

**SEEKING INNOVATIVE SOLUTIONS
FOR THE FUTURE OF HARDROCK
MINING**

OVERSIGHT HEARING

BEFORE THE

SUBCOMMITTEE ON ENERGY AND
MINERAL RESOURCES

OF THE

COMMITTEE ON NATURAL RESOURCES
U.S. HOUSE OF REPRESENTATIVES

ONE HUNDRED FIFTEENTH CONGRESS

FIRST SESSION

Thursday, July 20, 2017

Serial No. 115-20

Printed for the use of the Committee on Natural Resources



Available via the World Wide Web: <http://www.fdsys.gov>
or
Committee address: <http://naturalresources.house.gov>

U.S. GOVERNMENT PUBLISHING OFFICE

26-391 PDF

WASHINGTON : 2017

For sale by the Superintendent of Documents, U.S. Government Publishing Office
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OVERSIGHT HEARING ON SEEKING INNOVATIVE SOLUTIONS FOR THE FUTURE OF HARDROCK MINING

Thursday, July 20, 2017
U.S. House of Representatives
Subcommittee on Energy and Mineral Resources
Committee on Natural Resources
Washington, DC

The Subcommittee met, pursuant to notice, at 9:07 a.m., in room 1324, Longworth House Office Building, Hon. Paul Gosar [Chairman of the Subcommittee] presiding.

Present: Representatives Gosar, Cook, Gohmert, Lamborn, Wittman, Pearce, Thompson, Tipton, Hice, LaHood; Lowenthal, Beyer, and Soto.

Dr. GOSAR. The Subcommittee on Energy and Mineral Resources will come to order. The Subcommittee is meeting today to hear testimony on seeking innovative solutions for the future of hardrock mining.

Under Committee Rule 4(f), any oral opening statements at the hearings are limited to the Chairman, Ranking Minority Member, and the Vice Chair. This will allow us to hear from our witnesses sooner, and help Members keep to their schedules. Therefore, I ask unanimous consent that all other Members' opening statements be made part of the hearing record, if they are submitted to the Subcommittee Clerk by 5:00 p.m. today.

Without objection, so ordered.

STATEMENT OF THE HON. PAUL A. GOSAR, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF ARIZONA

Dr. GOSAR. Today, the Subcommittee meets to discuss the importance of hardrock mining. Hardrock mining on Federal land in the United States has a storied past, a challenging present, and a multitude of needs for reform. This hearing will focus on pressing issues facing the hardrock industry, and provide oversight for innovative solutions for the future of hardrock mining.

Back in March, this Subcommittee held an oversight hearing highlighting the importance of raw materials in a variety of infrastructure projects. From rocks to roads, rare earths to green technologies, and iron ore to wind farms, all infrastructure projects rely on a mining operation.

The diversity of the Nation's mineral endowment allows for the United States to be self-sufficient, yet domestic production of solid mineral resources is hindered by an arduous and uncertain regulatory scheme.

Delays in obtaining the various permits required for mine construction and production results in a project's loss in value. The NEPA process alone averages over 4½ years. This affects the

economics of a given deposit and a company's ability to maximize the quantity of the resource they are able to recover. In other words, artificial delays in a mining project results in the squandering of the Nation's resources.

Mining begins with exploration. In the early 1990s, the United States attracted 20 percent of the worldwide exploration budget. Today, it hovers around 7 percent. Without domestic exploration, significant declines in U.S. mineral production are unavoidable. This has contributed to an increased import dependency for minerals.

In the mid-1980s, the United States was dependent on foreign sources for 30 non-fuel minerals. By 2017, the U.S. import dependence for non-fuel minerals more than doubled to 64 commodities, 20 of which are imported entirely. Maybe it is time to return the USGS to its mission of geological exploration.

Mining operations can have a significant impact on the environment. As such, Federal and state regulations have evolved to respond to past deficiencies, and ensure that the highest level of environmental protection is achieved, including significant and sufficient bonding requirements.

However, over-regulation has a detrimental effect, as well. For instance, the EPA is working on a rule right now that would disregard the comprehensive regulations by states and other Federal agencies. The Bureau of Land Management, the U.S. Forest Service, and the majority of western states continue to raise concerns regarding duplication and pre-emption. These attempts to impose excessive and duplicative requirements on the mining industry will only serve to disincentivize critical investments in the United States.

Abandoned mine lands are also an issue. There are estimates as to how many sites exist, and while there is no comprehensive inventory of abandoned hardrock mines, the problem is known to be extensive. While progress has been made in addressing some of the problem sites, there are legal barriers to creating a more aggressive and substantial program, and Good Samaritan legislation for abandoned hardrock mine site reclamation can be a positive force to resolve this legacy issue.

Additionally, the United States no longer has a Federal entity promoting mineral development. The U.S. Bureau of Mines (USBM) was a Federal entity in the Department of the Interior that operated from 1910 until 1996. The purpose of the Bureau was to promote health, safety, and economic viability of the mining industry. Many from the mining community have pointed to the disbandment of the USBM as the beginning of the decline of mining in the United States.

Today, we will also discuss the topic of royalties on minerals produced on Federal land. I encourage us to keep in mind the realities of hardrock mining. These economic and technical variables lead to different returns on investments from operation to operation. A one-size-fits-all gross royalty does not take into account the unique feature of every mine. As such, any legislative proposal seeking to impose a royalty rate must appropriately account for the realities of the hardrock mining industry, and be coupled with permitting certainty.

It is true, we are covering a lot today. I look forward to coming up with novel approaches to perceived needed reforms, and I hope that we can do so in a bipartisan way. For many Congresses, we have been throwing around the same ideas to no avail. It is time for some new ideas, and I hope we come together to find them.

Last, this week is “Made in America” week, and at this timely hearing we are discussing what is “Mined in America.”

I want to thank the witnesses for being here, and I look forward to hearing from them.

[The prepared statement of Dr. Gosar follows:]

PREPARED STATEMENT OF THE HON. PAUL A. GOSAR, CHAIRMAN, SUBCOMMITTEE ON
ENERGY AND MINERAL RESOURCES

Today, the Subcommittee meets to discuss the importance of hardrock mining. Hardrock mining on Federal land in the United States has a storied past, a challenging present, and multiple needs for reform. This hearing will focus on pressing issues facing the hardrock industry and provide oversight for innovative solutions for the future of hardrock mining.

Back in March, this Subcommittee held an oversight hearing highlighting the importance of raw materials in a variety of infrastructure projects. From rocks to roads, rare earths to green technologies, and iron ore to wind farms, all infrastructure projects rely upon a mining operation. The diversity of the Nation’s mineral endowment allows for the United States to be self-sufficient, yet domestic production of solid mineral resources is hindered by an arduous and uncertain regulatory scheme.

Delays in obtaining the various permits required for mine construction and production results in a project’s loss in value. The NEPA process alone averages over 4½ years. This affects the economics of a given deposit and a company’s ability to maximize the quantity of the resource they’re able to recover. In other words, artificial delays in a mining project results in the squandering of the Nation’s resources.

Mining begins with exploration. In the early 1990s, the United States attracted 20 percent of the worldwide exploration budget; today it hovers around 7 percent. Without domestic exploration, significant declines in U.S. mineral production are unavoidable. This has contributed to an increased import dependency for minerals. In the mid-1980s, the United States was dependent on foreign sources for 30 non-fuel minerals. By 2017, the U.S. import dependence for non-fuel minerals more than doubled to 64 commodities; 20 of which are imported entirely. Maybe it’s time to return the USGS to its mission of geological exploration.

Mining operations can have a significant impact on the environment. As such, Federal and state regulations have evolved to respond to past deficiencies and ensure that the highest level of environmental protection is achieved, including significant and sufficient bonding requirements. However, over-regulation has a detrimental effect. For instance, the EPA is working on a rule right now that would disregard the comprehensive regulations by states and other Federal agencies. The Bureau of Land Management, the U.S. Forest Service, and the majority of western states continue to raise concerns regarding duplication and pre-emption. These attempts to impose excessive and duplicative requirements on the mining industry will only serve to disincentivize critical investments in the United States.

Abandoned mine lands are also an issue. There are estimates as to how many sites exist, and while there is no comprehensive inventory of abandoned hardrock mines, the problem is known to be extensive. While progress has been made in addressing some of the problem sites, there are legal barriers to creating a more aggressive and substantial program and Good Samaritan legislation for abandoned hardrock mine site reclamation can be a positive force to resolve this legacy issue.

Additionally, the United States no longer has a Federal entity promoting mineral development. The U.S. Bureau of Mines (USBM) was a Federal entity in the Department of the Interior that operated from 1910 until 1996. The purpose of the bureau was to promote the health, safety, and economic viability of the mining industry. Many from the mining community have pointed to the disbandment of the USBM as the beginning of the decline of mining in the United States.

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rate must appropriately account for the realities of the hardrock mining industry, and be coupled with permitting certainty.

It's true that we are covering a lot today. I look forward to coming up with novel approaches to perceived needed reforms and I hope we can do so in a bipartisan way. For many Congresses, we have been throwing around the same ideas to no avail. It's time for some new ideas and I hope we can come together to find them.

Last, this week is "Made in America" week, and at this timely hearing we will be discussing what is "Mined in America." I want to thank the witnesses for being here and look forward to hearing from them today.

Dr. GOSAR. And with that, I recognize the Ranking Member this morning, Mr. Lowenthal, for his 5 minutes.

STATEMENT OF THE HON. ALAN S. LOWENTHAL, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF CALIFORNIA

Dr. LOWENTHAL. Thank you, Mr. Chairman, and thank you for holding this hearing on a topic that is long overdue for some innovations, and thank you to all the witnesses.

If I had to make one operative statement, one sentence, that summarized what I am going to say, it is the West has been settled. That is my operative sentence, "the West has been settled," because we are going to be talking today about Federal law surrounding hardrock mining.

Innovative solutions? At this point, what we are talking about if we look at the last time that we did anything on this, we are talking about the horseless carriage, the gramophone, light bulbs. We have not really been dealing with hardrock mining for a long, long time.

The Mining Law dates back to 1872, when the West looked nothing like it does today. The same could be said for the entire country, as well as mining. The incentives placed into the 1872 law were supported by President Grant, because he wanted the West to be settled. That was the driving force. My message is the West has been settled; it is time to move on.

The population of the entire country in the 1870s was smaller than the population of California today. Los Angeles was home to about 6,000 people, and thanks to the new transcontinental railroad, you could get from coast to coast at a blistering pace of just under 1 week. And it was in those days that we put into effect what became the local codes and the rules that the 49ers developed during the Gold Rush.

Now, we have over 321 million people in the United States, nearly 10 million alone in Los Angeles County. And you can get from Los Angeles to Washington, DC, or New York City in about 5½ hours. But our mining laws are still effectively the local codes and the rules that the 49ers developed during the Gold Rush.

Public land is open for you to freely explore. The gold, silver, copper, and other minerals are there for you to take, no royalty necessary. And if you find something, you can buy the land outright for either \$2.50 or \$5 an acre. These rules may have been appropriate in the mid-19th century, but they are completely inappropriate in the modern world. It is long past time to seriously reform hardrock mining laws in this country.

I know some will say, "Hey, but hardrock mining does adhere to our environmental laws, such as NEPA, the Clean Water Act, and the Clean Air Act." But none of these laws today are really equipped to handle at this moment the specific environmental challenges that come with hardrock mining, or to address the exalted status that mining has managed to maintain on our public lands.

For example, there are over a half-million abandoned hardrock mines that litter the country, posing safety threats and polluting thousands and thousands of miles of rivers and streams with toxic runoff. Congress tackled this issue for coal mines almost 40 years ago. Industry was asked to pay a small fee for each ton of mined coal, and that money goes to remediating the harmful legacy of countless abandoned coal mines. There is no similar program for abandoned hardrock mines.

We have discussed Good Samaritan programs in this Committee, along with potential support from the newly-created Bureau of Land Management Foundation. These are voluntary efforts and they are off to a good start. I applaud this Committee for dealing with that, but that is not going to be enough to seriously put a dent in the problem.

This can only happen if the mining industry steps up and meaningfully begins to deal with this history of pollution, just like the coal mining industry has done. There are many ways to raise revenue, and one option would be a long-overdue royalty on hardrock mining.

I think it is constructive that we are having this discussion today, because it is simply long past time for the American people to get their fair share for the sale of minerals that actually belong to them.

For nearly a century, we have received a royalty for oil, gas, coal, potash, soda ash, and many other resources that are extracted from public lands. It should be no different for gold, silver, copper, or any other minerals.

I look forward to the discussion about the options for things such as royalty and other ways to reform the mining law. It is long overdue. And, as I say in conclusion, the West has been settled. It is time to move forward.

Thank you, Mr. Chair.

[The prepared statement of Dr. Lowenthal follows:]

PREPARED STATEMENT OF THE HON. ALAN S. LOWENTHAL, RANKING MEMBER,
SUBCOMMITTEE ON ENERGY AND MINERAL RESOURCES

Thank you, Mr. Chairman, and thank you for holding this hearing on a topic that's really long overdue for some innovations. Because when you're talking about Federal laws surrounding hardrock mining, innovative solutions could include the horseless carriage, the gramophone, or light bulbs.

The Mining Law dates from a time when the West looked nothing like it does today. The same could be said for the entire country, as well as mining itself. The population of the entire country in the 1870s was smaller than the population of California today. Los Angeles was home to about 6,000 people. And thanks to the brand-new transcontinental railroad, you could get from coast to coast at a blistering pace of just under a week. And it was in these years that Congress put into law what were effectively the local codes and rules that the 49ers developed during the Gold Rush.

