state's efforts to provide publicly available, high quality and consistent digital geologic datasets will allow policy makers and land managers to make informed decisions; spur mineral exploration and subsequent mine development; and ultimately reduce the nation's reliance on foreign supply. S. 1600 would greatly enhance and support these types of efforts and initiatives on both state and federal lands.

The Strategic and Critical Minerals Project proposal calls for spending $2.73 million a year for five years (subject to the availability of funding). Since project initiation in 2012, DGGS has spent $3.8 million on field investigations.

Results of the Assessment Program

The Strategic and Critical Minerals Project has produced a significant amount of data since its initiation in 2011. In geologic mapping at both reconnaissance and detailed scales, over 3.9 million acres have been assessed, and more than 1.6 million acres of high resolution airborne geophysics has been acquired, for a total of 5.5 million acres of mapping. To put this into context, the Commonwealth of Virginia contains approximately 27.4 million acres within its boundaries. With the available funding over a 3 year period we have been able to cover about 20 percent of the area of Virginia. In addition to the mapping effort, the state has performed modern geochemical analysis (focused on the full suite of elements) of nearly 10,000 archived and new samples collected during the mapping effort. Much of this geochemical work has been in cooperation with the USGS, which has significantly broadened the aerial coverage and distribution of the information, as shown in Figure 3.

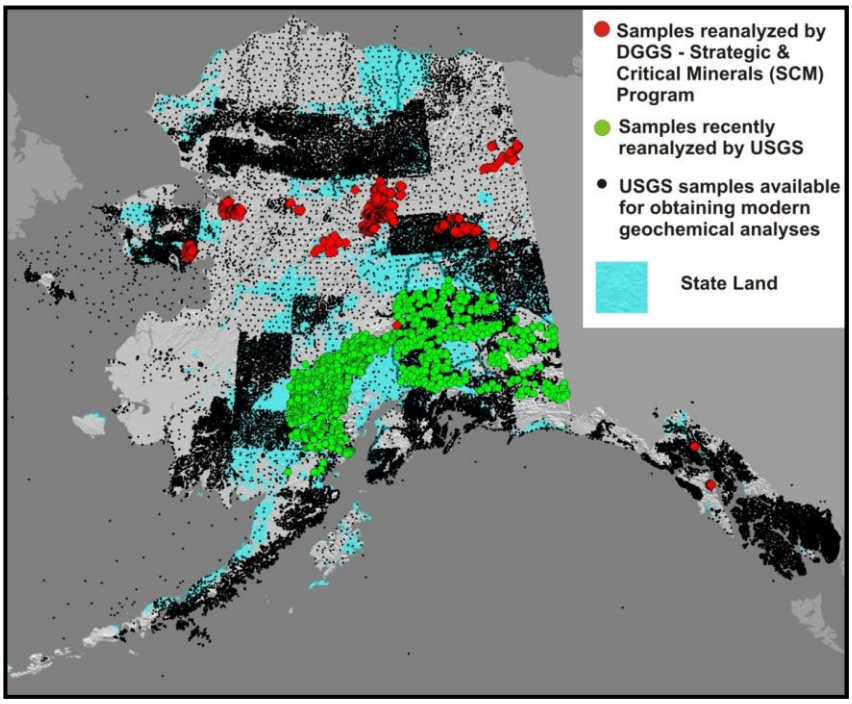

Figure 3: USGS/DGGS geochemical analysis of nearly 10,000 archived and new samples. (Source: AK DGGS)

To contemplate similar programs for a nationwide effort, significantly more funding and 'boots on the ground' would be necessary. Certainly, there is a tremendous variability in the level of data coverage and data quality across the nation, and, as a result, performing comprehensive resource assessments will require a coordinated effort and the creation of a robust funding mechanism between states and federal agencies. S. 1600 would move us in this direction in meaningful ways.

Federal funding through Statemap and data preservation

An excellent example of cooperative funding and leveraging of state and federal dollars to acquire geologic information is the National Geologic Cooperative Mapping Program. This national program has been a cornerstone of cooperation between State Geologic Surveys and the USGS and has been supported by Alaska and IMCC over the years. Another key federal program that helps to archive samples and other forms of legacy geologic and geophysical data is the National Geological & Geophysical Data Preservation Program. A tremendous amount of valuable information was acquired at a very low cost in Alaska by sampling archived materials from both the State and USGS collections. It is imperative that these cost-effective programs are maintained and sufficiently funded to address the evolving geologic needs of the nation, including the strategic minerals assessment program. Again, the provision in S. 1600 will facilitate this type of work greatly.