Today, we have 321 million people in this country, nearly 10 million in Los Angeles County alone. And you can get from L.A. to New York City in about 5½

hours. But our mining laws are still effectively the local codes and rules that the 49ers developed during the Gold Rush.

Public land is open for you to freely explore. The gold, silver, copper, and other minerals are there for you to take, no royalty necessary. And if you find something, you can buy the land outright for either \$2.50 or \$5 an acre.

These rules may have been appropriate in the mid-19th century, but they are completely inappropriate for the modern world. It is long past time to seriously reform hardrock mining laws in this country.

I know that there are some who point out that hardrock mining in America still adheres to all of our environmental laws, such as the National Environmental Protection Act, the Clean Water Act, and the Clean Air Act. But none of those are equipped to handle the specific environmental challenges that come with hardrock mining, or to address the exalted status that mining has managed to maintain on our public lands.

Then there are the half-million abandoned hardrock mines that litter the country, posing safety threats and polluting thousands and thousands of miles of rivers and streams with toxic runoff. Congress tackled this issue for coal mines almost exactly 40 years ago. Industry was asked to pay a small fee for each ton of mined coal, and that money goes to remediating the harmful legacy of countless abandoned coal mines. There is no similar program for cleaning up abandoned hardrock mines.

We have discussed Good Samaritan programs in this Committee, along with potential support from the newly created Bureau of Land Management Foundation. But these are volunteer efforts that are a good start, but that will not be nearly enough to put a significant dent into this problem.

That can only happen if the mining industry steps up and meaningfully deals with its own long history of pollution, just like the coal industry has done. There are many ways to raise that revenue, and one option would be the long-overdue royalty on hardrock mining.

I think it's very constructive that we're having that discussion today, because it is simply long past time for the American people to get their fair share for the sale of minerals that belong to them. For nearly a century, the American people have received a royalty for oil, gas, coal, potash, soda ash, and many other resources that are extracted from public lands. It should be no different for gold, silver, copper, or any other mineral.

I look forward to the discussion about the options for such a royalty, and other ways to reform the Mining Law, but there is no question this discussion is long overdue.

I thank the witnesses for being here, and I yield back the balance of my time.

Dr. GOSAR. I thank the gentleman. I will now introduce our witnesses.

First, we have Dr. Murray Hitzman, the Associate Director for Energy and Minerals at the United States Geological Survey; Mr. Bret Parke, Deputy Director for the Arizona Department of Environmental Quality; Ms. Lauren Pagel, Policy Director at Earthworks; Mr. James Cress, Counsel at Bryan Cave, LLP; and then Mr. Mitchell Krebs, President and CEO of Coeur Mining.

Let me remind the witnesses that under our Committee Rules, they must limit their statements to 5 minutes. Their entire written testimony will be placed in the hearing record.

Our microphones are not automatic, you will have to push the microphone button so we can hear you. At that same time, you will see the clock start at 5 minutes. It will be green for the first 4 minutes, then it will turn yellow for 1 minute. When you see the red, please cut it off. We have a busy morning, so we want to make sure we give everybody ample time.

I am going to start now by recognizing Dr. Hitzman for his testimony.

You are recognized.

**STATEMENT OF MURRAY HITZMAN, ASSOCIATE DIRECTOR
FOR ENERGY AND MINERALS, UNITED STATES GEOLOGICAL
SURVEY, RESTON, VIRGINIA**

Dr. HITZMAN. Good morning. Thank you, Chairman Gosar, Ranking Member Lowenthal, and members of the Subcommittee. Thank you for the opportunity to discuss the Nation's mineral resources.

The U.S. Geological Survey is responsible for conducting research and collecting data on a wide variety of mineral resources. The USGS maintains a workforce of geologists, geochemists, geophysicists, and resource specialists with expertise in minerals and materials. These geoscientists collect, analyze, and disseminate data and information on domestic and global rare earth and other mineral reserves and resources, production, consumption, and use. These mineral data are published annually in the mineral commodities summary.

Domestic and global demand for mineral commodities continues to increase. The United States is a major producer of non-fuel minerals that have an estimated total value of \$75.6 billion, and is a net exporter of 16 non-fuel mineral commodities.

But the United States is also increasingly reliant on foreign sources for processed mineral materials. In 2016, our studies show that imports made up more than one-half of the apparent U.S. consumption of 50 non-fuel mineral commodities valued at \$32.3 billion. The United States was 100 percent reliant for 20 of these mineral commodities, including 8 that the USGS identified as critical. This is an increase from 47 non-fuel mineral commodities on which the country was more than one-half dependent in 2015, and 19 non-fuel mineral commodities for which the country was 100 percent dependent in 2015.

In addition to providing information on mineral production and consumption, the USGS also produces data that aids in assessing the mineral potential of a country, and we have done so since 1879. The Nation's lands undoubtedly contain additional deposits of critical and strategic minerals, but mineral exploration by the private sector is hampered by the lack of modern geological and geophysical data.

USGS studies of domestic mineral resources make heavy use of geological and regional-scale geophysical maps such as aeromagnetic and radiometric maps that help to find areas that could be favorable for exploration. Many USGS geological maps are produced in conjunction with state geological surveys through the National Cooperative Geologic Mapping Program.

Currently, less than one-third of the United States has been mapped at the detailed scales required for mineral exploration. For example, Alaska and large portions of the mid-continent represent some of the most prospective ground for mineral discovery in the world. However, the favorable rocks for the deposits are buried, and not visible at the earth's surface. Geophysical surveys are required for such areas.

Other countries, such as Canada and Australia, that have undertaken such geological and geophysical surveys report that investments of \$1 by the government have resulted in further investment of over \$5 by the private sector.

An assessment of the Nation's mineral resources must include not only the resources available on the ground, but also those that become available through recycling. Metal supply consists of primary material from a mining operation and secondary material, which is composed of old and new scrap. Metal recycling rates cluster in the range from 15 to 45 percent. Although recycling is a major source of some non-fuel resources, such as aluminum, technical difficulties with recycling for other mineral commodities, such as the rare earth elements, can be very challenging.

The Department, through the USGS, stands ready to fulfill its role as the Federal provider of unbiased research on mineral resources, as well as information on domestic and global production and consumption of mineral resources for use in global critical mineral supply chain analysis.

Thank you for the opportunity to testify, and I look forward to any questions you may have.

[The prepared statement of Mr. Hitzman follows:]

PREPARED STATEMENT OF DR. MURRAY HITZMAN, ASSOCIATE DIRECTOR FOR ENERGY AND MINERALS, U.S. GEOLOGICAL SURVEY, U.S. DEPARTMENT OF THE INTERIOR

Good morning Chairman Gosar, Ranking Member Lowenthal, and members of the Subcommittee. Thank you for the opportunity to discuss the Nation's mineral resources.

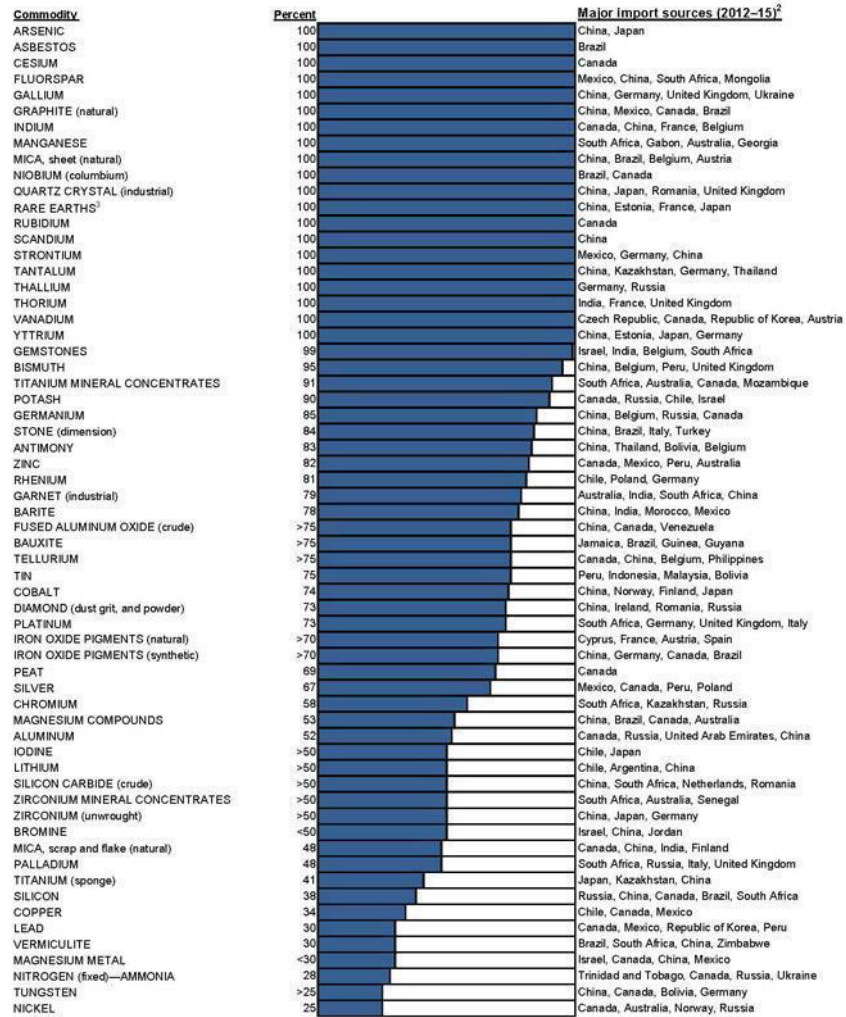
BACKGROUND

On behalf of the U.S. Department of the Interior, the U.S. Geological Survey (USGS) is responsible for collecting data and conducting research on a wide variety of mineral resources. Research is conducted to understand the geologic processes that have concentrated known mineral resources at specific locations in the Earth's crust; and to assess quantities, qualities, and areas of undiscovered mineral resources, or potential future supply. The USGS maintains a workforce of geoscientists, including geologists, geochemists, geophysicists, and resource specialists, with expertise in minerals and materials. These geoscientists continuously collect, analyze, and disseminate data and information on domestic and global rare earth and other mineral reserves and resources, production, consumption, and use.

CURRENT UNDERSTANDING OF THE NATION'S MINERAL ENDOWMENT

Domestic and global demand for mineral commodities continues to rise. Mineral commodities have ever more applications in both consumer and national security products, especially those products involving advanced technologies. The United States remains a major mineral producer with an estimated total value of non-fuel mineral resources of \$75.6 billion, and is a net exporter of 16 non-fuel mineral commodities. However, the country also is increasingly reliant on foreign sources for processed mineral materials. In 2016, imports made up more than one-half of the U.S. apparent consumption of 50 non-fuel mineral commodities (valued at \$32.3 billion), and the United States was 100 percent import reliant for 20 of these mineral commodities (valued at \$1.3 billion), including 8 critical minerals as identified by the USGS. This is an increase from 47 non-fuel mineral commodities on which the country was more than one-half dependent in 2015 and 19 non-fuel commodities for which the country was 100 percent import reliant in 2015. China, followed by Canada, supplied the largest number of non-fuel mineral commodities to the United States in 2016, similar to 2015.

2016 U.S. NET IMPORT RELIANCE



MAJOR IMPORT SOURCES OF NONFUEL MINERAL COMMODITIES
FOR WHICH THE UNITED STATES WAS GREATER THAN 50% NET IMPORT RELIANT IN 2016



USGS mineral commodity specialists study current production and consumption for 84 mineral commodities, both domestically and internationally for 180 countries. These production and consumption data include information on domestic production and use, import sources, world production capacity, and recycling. The data allow for a comprehensive understanding of the complete life cycle of mineral resources and materials. This information is published annually in the *USGS Mineral Commodity Summaries* (USGS, 2017) and includes a description of current events, trends, and issues related to supply and demand. These data inform analyses and policies concerning the Nation's dependence on foreign sources of mineral commodities.

In addition to providing information on mineral production and consumption, the USGS also produces data that aids in assessing the mineral potential of the country, which we have done since 1879. This work continues as different mineral commodities gain importance for the economy and as our understanding improves of how mineral deposits form and how they can be discovered. Geological maps are a primary source of information for mineral exploration. Many USGS geological maps are produced in conjunction with state geological surveys through the National Cooperative Geologic Mapping Program through cooperative agreements.

The Mineral Resources Program (MRP) conducts research to better understand new types of critical mineral deposits. Also critical are geological mapping and geophysical data. These USGS research and assessment products are crucial to Federal, state, tribal, and industry decision making on mineral resources management.

POTENTIAL TO ENHANCE THE NATION'S MINERAL RESOURCES INFORMATION

The United States remains a major mineral producer. The Nation's lands undoubtedly contain additional deposits of critical and strategic minerals, but mineral exploration by the private sector is hampered by the lack of modern geological and geophysical data. USGS studies of domestic mineral resources make heavy use of geologic mapping and the production of regional scale geophysical maps such as aeromagnetic and radiometric maps that help define areas favorable for exploration.

Currently less than one-third of the United States has complete topographic, geologic, and geophysical 3D mapping at fine enough scales to support these resource assessments that directly support private industry exploration. For example, Alaska and large portions of the Midcontinent (IL, IN, IA, KS, MI, MN, MO, NE, OH, OK, and WI) represent some of the most prospective ground for mineral discovery in the world. However, the favorable rocks for the deposits are buried and not visible at the Earth's surface, and have not been more specifically identified through modern geological and geophysical mapping. Other countries such as Canada and Australia have undertaken such geological and geophysical surveys nationwide and have

reported that investments of \$1 by the government have resulted in further investment of over \$5 by the private sector.¹

In addition to reinvesting in the Nation's fundamental data on mineral resources, an accurate assessment of the Nation's mineral resources must include not only the resources available in the ground but also those that become available through recycling. Metal supply consists of primary material from a mining operation and secondary material, which is composed of new and old scrap. Metals show a wide range of recycling rates, recycling efficiency, and new-to-old-scrap ratios. Recycling rates cluster in the range from 15 to 45 percent for different resources. Although recycling is a major source of some non-fuel mineral resources such as aluminum, technical difficulties with recycling mean that for other mineral commodities such as the rare earth elements recycling is challenging. USGS compiles information about recycling, but research on new methods of metal recycling is undertaken mainly by the Department of Energy.

CONCLUSION

The Department, through the USGS, fulfills its role as the Federal provider of unbiased research on known mineral resources, assessment of undiscovered mineral resources, and information on domestic and global production and consumption of mineral resources for use in global mineral supply chain analysis.

Thank you for the opportunity to present on behalf of the Department on the important subject of mineral resources. I will be happy to answer any questions.

Dr. GOSAR. I thank you very much. I will now introduce Mr. Bret Parke, the Deputy Director of the Arizona Department of Environmental Quality.

Big difference between heat out in Arizona and here, isn't it?

Mr. PARKE. Yes, Mr. Chairman. It is a big swampy here.

[Laughter.]

STATEMENT OF BRET PARKE, DEPUTY DIRECTOR, ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY, PHOENIX, ARIZONA

Mr. PARKE. Mr. Chairman, members of the Subcommittee, my name is Bret Parke, and I am the Deputy Director at the Arizona Department of Environmental Quality (ADEQ). It is a privilege for me to be here today, and I appreciate the opportunity to offer testimony regarding the U.S. EPA's proposed rule on CERCLA financial responsibility.

Earlier this month, ADEQ, along with many states and government associations, including the Interstate Mining Compact Commission, requested that EPA withdraw the proposed rule, and determined that EPA action is unnecessary and inappropriate under CERCLA.

The modern regulatory permitting programs that ADEQ cited in its comments and that I will discuss today are site-specific and preventative in nature. In contrast, the 1980 CERCLA law's financial responsibility mandate is remedial, and was founded on the contingency that an unpermitted release will lead to a financial burden on taxpayers. I believe that CERCLA's financial responsibility rule-making mandate and express Federal pre-emption of related financial responsibility is antiquated and unworkable. And, CERCLA's

¹For Canada: Duke, J.M., 2010, Government geoscience to support mineral exploration: public policy rationale and impact: Prospectors and Developers Association of Canada. Toronto, Canada, 64 p.

For Australia: ACIL Allen Consulting, 2015, Exploration Incentive Scheme Economic Impact Study, Geological Survey of Western Australia, 78 p.

mandate to apply the history of superfund and judgments associated with legacy environmental contamination 37 years later, in 2017, is unjustified.

Modern state, regulatory permitting programs and related financial responsibility ameliorate the very risk Congress was addressing more than three decades ago, when it passed CERCLA. Indeed, in the intervening years, states, including Arizona, as well as the Federal Government, filled the gap with sophisticated environmental regulatory permitting and land management programs to govern hardrock mining.

Although EPA acknowledges the existence of Arizona's aquifer protection program and Mining Lands Reclamation Act, EPA overlooked the broad applicability and effectiveness of these programs. ADEQ's formal comments on the rule listed seven distinct programs currently applicable to mines that prevent and mitigate the duration and degree of risk associated with hardrock mining. Many of the Federal regulatory permit programs are delegated and are administered by states.

These state-implemented regulatory programs are progressive, in that they require modern engineering and design, and application of new control technologies. These mature and sophisticated state and Federal regulatory programs have made the requirement to promulgate the proposed rule duplicative and unnecessary. In fact, since the development, implementation, and integration of these state and Federal regulatory programs, no currently operating mine facility release has triggered the financial responsibility call by ADEQ.

In addition to the technical and legal inadequacies of the proposed rule, the economic and administrative burden to Arizona government and industry significantly outweighs any perceived but undemonstrated environmental benefit EPA suggests. For context, mining has played a central role in Arizona's history, and Arizona remains a top producer of copper in the world. In 2014 alone, mining companies in Arizona employed more than 12,000 people.

For that year, including both direct and indirect economic impacts, the mining industry is estimated to have provided 43,800 Arizona jobs, and income of \$4.29 billion. ADEQ, based on an EPA-provided example and using EPA's model, identified that the financial impacts to Arizona mines could be extreme, totaling \$1.8 billion in additional financial responsibility for just the two Arizona mines modeled. This is an extraordinarily high financial burden on mine operators, and the state and its citizens, that is not warranted.

Mining is a global competition. Every additional regulation adopted in the United States should be carefully considered by policy makers. The EPA's own estimated cost under the proposed rule to just the mining industry is \$7.1 billion. Notably, EPA identified the proposed rule will have a significant impact on a substantial number of small entities. In fact, EPA identified 36 percent of hardrock mines subject to the rule are small businesses.

Additionally, EPA's record, including the financial market capacity study requested by Congress, demonstrates that the financial markets are unsure, unfamiliar, and currently do not underwrite this type of third-party, direct-actionable, long-tailed

financial responsibility. What this means is that the market will include a premium to price that unknown risk. This is especially important to note, given that mining is only the first sector, and EPA has published advance notice of a proposed rulemaking for three more nationally strategic sectors.

In closing, I would like to share with you ADEQ's philosophy. ADEQ believes, by working closely with our stakeholders, and by identifying and expanding the nexus between the environment, economy, and the community, ADEQ can best protect and enhance public health and the environment, creating a win-win for the people that live in the great state of Arizona.

That concludes my testimony; I would be happy to answer any questions you might have.

[The prepared statement of Mr. Parke follows:]

PREPARED STATEMENT OF BRET PARKE, DEPUTY DIRECTOR, ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY

PROPOSED RULE—CERCLA 108(B) FINANCIAL RESPONSIBILITY REQUIREMENTS

Mr. Chairman, members of the Subcommittee, my name is Bret Parke, and I am the Deputy Director of the Arizona Department of Environmental Quality. It is a privilege for me to be here today and I appreciate the opportunity to offer testimony regarding the U.S. Environmental Protection Agency's (EPA) proposed rule on CERCLA¹ Section 108(b) Financial Responsibility Requirements for hardrock mining (hereafter proposed rule).²

As you learned from my bio, I am a career environmental professional with deep family roots in public service in the protection and enhancement of Arizona's rich and diverse environment.³

I would like to begin by expressing gratitude to EPA for its recent efforts to engage with and understand the true impacts the proposed rule will have on Arizona and other states for which hardrock mining is a significant economic driver. It is through such collaboration that I believe EPA will come to understand the significant and robust environmental regulatory infrastructure already being effectively administered by state and Federal programs that prevent and mitigate the very risks EPA seeks to address through the proposed rule.

Earlier this month, the state of Arizona through ADEQ, along with many states and government associations, requested that EPA withdrawal the proposed rule and determine that no EPA action is necessary or appropriate under CERCLA 108(b).⁴ In making this request, ADEQ identified several key elements of the proposed rule that makes it untenable for Arizona, and that I would like to share with you today.

The modern regulatory permitting programs that ADEQ cited in its comments, and that I will discuss today are site-specific and preventative in nature. In contrast, the 1980 CERCLA law's financial responsibility mandate is remedial and was founded on the contingency that an unpermitted release will lead to a financial burden on taxpayers. I believe that CERCLA's 108(b) financial responsibility (FR) rulemaking mandate and express Federal pre-emption of related state FR, is antiquated and unworkable in the current existing regulatory permitting and FR environment.⁵ And, CERCLA's mandate to apply the history of Superfund and judgments associated with legacy environmental contamination 37 years later, in 2017, is unjustified. Modern state regulatory permitting programs and related FR ameliorate the very risk Congress was addressing more than three decades ago when it passed CERCLA.

Indeed, in the intervening years EPA inexplicably delayed the rulemaking process, states, including Arizona, and the Federal Government filled the gap with

¹ The Comprehensive Environmental Response, Compensation, and Liability Act of 1980.

² <https://www.federalregister.gov/documents/2017/01/11/2016-30047/financial-responsibility-requirements-under-cercla-108b-for-classes-of-facilities-in-the-hardrock>.

³ Incidentally, if you have not seen the original *The Lorax* book or movie from Dr. Seuss, I highly recommend it.

⁴ As permitted by the Court in its decision in *On Petition For Writ of Mandamus to the United States Environmental Protection Agency, In Re: Idaho Conservation League, et al., Petitioners*, No. 14-1149 (D.C. Cir. Jan. 26, 2016) (available at [https://www.cadc.uscourts.gov/internet/opinions.nsf/1F012EA1238D7A3C85257F490054E52E/\\$file/14-1149-1596081.pdf](https://www.cadc.uscourts.gov/internet/opinions.nsf/1F012EA1238D7A3C85257F490054E52E/$file/14-1149-1596081.pdf)).

⁵ <https://www.law.cornell.edu/uscode/text/42/9608>.

sophisticated environmental regulatory permitting and land management programs to govern the hardrock mining industry. ADEQ's formal comments on the rule listed seven distinct programs currently applicable to mines that prevent and mitigate the "duration and degree of risk" associated with the hardrock mining industry. Many of the Federal regulatory permit programs that were developed have now been delegated to and are administered by the states. These state implemented regulatory programs are progressive in that they require modern engineering and design, and application of new control technology.

These mature and sophisticated state and Federal regulatory programs have made the requirement to promulgate the proposed rule duplicative and unnecessary.

This fatal flaw is well documented in Arizona. Although EPA acknowledges the existence of Arizona's Aquifer Protection and Mining Lands Reclamation Act programs, EPA overlooked the broad applicability and effectiveness of these programs.

In fact, since the development, implementation, and integration of these state and Federal regulatory programs, no currently operating mine facility release has triggered a call by ADEQ on a financial responsibility mechanism in Arizona.

In addition to the technical and legal inadequacies of the proposed rule, the economic and administrative burden to Arizona government and industry significantly outweighs any perceived but undemonstrated environmental benefit that EPA suggests will occur if the proposed rule is enacted. To provide you context for this comment, the hardrock mining industry is an integral part of maintaining sustainable, healthy and prosperous communities throughout Arizona and other hardrock mining states.

Mining has played a central role in Arizona's history and Arizona remains a top producer of copper in the world, as well as a significant producer of molybdenum, coal, gold, silver, and uranium. In 2014 alone, mining companies in Arizona employed more than 12,000 people, spent \$2.77 billion purchasing goods and services throughout the state generating 6,200 jobs, and provided income of \$910 million to just the first-tier suppliers working to support mining.⁶ Including both direct and indirect economic impacts, the Arizona mining industry in 2014 is estimated to have provided 43,800 Arizona jobs and income of \$4.29 billion.

ADEQ recently conducted a financial screening analysis modeled under the proposed rule based on an EPA-provided example that suggests the financial impacts to Arizona mines could be extreme: totaling \$1.8 billion in additional financial responsibility for just the two Arizona mines.

This is an extraordinarily high financial burden on mine operators, and the state and its citizens that is not warranted, given the lack of evidence to support EPA's assertion that the proposed rule would yield an environmental benefit.

Mining is a global competition. Every additional regulation upon the industry to operate in the United States should be carefully considered by policymakers. The EPA's own estimated CERCLA 108(b) financial responsibility cost to just the mining industry is \$7.1 billion. Notably, EPA identified 36 percent of hardrock mining businesses are small businesses, and EPA estimates that the proposed rule will have a significant impact on a substantial number of small entities. The record, including the financial market capacity study requested by Congress (P.L. 114-113),⁷ demonstrates that the financial markets are unsure, unfamiliar and currently do not underwrite this type of third-party accessible, direct actionable, long-tailed financial responsibility. What this means is that the market will include a premium to price the unknown risk.

In addition, as documented in ADEQ's formal comments, the technical and legal documentation supporting EPA's rulemaking process is fatally flawed because it was driven by a litigation driven timeline.

This is especially important to note given that mining is only the first sector, and EPA has already published advanced notice of intent for a proposed rulemaking for three more nationally strategic sectors; manufacturing, petroleum and coal products manufacturing, and the electric power generation, transmission, and distribution industries.⁸

In closing, I'd like to share with you one of the cornerstones of our philosophy at ADEQ. We believe that a healthy environment can only be achieved if we acknowledge and embrace the complex world in which we operate. By working closely with our stakeholders, and by identifying and expanding the nexus between the environment, the economy and the community, we can best achieve our mission to protect

⁶The Economic Impact of the Mining Industry on the State of Arizona: for the year 2014. L. William Seidman Research Institute, W. P. Carey School of Business, Arizona State University (available at <http://www.azmining.com/uploads/AMA%20report%202014%20v2%20.pdf>).

⁷<https://semspub.epa.gov/work/HQ/196705.pdf>.

⁸<https://www.epa.gov/superfund/superfund-financial-responsibility>.

and enhance public health and the environment, and create a win-win for the people that live in the great state of Arizona. The CERLA 108(b) proposed rule on which I have provided testimony on today, is largely duplicative and fails to recognize the complexities of our existing regulatory and environmental ecosystem. If enacted, the proposed rule will yield significant negative economic and state program impacts in Arizona. It will also have an outsized effect on the limited number states with hardrock mining, and the generally rural communities in which they exist. As a result, we strongly encourage EPA to withdraw the proposed rule.

That concludes my testimony and I would be happy to answer any questions you may have.

Dr. GOSAR. Thank you, Mr. Parke.
I now recognize Ms. Pagel from Earthworks.