V. Alaska's Efforts to Improve Permitting

Statewide Permitting Reform

Governor Parnell initiated a statewide permitting initiative in 2010 that called on state resource agencies to evaluate their permitting processes to make them more timely, predictable and efficient. This effort began in earnest in 2011.

The Department of Natural Resources has pursued permitting reform in several ways: investing in our staff, modernizing our technology, and working with the Alaska Legislature to enact statutory changes. Through our work on this over-arching permitting initiative, we are also addressing the governor's Strategic Minerals initiative, which also called on state officials to make the permitting process more structured and efficient.

Legislative support has been essential for us to make these improvements. In FY12, the Alaska Legislature provided approximately $2.7 million in operating funds and $2.5 million in capital funding for our Division of Mining, Land & Water to create efficiencies in its permitting process. In FY12 and 13, the Legislature approved funding to fill vacant positions focused on permitting.

What progress have we made? Since 2011, the Department of Natural Resources has been able to reduce its backlog of permits and authorizations by more than 50 percent. Furthermore, the Alaska Legislature has approved several bills introduced by Governor Parnell to modernize our statutes. One of those bills, enacted in 2013, authorizes state agencies to evaluate the possibility of administering the federal program for permitting dredge and fill projects in surface waters and

wetlands. Under this program, the state, rather than the U.S. Army Corps of Engineers, would administer many Clean Water Act Section 404 permitting responsibilities in cooperation with the U.S. Environmental Protection Agency. While this would be a major undertaking and significant new expense for the state, assuming primacy for this federal program may make permitting projects, including mining projects, in Alaska more efficient, timely, and certain.

Specifically related to mining, our Department has worked with miners and several state and federal agencies to modernize Alaska's mining permit application forms. Three previous versions of application packets used for hardrock exploration, mechanical placer mining, and suction dredge operations were consolidated into one uniform application packet in an updateable Adobe format. These new application packets are now available online for use during the 2014 mining season. This change has simplified the process for miners, eliminated or simplified duplicative and confusing technical terms, and will improve application processing by reducing errors and increasing readability. We believe that S. 1600 would similarly provide relief in this same manner.

Large Project Coordination

Alaska employs an interagency Large Mine Permitting Team (LMPT) approach to the review of permits and authorizations for mining projects. This team-based approach, to our knowledge, is unique in the nation. It is a voluntary process, at the applicant's expense, whereby the applicant enters into an agreement with DNR's Office of Project Management and Permitting (OPMP) to provide a Large Project Coordinator (LPC), who acts as the State's primary point on contact for the project. The LPC coordinates the participation of the technical LMPT members from the different state regulatory agencies, who are also funded by the applicant via the funding agreement with OPMP. When a federal Environmental Impact Statement (EIS) is required under the National Environmental Policy Act (NEPA), OPMP typically signs on as a Cooperating Agency on behalf of all of the state agencies and coordinates their participation in the NEPA environmental review. The LPC works to minimize duplication of effort by the agency representatives and to coordinate, to the degree possible, the permitting requirements and timelines of the different state and federal agencies. The State of Alaska has long felt that a federal coordinator similar to the State's LPC could help to coordinate federal permitting.

Alaska's coordinated team approach helps to increase permitting efficiencies and to ensure that permitting requirements are not overlooked. The funding agreement with OPMP also provides a means for hiring 3rd party contractors, if the state agencies lack the in-house technical expertise for reviewing and evaluating project proposals and supporting documents. A recent addition to Alaska's approach to mine permitting has been the requirement for Health Impact Assessments (HIA) which objectively evaluate the potential impacts to human health, both

negative and positive, from mine development. The HIA program is housed in the Alaska Department of Health and Social Services and is staffed by public health professionals.

Because resource development projects and environmental protection are equally important to Alaska, we have invested a lot of attention to our permitting processes and feel we have a system that is thorough, balanced and efficient. In recent years, the LMPT has participated in the EIS for the Greens Creek Tailings Expansion, the re-issuance of authorizations and financial assurances for the Kensington Gold Mine, and modifications to the Fort Knox Gold Mine's Plan of Operations and Waste Management Permit. S. 1600 seems to embrace this same type of approach for federal projects and should also facilitate the permitting of projects on federal lands.

VI. Working with Federal Agencies and Industry

One of the most cost-effective ways to gather new data in remote areas with high costs of data acquisition is through partnerships and grant programs that leverage the limited funding of all interested parties. Methods for leveraging can include data sharing, direct contribution to expand programs, cost sharing through competitive grant programs, and the cooperative use of archived samples and data sets where results are shared by all parties.

In Fall 2013, DGGS leveraged its Wrangellia airborne survey by coordinating with a mineral exploration company, allowing the company to fly an airborne survey that overlapped a portion of the survey area. DGGS has obtained the results from the company's survey, at no cost, and will incorporate it in our analyses and make it available to the public. DGGS made a similar arrangement with CIRI, an Alaska Native regional corporation, for a 100-square-mile area adjacent to the state's Farewell survey area. DGGS will remain flexible and work cooperatively with other private, industry and government partners to leverage limited funding. This is an example of the multi-stakeholder approach that S. 1600 means to utilize.

DGGS maintains close working relationships with the USGS and the U.S. Bureau of Land Management (BLM) as part of the state's SCM project. Specifically, DGGS and the USGS signed two memoranda of understanding (MOU). The first is a cooperative agreement to evaluate Alaska's Strategic & Critical Minerals potential. Work includes: 1) statistically identifying SCM-related elements with high values in statewide geochemical data in order to identify areas with high SCM potential; 2) identifying areas in Alaska with geology favorable for finding SCM-related mineral deposits, and; 3) re-analyzing historic USGS samples and obtaining modern geochemical analyses to facilitate mineral exploration for SCM.

The second MOU with the USGS is a cooperative agreement to enhance DGGS geophysical surveys. The agreement formalizes a cooperative program for the USGS and DGGS to 1) collaborate on new processing of existing and any future DGGS airborne geophysical survey

data, 2) collaborate on development of new interpretative products (appropriate to both agencies), and 3) provide for the ability to share appropriate confidential geophysical data and information between the geophysical personnel of both agencies.

DGGS also has an informal cooperative agreement with the BLM to document, archive, and make publically available (on DGGS's web site) all of the historic US Bureau of Mines Strategic & Critical Minerals data and publications in Alaska.

S. 1600 appears to encourage this same type of cooperation among state and federal agencies to stimulate mineral production on both state and federal lands. We are particularly supportive of those provisions in S. 1600 that would require enhanced coordination between federal government agencies such as BLM and USFS and state government agencies that have similar responsibilities for the development of mineral resources. We believe that renewed and revitalized efforts in this regard would avoid duplicative reviews, minimize paperwork and result in timelier processing of permit applications. The bill also recognizes and gives credence to the critical role played by the states with jurisdiction over mining projects.

VII. Summary

As domestic needs and supply constraints evolve, it is imperative that government is ready with the data and regulatory environment necessary to address the unique challenges and meet the nation's needs for domestic resources. For its part, the State of Alaska has invested in the assessment of its resources for many years. Historically, the federal government has made significant investments in these critical activities as well. However, to the recent failure to prioritize the USGS minerals program have created a situation where these assessments are difficult or nearly impossible to implement at a national scale.

The Critical Minerals Policy Act of 2013 is a much needed bipartisan effort to address this situation. The bill before you speaks to unique risks concerning the supply chain of critical and strategic minerals that are important for national security, protection of the environment, and economic well-being of the nation. By addressing the data requirements for resource assessments and examining the permitting process for inefficiencies that may unnecessarily hinder responsible development, this legislation will help remove some of the barriers to environmentally sound domestic production, and provide the raw materials for new technologies that will provide a host of benefits to the nation.

As stated in the bill, the federal government cannot accomplish these tasks alone. It is critical that state and federal agencies work in close cooperation, leveraging their expertise and funding to maximize efficiency. Providing sufficient federal funding and matching grant opportunities would be a crucial part of the legislation and should be contemplated for all sections of the bill, including Section 103; *Resource Assessment*.