**STATEMENT OF LAUREN PAGEL, POLICY DIRECTOR,
EARTHWORKS, WASHINGTON, DC**

Ms. PAGEL. Thank you, Chairman Gosar, Ranking Member Lowenthal, and members of the Subcommittee, for holding this hearing, and for the opportunity to testify before you today. My name is Lauren Pagel, Policy Director at Earthworks.

For nearly 30 years, Earthworks has worked to protect communities and the environment from the adverse impacts of mining. Innovative solutions exist to bring our mining laws into the 21st century and protect mining-impacted communities and western water resources.

The U.S. mining industry currently benefits from open access to public lands under an antiquated mining law, large subsidies from the American taxpayer, a uniform regulatory system, and several mining-specific loopholes in our bedrock environmental laws. These factors combine to prioritize hardrock mining industry profits over communities' water resources and taxpayers.

Meaningful reform of the outdated 1872 Mining Law is the innovative solution we need. Reform will give the mining industry the certainty it needs, while providing a fair return to the taxpayer, increasing community involvement in mining decisions, and adequately balancing mining with other uses of public land.

The mining industry receives public minerals for free under a law that was written to govern pick-and-shovel miners, not the large-scale industrial mining that exists today. In addition to royalty-free mining, mining companies receive enormous tax breaks for depleting our resources, due to an extremely favorable tax code.

The mining industry also benefits from a consistent regulatory process set by the National Environmental Policy Act. In fact, the United States is consistently ranked as one of the world's best places for mining investment. According to the Fraser Institute, a Canadian think tank who annually surveys mining exploration and development companies around the world, Nevada, Utah, and Wyoming routinely rank in the top 10 most attractive jurisdictions for mineral investment.

According to a 2016 GAO report, the BLM spends an average of 2 years permitting a mine. And when lengthy delays do occur, the main cause of those delays is often the permit applicants themselves.

The mining industry also benefits from loopholes in major environmental laws, and insufficient bonding and reclamation

requirements. For example, loopholes in the Clean Water Act allow mining companies to dump their waste, untreated, directly into our lakes, rivers, and streams. A groundbreaking study found that 75 percent of mining operations pollute surrounding surface or groundwater, despite their robust environmental reviews that predict they won't. A new study released today finds that 74 percent of the domestic gold mines profiled have polluted water with cyanide, arsenic, nitrates, or other hazardous materials.

The innovative solution to many of the challenges I have highlighted thus far is meaningful reform of the 1872 Mining Law. Earthworks encourages legislation that will provide a fair return to the taxpayer, create a robust reclamation fund to deal with our Nation's abandoned mine program, require mining companies to comply with 21st century operation and reclamation standards, and allow mining to be properly balanced with other uses of public lands.

A value-based gross royalty linked directly to the revenue mining companies receive from the sale of our minerals will help ensure a fair return.

Nevada's state royalty is a good example of why net proceeds royalties do not provide a fair return to the taxpayer. Between 1995 and 2016, Nevada mining operations sold over \$1 billion in gold, yet they only paid royalties to the state of \$1.7 billion, less than 1.7 percent. Over that time span, more than 7 percent of gold production, or over \$7 billion worth, paid no royalty, whatsoever, to the taxpayer.

A modern mining law also requires we deal with the legacy cost mining has passed along to taxpayers. The EPA estimates that total cleanup costs for abandoned mines could be as much as \$50 billion. A reclamation fee similar to the coal abandoned mine fee is needed to create a steady stream of long-term funding for hardrock AML cleanup.

Most importantly, any reform of the mining law must include the discussion for Federal land managers to balance mining with other land uses such as recreation, conservation, hunting, or fishing. Land managers should have clear authority to weigh these competing land uses, water impacts, and community needs before approving or disapproving a mine plan.

I thank you for the opportunity to present Earthworks' view on seeking innovative solutions for the future of hardrock mining. We look forward to working with this Subcommittee and other stakeholders to reform the Mining Law of 1872 to fully protect communities, the environment, and taxpayers.

[The prepared statement of Ms. Pagel follows:]

PREPARED STATEMENT OF LAUREN PAGEL, POLICY DIRECTOR, EARTHWORKS

Thank you Chairman Gosar, Ranking Member Lowenthal, and members of the Subcommittee for holding this hearing and the opportunity to testify before you. I am Lauren Pagel, Policy Director for Earthworks. For nearly 30 years, Earthworks has worked to protect communities and the environment from the adverse impacts of mineral and energy development while seeking sustainable solutions.

Innovative solutions exist to bring our mining laws into the 21st century and protect mining-impacted communities and western water resources. The U.S. mining industry currently benefits from open access to public lands under an antiquated mining law, large subsidies from American taxpayers, a uniform regulatory system

that encourages investment and several mining-specific loopholes in our bedrock environmental laws.

These factors combine to prioritize hardrock mining industry profits over the communities and water resources that are negatively impacted by large hardrock mines. Meaningful reform of the outdated 1872 Mining Law is the innovative solution that will bring our mining laws and practices into the 21st century, giving the mining industry the certainty it needs, while providing a fair return to the taxpayer, maintaining community involvement in mining decisions and adequately balancing mining with other uses of public lands.

The mining industry in this country enjoys unprecedented access to hardrock minerals on public lands—minerals they receive for free under a law that was written to govern pick and shovel miners of 1872, not the large-scale industrial mining that exists today. Federal land managers at the Forest Service and Bureau of Land Management interpret the Mining Law to give mining precedence over all other uses of public lands—prioritizing mining over hunting, recreation, grazing or other beneficial uses.

In addition to royalty-free mining, mining companies receive enormous tax breaks for depleting our resources. An extremely favorable tax code permits a company to deduct a fixed percentage from their gross income according to the mineral extracted, ranging from 22 percent for uranium to 15 percent for silver and other hardrock minerals. In some cases this deduction, over the life of the mine, actually exceeds the cost of acquiring the mineral deposit. The result is a situation where mining companies not only pay virtually nothing for the public's minerals, but also get paid by the government to mine public minerals they were freely given. This subsidy, called the Percentage Depletion Allowance, costs taxpayers over \$500 million every year.

The mining industry also benefits from a consistent regulatory process set by the National Environmental Policy Act (NEPA). In fact, year after year, the United States is ranked as one of the world's best places for mining investment. With stable democratic institutions, courts that enforce contracts, favorable tax and environmental policy, and an orderly and reliable process for public input in permitting decisions, America is the one of the world's best place to mine.

Just ask the mining companies. According to the Fraser Institute—a center-right Canadian think tank who annually survey approximately 700 mining, exploration, development mining company managers and executives around the world—Nevada, Utah, and Wyoming, routinely rank in the top 10 most attractive jurisdictions for mineral investment surveyed.

Despite the mining industry's complaints about permit times, according to a 2016 Government Accountability Office (GAO) report, the Bureau of Land Management spends on average 2 years permitting a mine. Two-year permit times is competitive with the other western democracies with robust mining industries such as Australia, Canada, Chile, and Norway.

The truth is, mining companies create more permitting delays than agencies or regulations. According to the GAO, the main cause of permit delays is the permit applicant. Incomplete or poor quality application information, market fluctuations, or changes to mining plans lead to most delays. Even when the plans are fine, mining companies have further delayed by making changes (sometimes for perfectly legitimate reasons) to their plans after submission. GAO says this occurred 37 times over 5 years accounting for delays ranging from just a few weeks to 7 years.

In addition to free minerals, profitable tax breaks, and a consistent regulatory process, the mining industry also benefits from lax regulation during mine operation and insufficient bonding and reclamation requirements after mine closure. Loopholes in the Clean Water Act and Resource Conservation and Recovery Act allow mining companies to dump their waste directly into our lakes, rivers, and streams. Hardrock mines are often some of the most expensive to clean up when they all too often find themselves on the Superfund National Priorities list. These funding shortfalls leave the public exposed to hazardous mining waste, and leave taxpayers to foot the cleanup bill because the EPA lacks the funds to perform adequate remediation. The hardrock mining industry lacks strong financial assurance regulations, despite the fact that the industry is this Nation's top toxic polluter according to the Environmental Protection Agency's Toxics Release Inventory.

Several studies have shown that mines pollute ground and surface water, even when permit applicants claim they will not. In fact:

- a groundbreaking study found that 75 percent of mining operations pollute surrounding surface or groundwater, despite their robust environmental reviews that predict they won't
- 74 percent of domestic gold mines have polluted waters with cyanide, arsenic, nitrates or other hazardous materials
- 100 percent of copper sulfide mines experienced pipeline spills and accidental releases and 92 percent failed to control water treatment and collection leading to contaminated mine seepage

There are several examples of mines that have polluted nearby ground or surface water in a new report Earthworks released today titled "U.S. Gold Mines, Spills & Failures Report." The report cites 27 mines that have accidentally released, spilled, or failed to capture and treat mine impacted water, allowing it to pollute nearby waters.

For example, the Wharf Mine, now owned by Coeur Mining Company, violated its surface water discharge permit with the release of biomass from its water treatment plant during the summer of 2007. The discharge affected fish populations in Annie Creek. Wharf also violated its permit limits for certain pollutants. Wharf was issued a civil penalty of \$214,930. Because of this and other spills and failures, groundwater has been polluted with nitrates, arsenic and cyanide. Annie Creek has been polluted with selenium, ammonia, cyanide, arsenic. Adverse impacts to surface water in Annie Creek resulted in a fish kill, and adverse impacts to the fish population.

Another Coeur Mining Company mine, the Kensington Mine, is a poster child for taking advantage of the Clean Water Act loophole to preserve mining industry profits at the expense of clean water. Because of the loophole, Coeur Alaska Mining Company was allowed to dump 200,000 gallons per day of a toxic wastewater slurry directly into Lower Slate Lake in the Tongass National Forest. The dumping, which will eventually deposit 4.5 million tons of solids in the lake, has turned what was once a pristine body of water into mine tailings disposal site.

The innovative solution to many of the challenges highlighted above is meaningful reform of the 1872 Mining Law. Earthworks encourages legislation that will provide a fair return to the taxpayer, create a robust reclamation fund to deal with our Nation's abandoned mines problem, require mining companies to comply with 21st century operation and reclamation standards to protect clean water and allow mining to be properly balanced with other uses of public lands.

FAIR RETURN

Since 1872, at least \$245 billion worth of public minerals like gold, silver, copper, and uranium have been mined with no return to the taxpayer. Only a value-based gross royalty will help ensure a fair return. Gross royalties link directly to the revenue mining companies receive from the sale of our minerals. Most western mining states, 10 of 13, assess some form of gross royalty.

A net profits (also known as net proceeds) royalty, by contrast, enables a mining company to deduct their cost of doing business from their income before the royalty is charged. This royalty scheme allows extensive administrative, business and operating deductions, beyond those associated with processing mined ore into marketable commodities.

Two states, Alaska and Nevada, have a net proceeds royalty/fee. Between 2000 and 2005, Nevada mining operations sold \$16.4 billion of minerals (mostly gold), yet they only paid royalties of \$158 million, less than 1 percent. Half of the Nevada's mining operations paid no state royalties at all during that time. Alaska fared even worse. Between 1997 and 2007, Alaska collected only \$1.2 million in royalties despite the gold's value at more than \$1.2 billion.

This experience demonstrates that a net proceeds approach will not generate a fair return to the taxpayer, and a gross royalty is what is needed.

RECLAMATION FEE

Modern mining needs modern rules. This includes dealing with the legacy costs mining has passed along to present and future taxpayers. Insulating taxpayers from the financial risks of old and abandoned mines requires a steady stream of dedicated funding. Otherwise, taxpayers will bear more of the cleanup costs.

Earthworks estimates that there are over 550,000 abandoned hardrock mines in the United States, mostly in the West. The Interior Department has no comprehensive inventory of abandoned hardrock mines, and funds to clean up these sites

remain limited. The Environmental Protection Agency (EPA) estimates the total cleanup costs could reach a staggering \$50 billion.

Western communities face significant burdens associated with these old mines. According to the EPA, at least 40 percent of the stream reaches in the headwaters of western watersheds are polluted from mining. That's because many abandoned mine sites have significant acid mine drainage problems, which can persist for thousands of years if left untreated.

The single largest obstacle to the restoration of abandoned hardrock mines is the lack of funding. In states like Montana—where revenues exist from a state severance tax and the state is authorized to restore abandoned mines with revenues from the coal abandoned mine land fund—there is a small stream of revenue (on average about \$3.5 million) available to remediate only a few small sites a year, but it is not enough to address the serious problems posed by the 6,000 inventoried abandoned mines across the state, and the estimated 3,700 miles of rivers and streams polluted by harmful metals, primarily from abandoned mines.

In other states, such as California and New Mexico, there are few sources of funds available to correct this pervasive problem in old mining districts. As a result, the number of abandoned mine lands that cause safety or environmental hazards far outweigh the funding available to restore them. A steady stream of long-term funding for hardrock abandoned mine lands cleanup, similar to the coal abandoned mine fee and program, is essential to dealing with the scope of the problems western states face from abandoned mines.

ENVIRONMENTAL AND OPERATING STANDARDS

Any meaningful plan for the future of mining should include general environmental performance and operational standards. The 1872 Mining Law has none. The Bureau of Land Management (BLM) 3809 mining regulations have undergone few significant changes since they were originally implemented in 1980. Under current law, there are no statutory environmental standards written specifically for hardrock mining. Neither the Clean Water Act nor Resource Conservation and Recovery Act protect groundwater from mining pollution, and there is no definition for how to reclaim a mine.