Alaska's strategic minerals initiative is a good example of how this effort might work on a national scale. While Alaska's work isn't finished yet, it has: gathered the data needed to assess the mineral potential of more than 5 million acres of highly-prospective State land; addressed inefficiencies in the regulatory framework; coordinated permitting; and increased the domestic exploration and production of a host of mineral commodities, including strategic and critical minerals. The investment history depicted in Figure 4 shows that these efforts have been successful. In Alaska, exploration expenditures – the front-end risk money that leads to the next discovery and potential development – have exceeded $100 million dollars for each of the last eight consecutive years, and exceeded $300 million per year for three of those years.

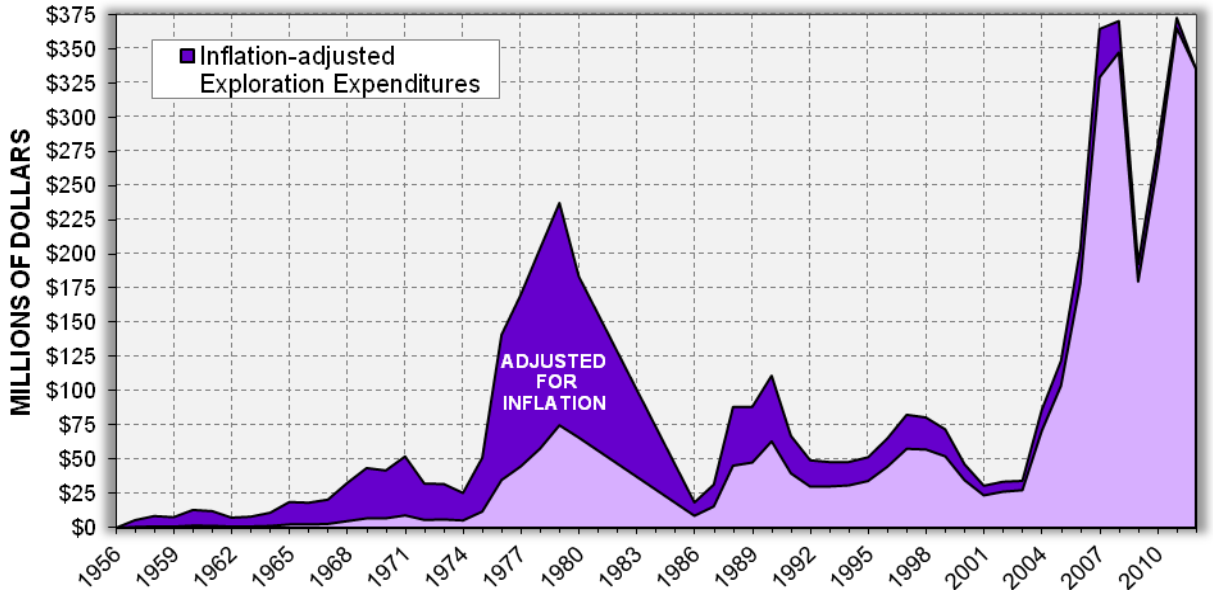

Figure 4: Alaska mineral exploration expenditures, 1956-2012. Curve in the background is inflation-adjusted for 2012 dollars. (Source: Alaska's Mineral Industry 2012, Special Report 68)

The experience in many of the IMCC member states, particularly in the West, has been similar and highlights the importance of a coordinated approach for mineral development and related environmental protection. The efforts and investment contemplated by the Critical Minerals Policy Act of 2013 will help the Nation achieve similar results.

Thank you again for the opportunity to testify before this committee. I would be happy to answer any questions you may have.