Environmental standards should be “performance based” or “outcome based,” indicating what the resources affected by mining need to look like from the initial dirt moving to the post-mining land use. The standards need not dictate how they are met, just lay out benchmarks for the industry during exploration, operation, closure, and post-closure. These include handling of soils, revegetation, and establishing and maintaining fish and wildlife habitat.

Operations must minimize damage to surface and groundwater resources, and result in minimal disturbance to the prevailing hydrologic balance. To meet water quality standards, operators must minimize the production of polluted water rather than relying on water treatment. They must receive specific direction to minimize acid mine drainage. Operators must also minimize the loss of water quantity.

Operational standards help mitigate some of the impacts mining activities commonly create during operation. These standards cover construction and maintenance of haul roads, impoundments, waste piles, and leaching pads. They provide direction for drilling holes, managing acid-forming materials, public safety, and other activities.

BALANCING MINING WITH COMPETING LAND USES

The Federal Government currently interprets the 1872 Mining Law as mandating that mining is the highest and best use for public lands. This eliminates any discretion for Federal land managers to balance mining with any other land use—recreation, conservation, hunting, drilling etc. Land managers should have clear authority to weigh competing land uses, especially in Wilderness Study Areas, Areas of Critical Environmental Concern, roadless areas, and lands in the Wild and Scenic River System.

In addition, citizens, local, state, and tribal governments should have the ability to put lands off limits to mining. Mining reform should enable these entities to petition the Secretary of the Interior to put lands that are important for other values, such as drinking water, off limits to mining.

I thank you for the opportunity to present Earthworks' view on seeking innovative solutions for the future of hardrock mining. We look forward to working with this Subcommittee, and other stakeholders, to reform the Mining Law of 1872 to fully protect communities, the environment and taxpayers.

QUESTIONS SUBMITTED FOR THE RECORD BY REP. GOSAR TO LAUREN PAGEL, POLICY DIRECTOR, EARTHWORKS

Question 1. Regarding the Kensington Mine, could you please give the Subcommittee more detail about the quality and character of Lower Slate Lake pre-mining?

Answer. According to the Environmental Impact Statement for the Kensington Mine, several types of aquatic life were found in Lower Slate Lake pre-mining:

“As Kline (2003b) indicates, fish surveys conducted during June 2000, August and September 2001, and October 2003 have documented the occurrence of Dolly Varden char throughout the Slate Lake and Slate Creek system. Two-way fish passage occurs between Lower Slate Lake and approximately 1,500 feet of East Fork Slate Creek below the lake. Kline (2003b) indicated, however, that Dolly Varden char redds have been documented in the littoral zone of Lower Slate Lake. Their spawning appears to be quite variable in timing between years and might occur as early as July. In addition to Dolly Varden char, three-spine stickleback (*Gasterosteus aculeatus*) have been captured in Lower Slate Lake (Kline, 2001).”

It was clear from the Environmental Impact Statement that the choice to use Lower Slate Lake as a tailings dump would harm the lake and everything living in it. The mining company had an upland alternative for disposal, but chose the more destructive alternative:

“Alternatives B, C, and D include tailings disposal in Lower Slate Lake through a slurry pipeline from the mill. For the purposes of this analysis, it is expected that all fish and most other aquatic life (such as macroinvertebrates, periphyton, and zooplankton) in Lower Slate Lake would be lost during operations as a result of this action.”

Question 2. Can you explain the specific provisions in Clean Water Act regulations that allow for untreated mine waste to be dumped into a lake?

Answer. There are two loopholes in regulations adopted by the EPA and Army Corps of Engineers that allow many hardrock mines to dispose of mine waste into waterways, destroying fish and other aquatic life. The first loophole is a 2002 revision of regulations expanded the definition of “fill material” under Section 404 of the Clean Water Act to include mine waste. Section 404 was intended to regulate the placement of rock, soil, clay, sand and other materials normally used in construction related activities, not mining waste. The second loophole is a regulation defining “waters,” allow mine developers to designate natural lakes, rivers, streams, and wetlands as “waste treatment systems,” exempt from the Clean Water Act.

Question 3. Could you please detail specific references that enumerate the water quality issues and water pollution problems stemming from hardrock mining in the United States?

Answer. Please find several studies detailing the water pollution issues at hardrock mines in the United States:

A 2012 peer-reviewed study of the track record of water quality impacts from copper sulfide mines found severe impacts to drinking water aquifers, contamination of farmland, contamination and loss of fish and wildlife and their habitat, and risks to public health. In some cases, water quality impacts were so severe that acid mine drainage at the mine site will generate water pollution in perpetuity. https://www.earthworksaction.org/files/publications/Porphyry_Copper_Mines_Track_Record_-8-2012.pdf.

A 2006 study found that faulty water quality predictions, mitigation measures and regulatory failures result in the approval of mines that create significant water pollution problems. Despite assurances from government regulators and mine proponents that mines would not pollute clean water, researchers found that 76 percent of studied mines exceeded water quality standards, polluting rivers, and groundwater with toxic contaminants, such as lead, mercury, arsenic and cyanide, and exposing taxpayers to huge cleanup liability. <https://www.earthworksaction.org/files/publications/ComparisonsReportFinal.pdf>.

A lengthy review of government documents reveals that an estimated 17 to 27 billion gallons of polluted water will be generated by 40 mines each year, every year, in perpetuity. This is equivalent to the amount of water in 2 trillion water bottles—enough to stretch from the earth to the moon and back 54 times. <https://www.earthworksaction.org/files/publications/PollutingTheFuture-FINAL.pdf>.

A 2017 study of U.S. gold mines' operating records reveals that major gold mines surveyed by the U.S. Geological Survey have spilled contaminants, and 74 percent polluted water with cyanide, arsenic, nitrates or other hazardous materials. <https://www.earthworksaction.org/files/publications/USGoldFailureReport2017.pdf>.

Dr. GOSAR. I thank the gentlewoman.

The gentleman, Mr. James Cress, the Counsel for Bryan Cave, is now recognized for 5 minutes.

**STATEMENT OF JAMES CRESS, COUNSEL, BRYAN CAVE LLP,
DENVER, COLORADO**

Mr. CRESS. Thank you, Mr. Chairman, Mr. Ranking Member, and Subcommittee. I appreciate the opportunity to appear today. I am a mining lawyer. I have practiced mining law for about 30 years, and have represented mining companies and landowners in royalty negotiations, both in the United States and in other countries. I also do a lot of work with indigenous and local communities on a pro bono basis, attempting to help them get a better deal and more benefits from mining that takes place in their communities.

I would like to ask that my written testimony be included in the record, because I, doubtless, will not get through it here.

The first question I think that you have to look at, if you are deciding whether to impose a royalty, is what is a royalty for, what does it compensate the United States for. A royalty is not a way to fund any particular policy objective. It is really a payment to the United States for the value of what the United States is providing to the industry. And that value is raw land with mineralization that needs to be explored, processed, and mined in order to have any value.

That exploration, development, and mining is very expensive. And that is why mining royalties are typically lower than royalties on coal, oil, and gas, which are a completely different structure, where you have a usable commodity that is actually produced right out of the ground.

The total government take is the other thing that you have to keep in mind. It is not just a royalty that matters when you are looking at a financial return to the government. It is all the other taxes, including severance taxes and royalties imposed at the state level that companies will compare to decide whether to operate in Nevada or Indonesia, and they do make that comparison.

There have been studies on this. In 2000, Professor James Otto and others did a comparative study of jurisdictions that found that Nevada actually ranked right at the high end of competitive jurisdictions for total tax burden: 49.3 percent of revenue was taken in the form of taxes, royalties, and other burdens. And that is without a Federal royalty. In Arizona, that was 49.9 percent for where most of our copper comes from.

They modeled in this study what would happen if prices dropped by 10 percent and Nevada's effective tax rate jumped to 63 percent, which is in the confiscatory end of the spectrum. So, you have to keep in mind the overall burden.

I would like to talk a little bit about the form of a royalty, because we talk a lot about gross royalties and net royalties, and it

is important to understand that there are two components here. One is the rate, and we compare and throw around these numbers all the time—8 percent, 5 percent, 2 percent—but the important factor is what is the royalty base, or the definition of what that percentage is applied against.

A gross royalty is a royalty that does not allow a lot of deductions, or any deductions, depending on how it is characterized. A net royalty will allow for deductions of processing costs, refining costs, and sometimes mining costs, so there is kind of a spectrum from net profits to totally gross royalties that we are looking at. And you have a lot of options. You can innovate here in adopting a royalty. You don't have to go with a straight gross or a net profit.

Hardrock minerals have been subject to severance taxes in the western states for a long time. I studied the General Accounting Office 2008 report, which gave a listing of all of the different taxes and compared which ones were gross and net. In analyzing that report and the 2008 statutes that they were looking at, I found that 10 of the 13 western states have mostly used a net royalty or a small royalty that is called gross, but it is a gross royalty based on the ore, which really is not a gross. It is not based on the gold that comes out at the end of the process, for example.

Five states use net profits or net proceeds royalties: Alaska, Nevada, California, Montana, and Arizona. Seven states use a small net or small gross royalty, including Colorado, Idaho, Montana, Oregon, South Dakota, Utah, and Wyoming.

So, I would encourage you to look at the examples in deciding whether a royalty is appropriate, and how much is too much. Thank you very much.

[The prepared statement of Mr. Cress follows:]

PREPARED STATEMENT OF JAMES F. CRESS, COUNSEL, BRYAN CAVE LLP

Mr. Chairman and members of the Subcommittee, my name is Jim Cress. I am testifying today on the subject of mining royalties at the request of the Subcommittee and not on behalf of any organization. I am a mining lawyer in private practice at Bryan Cave LLP in Denver. With Bryan Cave and a predecessor firm, Holme Roberts & Owen, I have specialized for nearly 30 years in U.S. and international mining law, as well as oil and gas and coal law. I have represented mining companies and landowners in negotiating royalties for gold, silver, copper, iron, zinc, coal, uranium, barite, oil and gas and other minerals, and have advised clients on royalty compliance for private, Federal and state royalties and mineral severance taxes. In my international practice, I have evaluated mining royalties and taxes and negotiated royalty and mining agreements with governments in a number of countries. I have also devoted substantial pro bono time to mining issues, particularly in developing countries. I worked on the royalty provisions in the International Bar Association Mining Law Committee's Model Mine Development Agreement, an example template for a mining agreement between a developing country government and mining company. I have supported local and indigenous communities in obtaining more equitable participation in the benefits of mining through the non-profits Sustainable Development Strategies Group and RTC Impact Fund.

Thank you for the opportunity to appear and speak on the important issue of hardrock mining royalties. I have previously testified on this subject before this Subcommittee and before the Senate Energy & Natural Resources Committee, and my comments today will reflect on some of the same issues, which are difficult ones. In particular, if Congress determines that a royalty on locatable hardrock minerals is needed, how can Congress structure a royalty on to promote a fair return to the public, while ensuring a viable domestic mining industry that minimizes reliance on foreign imports of strategically critical minerals?

WHAT DOES A ROYALTY COMPENSATE? HOW MUCH IS TOO MUCH?

The threshold policy question for evaluating a Federal hardrock mining royalty is what is the policy reason for compensating the United States with a royalty? Any royalty payment to the United States for hardrock minerals should be based on the value of the United States' ownership interest in the minerals. That interest is limited to the raw minerals in the ground. The purpose of the Federal royalty is to encourage exploration and discovery across millions of acres of Federal land which are not yet proven to contain mineral deposits. Compared to oil & gas and coal and similar bedded deposits like sodium and potassium, hardrock deposits are much harder to find and generally require much more extensive mining, processing and refining to produce salable products. A royalty should not be paid on value added to the raw minerals by a mining company spending hundreds of millions of dollars to find, process, refine and sell the mineral products. The United States makes land available for mineral exploration, but the United States contributes nothing to the enormous costs and effort of finding, producing and processing the minerals.

Mining companies pay income and many other taxes in the United States. Any discussion of Federal hardrock royalties should focus not only on the amount of the royalty, but on the entire tax and royalty burden applicable to mining. Mining companies take the same holistic view of the cost of doing business when they are deciding whether to invest their exploration and mine development capital in the United States or another country.

The total "government take" (royalties, taxes and other fees) for mining operations in the United States is already comfortably within the range of other competitive mining countries. Professor James Otto and others have conducted various studies comparing government take from mining in various countries, which included the states of Arizona and Nevada (two of the highest mineral producing western states with substantial Federal lands). The most recent public study was published in 2000. Otto, Batarseh & Cordes, *Global Mining Taxation Comparative Study (Second Edition)* (Institute for Global Resources Policy & Management Mar. 2000) ("Global Mining Taxation"). The study evaluated all of the direct and indirect taxes on mining (including royalties) in 24 countries, including a range of developed and developing countries. The authors then modeled the impact of "government take" in these countries on two hypothetical mineral deposits, a gold mine and a copper mine, to evaluate and compare the burden imposed by these tax and royalty regimes.

Professor Otto testified in 2008 before the Senate Energy and Natural Resources Committee that his studies have shown that many mineral producing countries impose a total effective tax rate (government take) in the range of 40 to 50 percent. In the Global Mining Taxation study, the effective tax rate in 2000 for Nevada was 49.3 percent for a medium-profitable gold mine, without the imposition of any Federal royalty. See Global Mining Taxation, Section 4.5, pp. 95–96 and Table 27. With a 10 percent drop in the gold price from the 2000 price, Nevada's effective tax rate jumped to a confiscatory 63 percent. *Id.* p. 101 and Table 28. Similarly, the effective tax rate in 2000 for the hypothetical copper mine in Arizona was 49.9 percent, without the imposition of any Federal royalty. *Id.* Section 4.5, pp. 95–96 and Table 27. These studies suggest that even a small Federal royalty could take the United States out of the 40–50 percent effective tax rate range typical for successful mineral producing countries, making the United States less competitive for mining investment.

It would be prudent to update these studies in designing any Federal royalty, so the impacts can be modeled and understood. Significantly, as discussed below, almost all of the western states already impose a severance or extraction tax on mining from private, state and Federal lands. Any Federal royalty will have to be added on top of these existing burdens, making it crucial that the royalty not be so high that the combined burden makes future mining uneconomic, negatively impacting state tax revenues and driving mining activity off of Federal lands.

FORM OF A HARDROCK ROYALTY—GROSS VERSUS NET ROYALTIES AND ROYALTY RATES

There are many types of royalties used in the mining industry and by governments around the world, from simple unit-based royalties (a fixed amount per ton produced) to royalties based on net proceeds or net profits after deduction of mining and/or processing costs, to gross royalties with little or no deductions. The latter two types, often referred to loosely as "net" and "gross" royalties, are most often proposed for a potential Federal hardrock royalty.

There are two issues to consider when evaluating net and gross royalties—the royalty rate and the calculation of the amount against which that rate is applied (also called the "royalty base"). Differences in the royalty base are what we are

discussing when talking about “net” versus “gross” royalties. It is important to look closely at the definition of the royalty base when comparing private royalties to government royalties or comparing royalties of different countries or U.S. states, since what may be called a “gross” royalty may actually be based on the “gross value of ore,” rather than a final mineral product, the “gross value less processing costs,” “gross value at the mine mouth” or another royalty base definition that is functionally equivalent to a net royalty base. “[T]he definition of the royalty base is critical to understanding the rate. When comparing royalty rates in different jurisdictions, care must be taken not to compare rates unless the royalty base is identical.” Otto, et al., “Mining Royalties: A Global Study of Their Impact on Investors, Government, and Civil Society” p. 62 (World Bank 2006) (“World Bank Study”).

Net royalties and gross royalties have differing impacts on mining investment due to the cyclical nature of commodity price cycles. Generally, a royalty assessed on gross income increases the economic risk of a given mining investment, and acts as a disincentive to investment. As a consequence, a company looking to develop a project will require a higher required pretax and after-tax rate of return to accommodate the increased risk. Because a royalty assessed on net income has a smaller effect on the variability of after-tax rates of return, it is a better basis for assessing a royalty. As commodity prices decrease, the rate of return required to justify a mining investment increases more dramatically under a gross royalty than under a net royalty. Because the other costs of the mining operation are relatively fixed, the gross royalty takes a bigger bite out of the shrinking income pie as prices decrease. This can have a dramatic impact on whether existing mines stay open or new mines are built.

Because the royalty assessed on gross income will cause a larger reduction in after-tax income when profits are low (or negative) than a royalty assessed on net income, the royalty on:

A gross royalty can exacerbate industry downturns by causing a greater reduction in the cash-flows of mining companies when profits are already low. A gross royalty may actually reduce the volume of an ore deposit that can be recovered. Each deposit of metallic minerals will have varying grades of mineral, generally requiring extensive concentration and refining to be marketable. The portion of the deposit with grades too low to be recovered economically is either removed as waste or left undisturbed in the ground. A gross royalty raises the “cutoff point” between recoverable ore and waste, and may shorten the life of a mine by causing what otherwise would be valuable minerals below the cutoff point to be lost. These lost reserves generally can never be recovered, because once a mine is closed and reclaimed, the stranded reserves are usually uneconomic to recover on their own in the future. When mines shut down prematurely, in addition to lost mineral reserves, jobs are lost, Federal state and local tax revenues are lost, and business is lost by suppliers of other goods and services that support the mines. These lost economic benefits affect both those directly involved in the mining activity and the governmental entities, including the United States, and their citizens who rely on taxes paid by mining operations.

A net proceeds or net income royalty, in contrast, does not cause a mining operation to operate at a loss. A net royalty automatically reduces during periods of low prices and increases again when prices are higher, permitting mining operations to weather periods of low commodity prices and maximize the recovery of marginal ore during periods of high prices. Due to the cyclical nature of demand for mineral commodities, there have been and will always be periods of lower commodity prices. A net royalty provides the best incentive to explore for minerals on Federal lands throughout economic cycles and keep the domestic industry viable and the Nation’s mineral supply secure.

Determining what rate is appropriate to apply across dozens of commodities and millions of acres of Federal land with differing mineral potential should not be a matter of opinion or guesswork. Congress should look closely at the type and rate of hardrock mineral royalty that has worked in states and countries that have maintained vibrant mining industries.

HARDROCK MINERALS ARE DIFFERENT, AND SHOULD BE TREATED DIFFERENTLY THAN
COAL AND OIL AND GAS

Why should hardrock minerals not be subject to the 8 percent or greater royalty imposed on oil & gas and coal? The dramatically different characteristics of the minerals themselves and the ways in which they are explored for and developed justifies different royalty treatment. The royalty on oil produced under Federal leases is not based upon the value of these refined products, however, it is measured by

the value of the crude oil at the lease or wellhead, prior to such processing and refining. Unlike most hardrock minerals, there is a market for oil in its crude, unrefined state and therefore a ready value for royalty purposes before the value added by refining and processing. Most oil is sold at the wellhead into this crude oil market and that wellhead sales price establishes the value of the oil for Federal royalty purposes. Thus, it is somewhat misleading to call the Federal royalty on crude oil a “gross” royalty, because the royalty is “net” of refining costs, equivalent to a net or mine mouth royalty on the value of raw ore in a hardrock operation.

Similarly, Federal royalty on gas is also based upon the value of the gas at the lease. After gas is extracted, often the only thing required for consumption by the ultimate end-user is transportation (the cost of which, if paid by the producer, is deducted before royalties are calculated). Sometimes further processing is required to remove sulfur and separate gasoline, butane and other constituents from the gas. The royalty, however, remains payable on the value of the gas at the lease or wellhead and the processing costs incurred by the producer downstream of the lease are deducted under the Federal rules before calculating royalty, to arrive at essentially a “net” value at the lease.

Coal is a solid mineral of generally uniform quality and composition that requires little or no processing. In the West, where most Federal deposits exist, coal beds are vast, world-class deposits of great thickness, in Wyoming averaging 80 feet and up to 200 feet. Little exploration for coal is required, and it is relatively easy to determine the quality of the coal and the thickness of a seam prior to mining with drilling and sampling. While the 12.5 percent royalty for surface mined coal (8 percent for underground) imposed in 1976 was a substantial increase over coal royalties typical at the time, the royalty did not take effect for many Federal coal leases until they were readjusted, which occurred over a period of 20 years. In addition, the Federal coal royalty regulations permit the deduction of the most material post-mining costs, coal washing (where needed) and transportation. Thus, the Federal coal royalty is not a gross royalty in the strictest sense, and like oil and gas, is more akin to a net or mine mouth royalty on the value of raw ore in a hardrock operation.

Oil and gas and coal are not the only leasable minerals on Federal lands. Sodium, potash, and phosphate are leasable minerals that are low margin industrial and fertilizer minerals, the economics of which cannot support a 12.5 percent or even an 8 percent royalty. The statutorily established base rate for phosphate is 5 percent and for sodium and potassium is 2 percent. That is because the nature of these commodities and the economics around their extracting and marketing differ from oil and gas and coal. In practice, these mines have operated under government-sanctioned reduced royalties during periods when economic conditions and foreign competition threatened to close the mines.

These examples demonstrate clearly why prevailing royalties differ from mineral to mineral. Specific analyses can be made for many other types of minerals. It is clear, however, that application of a gross royalty at a rate of 8 percent to hardrock minerals simply because that is what is done with coal and oil and gas would be overly simplistic and dangerously naive.

STATE ROYALTIES AND SEVERANCE TAXES ARE GENERALLY NET ROYALTIES OR SMALL GROSS ROYALTIES

Western states, in which most Federal lands are located that would be subject to a Federal hardrock royalty, tend to impose two types of burdens on hardrock mining—royalties on mineral production from state lands and severance taxes on private, state and Federal mineral production. Both are calculated using a percentage of the value of the mineral produced, so both can be useful as comparisons for a Federal royalty.

The approaches of the western states to royalties and severance taxes, including the use of net or gross, vary considerably (with more than one approach sometimes used in the same state), but most states include a net approach or an approach based on the gross value of ore or mine mouth value, which is equivalent to a net. State royalties and severance taxes were summarized by the General Accounting Office in a 2008 study. *See* “Hardrock Mining: Information on State Royalties and Trends in Mineral Imports and Exports,” GAO-08-849R (GAO July 2008) (2008 GAO Report).

Western states apparently do not perceive that net approaches impose undue burdens on the state in calculating and collecting royalties and severance taxes. No state imposes a flat royalty on gross income without any deductions like the royalty often proposed in prior mining law and budget bills. In addition to their varied approaches to the royalty or severance tax base, the states all impose significantly lower royalty or severance tax rates than the 8 percent gross royalty that has often

been proposed in prior mining law and budget bills. Rates in the western states tend to be lower for gold, copper and other metals.

The various western state approaches to royalty and severance tax base are discussed below in a continuum from the most “net” to the most “gross” approaches. This summary is based on the 2008 GAO Report, the most recent survey of state royalty and severance tax laws, and has not been updated, but the variety of state approaches have not differed materially since its publication.

Net Profits or Net Proceeds

A number of states define the royalty base or severance tax base on a net profits or net proceeds basis. These state burdens are truly “net,” in the sense that the royalty base is typically determined after deduction of all mining and processing costs and transportation.

Alaska imposes a royalty of 3 percent of net income on mining from state lands. Alaska Stat. § 38.05.212. Alaska also imposes an additional mining license tax (similar to a severance tax) that is calculated as a percentage (between 3 and 7 percent) of the net income from the property. Producing mines are exempted from the tax for 3½ years, in order to allow them first to recover their capital costs. Alaska Stat. Tit. 43, Ch. 65.

Nevada imposes a severance tax of between 2 and 5 percent of net proceeds. Nev. Rev. Stat. Ann. Ch. 362. “Net proceeds” is defined as the gross value of the mineral product, less deductions for extraction costs, processing, refining and sale costs, costs of transportation from the mine to the place of processing and sale, marketing costs, maintenance and repair costs for machinery, facilities and equipment used in mining, processing and transportation, depreciation of such facilities and equipment, insurance costs, costs of employee benefits, development costs, royalties, and certain administrative overhead costs. *Id.* § 362.120; Nev. Admin. Code Ch. 362. This tax is phased in as the percentage of net proceeds to gross proceeds increases, with the lower rate applying to operations generating \$4 million or less in annual net proceeds.

California imposes a royalty on state lands on a lease-by-lease basis. One basis used is a percentage of the net profits derived from mineral extraction operations. *See* Cal. Pub. Resources Code § 6895.

Montana taxes the net proceeds of minerals other than coal, bentonite and metal mines (metal mines are taxed on a net smelter returns basis as described below). Mont. Code Ann. § 15–6–131(1),(2). *Id.* § 15–23–503. The “net proceeds” tax base is defined as gross receipts received from the sale of concentrates or metals, less allowable deductions. Deductions allowed include royalties paid, costs of labor, machinery and supplies used in mining operations and development, costs of improvements, repairs or replacements to the mine, mill or reduction works, and depreciation of the mill and reduction works, transportation from mine to mill or place of sale, marketing costs, insurance, environmental, reclamation and mine safety compliance costs, sampling and assaying charges, engineering and geological service charges.

“Net profits” are defined as gross receipts from the sale of precious metals, less deductions for the cost of extraction, transportation from mine to mill, the costs of reduction, refining and sale, marketing costs, costs of maintenance and repairs of mining, processing and transportation machinery, equipment and facilities and administrative facilities, interest costs, insurance costs, employee benefits, depreciation of machinery, equipment and facilities, mine exploration and development costs, reclamation costs, royalty payments, state and local taxes, and general administrative expenses incurred within the state. *Id.* §§ 10–39–44, 10–39–45.2.

Arizona also had a royalty on state land of 5 percent of the net value of minerals, until a 1989 state supreme court decision overturned this method as being inconsistent with the state’s enabling act (a rationale that would not apply to a Federal royalty). Ariz. Rev. Stat. § 27–234 (repealed); *see Kadish v. Arizona State Land Department*, 155 Ariz. 484; 747 P.2d 1183 (1987).

Gross Value of Ore or Mine Mouth Value

A number of western states have imposed royalties or severance taxes that are based on the gross value of the unprocessed ore or mine mouth value. This is the functional equivalent of a net proceeds or net profits approach, with deductions for all processing and transportation costs and, in some states, mining costs.

Colorado’s severance tax is 2.25 percent of the gross value of the ore, excluding any value added subsequent to mining, and subject to an exclusion for the first \$19 million in income and credits for property taxes and any state land royalties. Colo. Rev. Stat. §§ 3929–102 to –104. Colorado state land royalties are determined on a case-by-case basis, *see* Colo. Rev. Stat. § 36–1–113, but gross value of ore has been

used for some minerals, and net smelter returns for others. *See* “Royalties in the Western States and in Major Mineral-Producing Countries,” GAO/RCED-93-109, p.28 (GAO 1993) (“1993 GAO Report”).

Idaho imposes a license tax (equivalent to a severance tax) of 1 percent of the gross value of ore, after deducting all costs of mining and processing the ore. Idaho Code §§ 47-1201, 47-1202. Idaho, like Colorado, imposes state land royalties on a case-by-case basis in each lease, *see* Idaho Code § 47-710, and has in the past also used a royalty of between 2.5 percent (for certain metals) to 10 percent (for certain non-metallic minerals) of the value of the unprocessed ore. *See 1993 GAO Report*, p.30.