Appendix

Figure 1: United States' import reliance on selected minerals

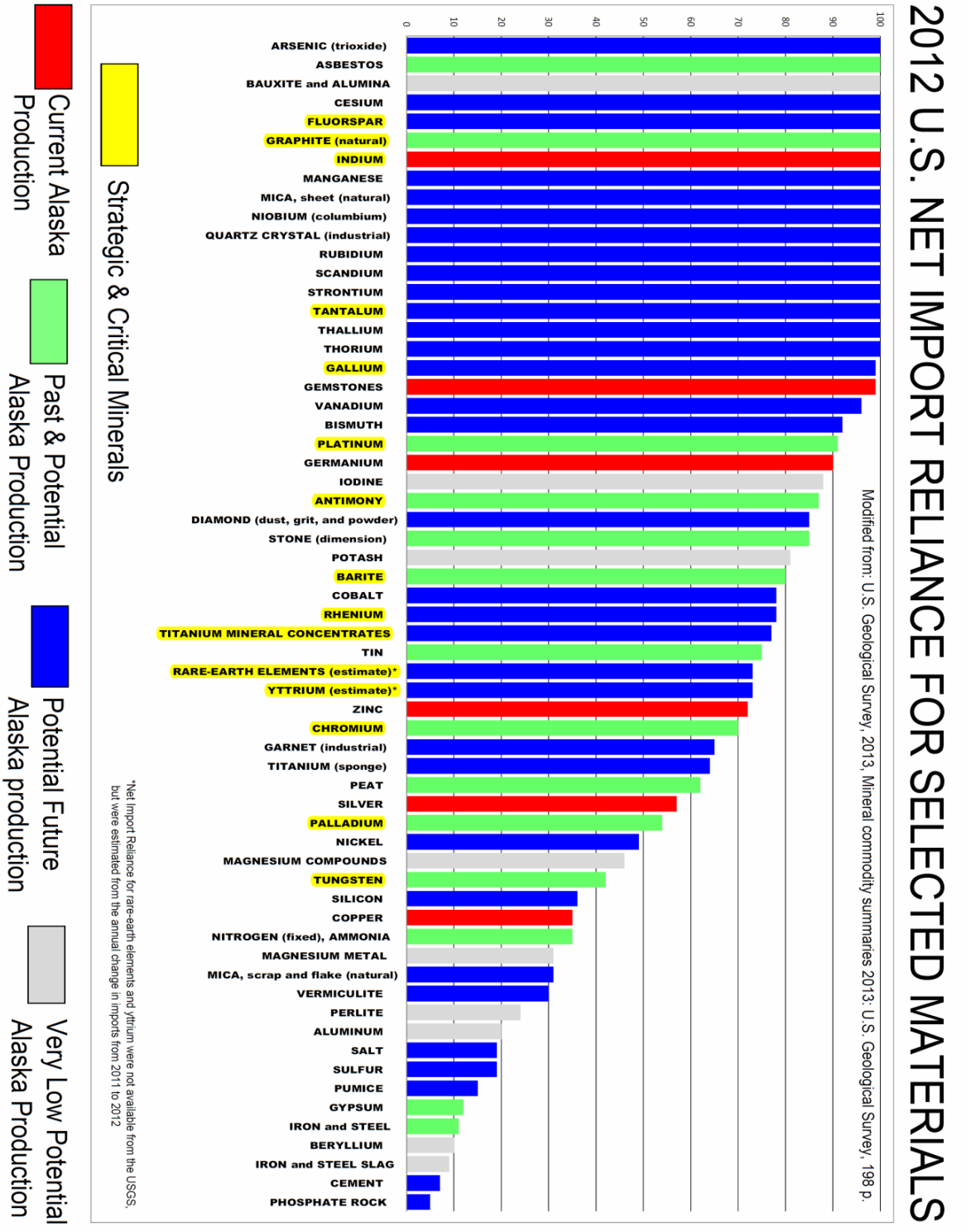

Exhibit A

Products to be published from the State of Alaska Strategic and Critical Minerals Assessment Project include:

- A statewide evaluation by element or element group of known SCM resource areas, summarizing ore deposit models and resource potential for use in strategic assessments and planning
- District-scale geological reports, geology, geophysical and geochemical digital data and maps from our investigations to aid mineral exploration.

Specific new studies DGGS conducts for any commodity will augment currently available information. Data we envision providing for investigated areas, either from existing or newly acquired data includes:

- Draped airborne magnetic, electromagnetic and radiomentric (U, K, Th) surveys.
- Bedrock and surficial geological mapping at a scale of 1:63,360 (1”=1 mile).
- Geochemical analyses from stream sediment, pan concentrate and mineralized rock samples, as well as age dates, whole-rock and trace element analyses to classify and characterize host rocks, and metal distribution.

Exhibit B

Publications and presentations resulting from the State of Alaska's Strategic and Critical Minerals Assessment project:

Szumigala, D.J. and Werdon, M.B., 2011, Rare-Earth Elements: A brief overview including uses, worldwide resources, and known occurrences in Alaska: Alaska Division of Geological & Geophysical Surveys Information Circular 61, 12 p.