Utah has imposed a royalty on minerals extracted from state lands of a specified percentage of the value of the minerals, including a royalty of 4 percent of the gross value of the ore sold for metals other than uranium. *See 1993 GAO Report*, p.43.

South Dakota imposes a royalty on leases of state lands of not less than 2 percent of the gross returns from the sale of ores and mineral products derived therefrom, less smelting and reduction charges and transportation and any other “customary and appropriate charges” determined by the state land commissioner. S.D. Cod. Laws § 5-7-55. If the ore is sold, this constitutes a royalty on the “gross value of ore” without a deduction for mining costs.

Wyoming’s severance tax is based on the fair market value of the minerals at the mouth of the mine, after extraction. Wyo. Stat. § 39-14-703. This royalty base is also equivalent to the value of ore, like the states above, but without a deduction for mining costs.

Montana imposes a royalty on state lands of at least 5 percent of the market value of the minerals recovered. Mont. Code Ann. § 77-3-116. Montana has in the past defined this royalty as a percentage of the value of the raw minerals recovered from the claim, *See 1993 GAO Report*, p. 32; 2008 GAO Report, p.18-19, which is similar to the “gross value of ore” used in the states described above.

Oregon imposes a royalty of 5 percent on most metallic minerals removed from leases of state lands. Or. Admin. R. §§ 141-071-0410, -0610. The royalty base is calculated on the gross value of minerals at the mine mouth. *Id.* § 141-071-0620; *See 2008 GAO Report*, p.25.

Net Smelter Return and Similar Approaches

Several states employ net smelter return or similar methodologies in their royalties or severance taxes. Net smelter return approaches are more common in state land royalties, which may be in part because of the trust requirements imposed by state enabling statutes on state lands, as discussed above.

Montana imposes a license tax (similar to a severance tax) on metal mines of 1.6 percent of the net smelter returns for precious and base metals. The tax is 1.8 percent on mineral concentrates prior to shipment to the smelter. Mont. Code Ann. §§ 15-23-801, 15-37-102, 15-37-103. The tax base is the receipts received from the sale of concentrates or metals, less allowable deductions. Deductions allowable in calculating the tax include treatment and refinery charges, costs of transportation from the mine or mill to the smelter, roaster or other processing facility, quantity, price, impurity and penalty charges, and interest. *Id.* § 15-23-801(5). Treatment and refinery charges include labor cost, utility and fuel costs, costs of maintenance, repairs and supplies, materials, depreciation, rental of equipment, pollution control costs, costs of training, freight, engineering, insurance and licensing attributable to smelting and refining, administrative services and all third party treatment and processing costs. *Id.* § 15-23-801(2).

New Mexico imposes a royalty on state lands of not less than 2 percent of the gross returns from the smelter or other processing facility, less the costs of smelting or reduction and transportation. N.M. Stat. Ann. § 19-8-22. This is functionally a net smelter returns royalty. The royalty percentage is not less than 5 percent for uranium and certain other minerals.

South Dakota imposes a royalty on leases of state lands of not less than 2 percent of the gross returns from the sale of ores and mineral products derived therefrom, less smelting and reduction charges and transportation, and any other “customary and appropriate charges” determined by the state land commissioner. S.D. Cod. Laws § 5-7-55. If concentrates or metals are sold and no other deductions are allowed by the commissioner, this is equivalent to a net smelter return.

As an alternative to the net profits royalty base described above, **California** may impose on a case-by-case basis a royalty on state lands based on 10 percent of the gross value of the mineral production less processing and transportation charges,

which is similar to a net smelter return calculation. See Cal. Pub. Resources Code § 6895.

Gross with Flat Cost Deduction

Two states use an innovative “gross with flat cost deduction” severance tax system. This approach attempts to approximate the economic burden of a net profits or net proceeds tax, while minimizing the administrative burden by eliminating the need to audit mine-specific cost deductions, by allowing a flat deduction of a percentage of gross proceeds to approximate the deduction of mining and processing costs. These states apply different tax rates to different minerals, and permit different flat cost deductions for different types of mineral products. This is not a “net” approach, however, because the flat cost deduction treats all mining operations the same regardless of their actual costs; this system is effectively a small gross burden that varies for different minerals. The administrative simplicity of the flat deduction has been somewhat offset by the need to amend the statute more frequently to ensure that the size of the flat cost deduction reflects actual costs to the extent possible, and to address concerns of particular mineral producers with higher processing costs, such as beryllium miners in Utah.

New Mexico imposes a severance tax of between $\frac{1}{8}$ and $\frac{1}{2}$ of 1 percent (depending on the metal or mineral) of the “taxable value.” Taxable value is the value of a specific mineral product (concentrates for molybdenum, copper, lead and zinc, concentrate or ore for gold) less 50 percent to $66\frac{2}{3}$ percent of that value to approximate the costs of mining and processing. The tax rate and cost deductions differ for various minerals.

Utah’s severance tax is 2.6 percent of the “taxable value,” which is determined based on the product sold. If the mineral product sold is ore, the taxable value is 80 percent of the gross proceeds, with the 20 percent of the value excluded approximating a deduction for mining and transportation costs. If the product sold is metal (other than beryllium), the taxable value is 30 percent of the gross proceeds, with the remaining 70 percent of gross proceeds approximating a deduction for mining, processing and transportation costs. Beryllium formerly had a taxable value of 20 percent of the gross proceeds, with an 80 percent deduction for costs, but taxable value is now equal to 125 percent of the mining costs. For intermediate mineral products such as copper concentrate, the taxable value is based on the amount of contained metal in the product if the intermediate product is further processed rather than being sold at the point of taxation.

Gross Receipts from First Marketable Product

Washington imposes a royalty on minerals extracted from state lands of 5 percent of the gross receipts. “Gross receipts” are based on the value of the first marketable product, subject to the deduction of transportation costs. Wash. Admin. Code §§ 332–16–035, 332–16–155. This royalty appears to be either a gross or net burden depending on the mineral product sold, whether ore, concentrates or finished metals. Washington has no severance tax, which may help offset the impact of this potentially more gross royalty calculation.

Unit-Based Severance Taxes on Specific Minerals

Several states impose an additional, unit based severance tax on particular minerals. A unit-based tax is not based on a percentage of the value of the mineral, such as the net and gross ad valorem approaches described above, but is a flat dollar amount per unit of mineral produced. These taxes tend to be aimed at large producers or particular minerals in these states, presumably because the states have determined they are able to bear a higher tax burden. Unit-based royalties are not a good basis for designing a Federal royalty, which must apply to many commodities and many types of mining operations.

Colorado imposes an additional severance tax of 5 cents per ton of molybdenum ore for all tons over 625,000 produced in a calendar quarter. The quantity limitation limits the tax primarily to two of the largest molybdenum mines in the world that have operated in Colorado for decades.

South Dakota imposes a severance tax on gold of \$4 per ounce, plus an additional \$1 to \$4 dollars per ounce depending on the gold price. *Id.* § 10–39–43.

ANY HARDROCK ROYALTY LEGISLATION SHOULD ALLOW FOR ROYALTY REDUCTIONS AND WAIVERS ON A CASE-BY-CASE BASIS

All current Federal royalty statutes for oil and gas, coal and other minerals permit the Department of the Interior to grant royalty waivers and reductions on a case-by-case basis. The same flexibility should be provided in any hardrock mining

statute. In order to avoid administrative complexity, any hardrock royalty will probably have to be applied in a fairly uniform manner across a large number of commodities and mining and processing methods. Any inequities created by this broad brush approach can be partially addressed by providing a mechanism for specific operations or mineral commodities to apply for royalty relief, in order to address economic hardships or to maximize the economic recovery of minerals from each deposit.

ANY ROYALTY SHOULD NOT APPLY TO EXISTING VALID MINING CLAIMS

A grandfathering of at least some existing unpatented mining claims from the new royalty is both required by law and required to treat fairly parties that have made significant investments in Federal lands prior to the enactment of the royalty. Moreover, it may be advisable to grandfather some claims that may not constitute fully vested property rights, in order to have a simple, bright-line test for which claims are subject to the new royalty, which will reduce uncertainty, reduce administration and litigation costs for the government and promote mining investment.

It is settled law that unpatented mining claims supported by a "discovery" of a "valuable mineral deposit" create constitutionally protected property rights in the owner of the claim. Imposition of a royalty on such claims is likely to trigger significant "takings" litigation against the government. A royalty is in no way comparable to the imposition of simple Federal filing requirements on unpatented mining claims, which was upheld by the Supreme Court in *United States v. Locke*, 471 U.S. 84 (1985). Grandfathering claims with a valid discovery as of the date of enactment from the royalty is thus the minimum transition approach that is legally defensible, as Professor John Leshy agreed in his prior testimony before the Senate Environment and Natural Resources Committee.

The problem with protecting only claims with a valid discovery is that determining which of the hundreds of thousands of mining claims has a discovery would be an unprecedented administrative challenge for the Department of the Interior. Under a long line of court cases and administrative decisions, a mining claim does not have to be currently producing to support a "discovery"; a reasonable prospect that the claim could be profitably mined is sufficient. Currently, the Department requires an administrative hearing in order to contest claims for lack of a discovery. Due process requires a hearing for claimants on this issue. The Department has only a handful of hearing examiners trained in the specialized rules applicable to determining whether a "discovery" exists. It would be unworkable for the Department to adjudicate hundreds or thousands of these mining claim validity cases to determine which claims can be legally subjected to a new Federal royalty.

To avoid the royalty transition becoming an administrative gridlock, Congress should apply the royalty only to claims located after the enactment of the law or to claims that are not included in a plan of operations approved by the Department prior to the date of enactment (without a requirement for commencement of commercial production). Having a "bright line" test will save administrative costs and will also promote certainty about the application of the new royalty, which will encourage investment.

CONCLUSION

In my experience, other countries are paying considerable attention to the appropriate royalty and tax burden to encourage mineral exploration and development. The United States has relatively low grade deposits of many hardrock minerals, relatively high labor and production costs, and appropriately stringent environmental and operating requirements. These costs must also be balanced in determining whether a royalty is necessary on Federal lands and if so, how much royalty should be charged. Congress should not impose a royalty without careful consideration of the economic and competitive impacts.

I thank the Committee for the opportunity to address this important public lands issue, and I am happy to answer any questions you may have.

Dr. GOSAR. I thank you for your testimony.

Now Mr. Mitchell Krebs, the President and CEO of Coeur Mining.

**STATEMENT OF MITCHELL KREBS, PRESIDENT AND CEO,
COEUR MINING, CHICAGO, ILLINOIS**

Mr. KREBS. Chairman Gosar, Ranking Member Lowenthal, and members of the Subcommittee, good morning. I appreciate the opportunity to appear here today. I hope I can provide you with some helpful suggestions as you consider policies related to the hardrock mining industry.

Coeur Mining has been around nearly 90 years. We are headquartered in Chicago and operate five mines that produce silver and gold. Our U.S. operations are located in northern Nevada, southeast Alaska, and in the Black Hills of western South Dakota. In total, we employ over 2,100 people. These jobs pay about two times the national average and are based in some of the more remote areas of the country. In addition to our wages and benefits, we are a significant source of tax revenue for each city, county, and state where our mines are located and our employees reside.

I have been in this industry since 1995, and I have a good sense of the reputation it has had over the years. In some cases, that reputation was well deserved. However, our company and our employees do not represent that outdated perception of mining. We are a forward-thinking company, and we represent where mining is going, and not where it has been in the past.

"We pursue a higher standard," that is our company's purpose statement. That purpose and attitude extends into every aspect of what we do. We are continually looking for ways to make our workers safer, and the communities and the environment better off than they were before.

We all might have a different view about mining, but I think it is important for people to not lose sight of the connection between the mining activities we carry out and what these metals are needed for in our society, especially a metal like silver.

Silver is a metal that is fueling many of the exciting, technology-driven trends in the world today. Anything with an on/off switch has silver in it. Every mobile device, every touch screen relies on some silver. It is used in solar panels and in batteries to help generate clean, renewable energy, and to propel electric cars. Tomahawk missiles, drones, satellites, and GPS devices used to protect our country all rely on silver. It is a part of our everyday life, and it is vital that we have a competitive and reliable mining sector in this country.

The area where we see the biggest opportunity for improvement is in how permits are obtained for new mines or to expand existing mines. The United States is a great place to do business as a mining company, but as it functions now, our country's permitting system is tied with Papua, New Guinea for the title of World's Longest Permitting Process, at approximately 7–10 years. In Canada and Australia, a similar process takes 2 to 3 years, and in Mexico, the average time to permit a new mine is about 18 months.

I was just up at our Kensington Mine in Alaska earlier this week, which I think serves as a poster child for our country's inefficient and unpredictable permitting process. It took us over 19 years, 1,000 separate studies, and, ultimately, a trip here to DC to the U.S. Supreme Court and a 6–3 decision to finally secure the 90

separate state, local, and Federal permits necessary to place that mine into production.

By eliminating the duplication that currently takes place, and by tackling the lack of coordination among the various agencies, the process could be streamlined without sacrificing thoroughness or completeness.

The issue of an efficient mining process is not just a mining issue. It applies to any infrastructure project across the country. Some specific suggestions include the following: adopt a one-project, one-review approach; allow state processes to act as substitutes or equivalents to Federal ones, as long as they meet certain criteria and requirements; provide specific, legally-binding timelines up front, make these timelines specific, transparent, and use technology to eliminate data paper-based systems for submissions and document sharing; and consider re-opening the Office of the U.S. Bureau of Mines to act as a coordinator for the permitting process, among other important activities.