Freeman, L.K., Szumigala, D.J., Blessington, M.J., and Werdon, M.B., 2012, Geochemical trace-element and rare-earth element data from stream-sediment and pan-concentrate samples collected in 2011 in the Melozitna mining district, Tanana and Melozitna quadrangles, interior Alaska: Alaska Division of Geological & Geophysical Surveys Raw Data File 2012-3, 3 p.

Werdon, M.B., Gallagher, P.E., and Blessington, M.J., 2012, Geochemical, major-oxide, minor-oxide, trace-element, and rare-earth-element data from rock, stream sediment, and pan-concentrate samples collected in 2011 in the William Henry Bay area, Juneau C-4 and D-4 quadrangles, Southeast Alaska: Alaska Division of Geological & Geophysical Surveys Raw Data File 2012-2, 2 p.

Freeman, L.F., Newberry, R.J., Bachmann, E.N., Blessington, M.J., Tuzzolino, A.L., Werdon, M.B., 2012, Geological resource assessment of strategic and critical minerals, Ray Mountains, Central Alaska: Alaska Miners Association, Fairbanks Chapter weekly breakfast meeting, 2 November 2012.

Freeman, L.K., Newberry, R.J., Bachmann, E.N., Blessington, M.J., Tuzzolino, A.L., and Werdon, M.B., 2012, Geologic Resource Assessment of Strategic and Critical Minerals, Ray Mountains Area, Central Alaska [abs.]: Alaska Miners Association Annual Convention, Nov. 5-11, 2012, p. 16-18.
http://akminers.accountsupport.com/abstracts2012.pdf

Werdon, M.B., Burns, L.E., Blessington, M.J., and Freeman, L.F. DGGS Geophysical Surveys and Strategic and Critical Minerals Studies in Alaska [abs.]: Alaska Miners Association Annual Convention, Nov. 5-11, 2012, p. 14-15.
http://akminers.accountsupport.com/abstracts2012.pdf

Adleman, J.N. and Bluemink, Elizabeth, 2013, Second annual Alaska strategic and critical minerals summit: Alaska Division of Geological & Geophysical Surveys Miscellaneous Publication 151, 17 p.

Bachmann, E.N., Blessington, M.J., Freeman, L.K., Newberry, R.J., Tuzzolino, A.L., Wright, T.C., and Wylie, William, 2013, Geochemical major-oxide, minor-oxide, trace-element, and rare-earth-element data from rocks and streams sediments collected in 2012 in the Ray Mountains area, Beaver, Bettles, Livengood, and Tanana quadrangles, Alaska: Alaska Division of Geological & Geophysical Surveys Raw Data File 2013-5, 4 p.

Blessington, M.J., Reioux, D.A., and Werdon, M.B., 2013, Analyses of historic U.S. Bureau of Mines rock and heavy mineral concentrate samples for geochemical trace-element and rare-earth element data--Ray Mountains and Kanuti-Hodzana uplands area, Alaska: Alaska Division of Geological & Geophysical Surveys Raw Data File 2013-7, 2 p.

Stevens, D.S.P., Werdon, M.B., and Wright, T.C., 2013, Geochemical trace-element and rare-earth element data from rock samples collected in 2012 on Annette Island, southeast Alaska: Alaska Division of Geological & Geophysical Surveys Raw Data File 2013-2, 2 p.

Publications in Preparation:

Twelker, E., Newberry, R.J., Freeman, L.K., Sicard, K.R., Reioux, D.A., Bachmann, E.N., 2014, Geochemical major-oxide, minor-oxide, trace-element, and rare-earth-element data from rocks and streams sediments collected in 2012 in the Western Wrangellia area, Gulkana, Healy, Mt Hayes and Talkeetna Mountains, quadrangles, Alaska: Alaska Division of Geological & Geophysical Surveys Raw Data File (in prep).

Tuzzolino, A.L., Newberry, R.J. and Freeman, L.K, Distriution and genesis of *Rare-earth element minerals in the in the Ray Mountains Area, Central Alaska:* Alaska: Alaska Division of Geological & Geophysical Surveys Report of Investigations (in prep).