As for introducing a royalty on the industry, we strongly believe it would need to be carefully crafted, or else it could put many mining companies out of business, eliminate thousands of good-paying jobs, and leave our economy reliant on foreign sources for minerals and metals. If you do choose to revisit the idea of a royalty, I would ask the Subcommittee to consider the following:

First, make the permitting process more efficient and predictable, and ensure the security of title and tenure before introducing any sort of royalty.

And any royalty should not be based on revenue, but rather on profits. As a mining industry we have no control over the price we receive for the metals we produce. We are price takers. The net profits royalty would at least adjust as prices rise and fall over time.

And finally, we don't think any new royalty should be applied to mines already in production.

With that, I will go ahead and close. I do invite anybody here at any time, if they would like to come out and visit one of our operations, to please do so. Thanks again for the opportunity today.

[The prepared statement of Mr. Krebs follows:]

PREPARED STATEMENT OF MITCH KREBS, PRESIDENT AND CEO OF COEUR MINING, INC.

Chairman Gosar, Ranking Member Lowenthal, and members of the Subcommittee, my name is Mitch Krebs and I'm the President and Chief Executive Officer of Coeur Mining. I appreciate the opportunity to testify before you today. It's a great honor and privilege. I hope my testimony will provide the Subcommittee with a good sense of how our company and I think about the future of hardrock mining. Like most industries, mining is changing quickly and its approach to how mining is done has evolved—for the better (finally)—and we consider ourselves a leader in this evolution. I also hope I can provide the Subcommittee with some helpful thoughts and suggestions you might consider in four specific areas as you look to reform hardrock mining laws:

1. Our Nation's current permitting process;
2. The idea of introducing a royalty on hardrock mines;
3. EPA's proposed rule to require additional financial requirements on our industry; and
4. The risks associated with the thousands of abandoned mines throughout our country.

COMPANY BACKGROUND

First, I'd like to share a brief background of our company. Coeur Mining is a nearly 90-year-old U.S. mining company headquartered in Chicago, Illinois. We operate five mines that produce silver and gold. Our U.S. operations are in Nevada, Alaska and South Dakota and our international operations are in Mexico and Bolivia. In total, we directly employ over 2,100 people while the industry in total employs approximately 2 million people directly and indirectly. We generate about two-thirds of our revenue from our U.S. operations, which is more than any other major mining company. We're publicly traded on the NYSE and have about 50,000 stockholders worldwide.

We are proud of the jobs we provide, of the dedicated men and women we employ, and of the impact we have in the communities in which we have a presence. These jobs we provide pay about two times the national average and are based in some of the more remote areas of the country. And, as you might imagine given what we do, these are jobs that cannot and will not ever be moved overseas. Like most mining companies in the United States, Coeur's operations do business with many different local suppliers, service providers, and contractors and are a significant source of tax revenue for each city, county, and state where the mines are located and where our employees reside. As an industry, domestic mining generates \$46 billion in tax payments to Federal, state and local governments.

I've been in this industry since 1995 and I think I have a good sense of the reputation it's had over the years. In some cases that reputation was well-earned. However, our company and our people don't represent that outdated perception of mining. We are a forward-thinking company and we represent where mining is going in the future. "*We pursue a higher standard*" is our Company's purpose statement. That purpose and attitude extends into every aspect of what we do. We are continually striving to find ways to make our workers safer and the communities and the environment better off than they were before. In fact, I'd say the most ardent environmentalists I know are people who work for our company—out at our sites every day making sure we are protecting the air, the water, the land and the people themselves so that everyone can go home safely from work at night and enjoy the environment where they live.

One last thought from a mining company's perspective: it's important that we don't lose sight of the connection between the mining activities we carry out and what these metals are needed for—especially a metal like silver. Silver is not just used in jewelry and silverware. It's a metal that is fueling many of the exciting, technology-driven trends in the world today. Anything with an "on-off" switch has silver in it, every mobile device and touch screen relies on silver. It's used in solar panels and in batteries to help generate clean, renewable energy and to propel electric cars. It's used to purify water and to treat burn victims. Tomahawk missiles, drones, and GPS devices used to protect our country and our soldiers all rely on silver. It's everywhere around us and it's vital that we have a competitive and reliable mining sector in this country.

OUR NATION'S CURRENT PERMITTING PROCESS

The area where we see the biggest opportunity for improvement is in how permits are obtained for new mines or to expand existing mines. As the process functions now, our country's permitting process is tied with Burkina Faso for the title of "world's longest mining process" at approximately 7–10 years. In Canada and Australia, a similar process takes 2–3 years. In Mexico, the average time to permit a new mine is about 18 months.

I was just up in southeast Alaska earlier this week at our Kensington Gold Mine. Although there are many other examples, Kensington is the poster child for the broken permitting process we currently have in the United States. It took over 19 years to finally obtain the 90 separate local, state and Federal permits for the Kensington Mine and put it into production. My background is in finance and one thing I understand is the time value of money. If it takes 19 years to start getting your money back on an investment, you're not generating a competitive—let alone a positive—rate of return.

These delays and uncertainty are most likely key reasons why exploration investment to identify new supplies of metals and minerals has fallen as much as it has in the United States.

By eliminating the unnecessary duplication that currently takes place at multiple levels of government and by tackling the lack of coordination and communication among the various regulatory agencies, we could bring certainty and a level of common sense to the process and save a tremendous amount of time and expense without sacrificing thoroughness or completeness.

Some specific suggestions include the following:

- **Adopt a “One Project—One Review” approach:** Allow state processes to act as substitutes or equivalents to Federal ones as long as they meet certain Federal requirements;
- **Provide specific, legally-binding timelines up front:** Make these timelines specific, transparent and use technology to eliminate dated paper-based systems for submissions and document sharing.
- **Consider re-opening the office of the U.S. Bureau of Mines** to act as a coordinator for the permitting process—help connect the dots and bring accountability and structure to how permits are obtained. The United States is the only developed country in the world without a Federal entity promoting responsible mineral development and conducting important research. Recently, British Columbia up in Western Canada established a Major Mine Permitting Office (MMPO), whose purpose is to improve the coordination of major mine authorizations across government.

THE IDEA OF INTRODUCING A ROYALTY ON HARDROCK MINES

There have been congressional proposals over the years to impose a hardrock mining royalty on production from Federal lands. Any new financial obligations placed on this industry need to be carefully crafted or else they run the risk of running mining companies out of business, eliminating hundreds of thousands of jobs, and leaving our economy completely reliant on foreign sources of minerals and metals.

When considering a royalty on this industry, my suggestion to the Subcommittee is to consider the following:

- Making the permitting process more efficient and predictable ensuring the security of title and tenure would need to be the first steps toward implementing a royalty. These enhancements would help offset the diminished competitiveness a royalty on the domestic hardrock industry would create;
- Companies in this industry are price takers—we do not have any control over what price we receive for our metals. In addition, many of our operating costs—fuel, steel, chemicals—are outside of our control. Adding a royalty will directly increase our costs and reduce our profitability, which isn’t that strong to begin with given the dynamics of the industry;
- A royalty should be tied to profits (net) rather than revenues (gross). A net production payment is a better incentive for investment because it takes into consideration the costs to mine and process ore and does not penalize mining companies during periods of low commodity prices;
- A company should be allowed to recoup its investment before a royalty is paid. Mining is an extremely capital-intensive business and it struggles to earn an attractive rate of return. The capital used to fund new mine development should be compensated for the commensurate risk before a government royalty obligation is required to be paid; and
- Any new royalty should not be applied to mines already in operation. The rules should not be allowed to be changed in the middle of the game.

EPA’S PROPOSED RULE TO REQUIRE ADDITIONAL FINANCIAL REQUIREMENTS ON OUR INDUSTRY

Last December, EPA issued a proposed rule to require hardrock mining companies to demonstrate and maintain financial responsibility “consistent with the degree and duration of risk associated with their mining operations,” which sounds like a great idea. The only problem is, it already exists.

State and Federal financial responsibility programs have been developed and implemented over the past several decades that are more than adequate to address environmental risk. These existing programs are robust, are required by regulation, and meet the intent of the proposed rule that facilities must establish and maintain evidence of financial responsibility. At Coeur Mining, our financial assurance portfolio already comprehensively addresses environmental risk, closure, reclamation, and post-closure liabilities. We have approximately \$200 million of bonding in place to cover the estimated cost of closure and post-closure activities at our U.S. mines. As an industry, companies commit tens to hundreds of millions of dollars to ensure that money is set aside to properly close sites and in the unlikely event of a release, to monitor and remediate any long-term environmental issues. For example, the

Bureau of Land Management holds nearly \$3 billion in financial assurance and the Forest Service an additional \$325 million. These estimates are calculated with the help of third parties, are reviewed annually, and are signed off on by state and Federal regulators who understand the scope of the required work. As part of the new proposed rule, EPA came up with a new “one-size-fits-all” formula to try to estimate these potential costs. In our case, it would increase our bonding requirement fivefold to over a billion dollars, which doesn’t make any sense. It’s not even possible to obtain that amount of bonding from providers of those financial products.

While we understand the importance of a company being able to demonstrate its ability to secure “response costs” to pay for any sort of cleanup, this proposed rule is flawed, it’s redundant, it’s unnecessary, it’s duplicative, and it’s a “solution in search of a problem.”

THE RISKS ASSOCIATED WITH THE THOUSANDS OF ABANDONED MINES THROUGHOUT OUR COUNTRY

Ironically, while there is great concern about mining companies being able to demonstrate financial assurance under CERCLA, nothing is being done to address the thousands of historic abandoned mines whose owners are now bankrupt and long gone.

The GAO determined in 2008 that there are at least 161,000 abandoned hardrock mine sites in the 12 western states and Alaska. At least 33,000 of these sites had degraded the environment by contaminating surface water and groundwater or leaving arsenic-contaminated piles of waste rock from historic mining activities. The incident at the Gold King Mine in Colorado 2 years ago where toxic wastewater was released into the Animas River is a recent example of this problem.

These old mines represent a real danger—to our safety, to our water, to our air, and to the communities where they’re located. Although Coeur didn’t cause the problems at these mines, we have the know-how, the people, and the desire to help clean up these abandoned mines and to be a part of the solution. However, there are too many disincentives and risks of exposure to potential historical liabilities under current state and Federal laws that prevent companies like ours from getting involved. Good Samaritan legislation has been talked about for a long time. Getting something in place could act as a catalyst to getting these legacy sites cleaned up—something that everyone wants to see happen.

CONCLUSION

In closing, I want to personally thank the Committee again for having me and for looking at ways to improve the hardrock mining permitting process. I appreciate you allowing me to share my thoughts with you and invite you to come see one of our operations sometime. I’d now welcome any questions you may have for me.

QUESTIONS SUBMITTED FOR THE RECORD BY REP. GOSAR TO MITCHELL J. KREBS, PRESIDENT AND CHIEF EXECUTIVE OFFICER, COEUR MINING

Thank you again for the opportunity to testify before you as well as to provide additional followup testimony. As I said during my oral testimony on July 20, 2017, hardrock mining and the industry have evolved over the decades into highly regulated and responsible corporations whose management and stockholders see themselves as stewards of our public lands. At Coeur Mining, we consider ourselves a leader in this evolution.

Per your request, below are my responses to the Subcommittee’s additional questions:

Question 1. Regarding the Kensington Mine, can you please give the Subcommittee more detail about the quality and character of Lower Slate Lake and explain the actions Coeur will take when reclaiming it?

Answer. It is important to start with the natural state of Lower Slate Lake prior to any mining taking place.

Prior to the onset of mining, the surface area of Lower Slate Lake was relatively small, spanning approximately 20 acres, and in its natural state, did not meet state water quality standards due to high aluminum levels occurring naturally in the lake’s waters. In addition, approximately 9 acres of the lake bottom (slightly less than half of its size) were classified as unproductive due to its depth, reaching 51 feet deep.

Today, the naturally occurring metals in the lake impoundment water are being treated. As a result, the treated water discharge from the lake impoundment now has a better quality and meets the stringent EPA permitting and discharge requirements at the impoundment outlet to Slate Creek.

At the conclusion of tailings deposition, the lake will be reclaimed to a self-sustaining aquatic ecosystem. Water treatment will continue until water quality standards are met and sustained. The final impoundment will significantly expand the size of Lower Slate Lake from approximately 20 acres to approximately 60 acres, resulting in a larger and more productive lake with enhanced fisheries and wildlife habitat. The lake will be shallower, wider and more capable of sustaining aquatic life. With a maximum depth of approximately 28 feet, benthic habitat for lake bottom productivity will be created, thus eliminating the 9 acres of pre-existing unproductive lake bottom. Native fish species will re-populate the lake from adjacent surface water bodies with productive wetland and open water habitats returned.

It is important to note the U.S. Forest Service (USFS) conducted an ecological risk assessment that concluded the overall productivity of the reclaimed lake, after the mine is closed, would be higher than pre-existing Lower Slate Lake conditions. The higher productivity will provide a better and more sustainable long-term condition with an overall net environmental gain.

For the Subcommittee's benefit as well as in response to Congressman Lowenthal's submission of outdated pictures taken of Lower Slate Lake from the Internet, I have included photos of Lower Slate Lake taken in July 2017 representative of current conditions of the Lower Slate Lake tailings facility since mining operations were initiated.





Question 2. Can you explain the specific provisions in the Clean Water Act regulations that allow for mine tailings to be placed into the Lower Slate Lake at your Kensington Gold Mine?

Answer. “We pursue a higher standard” is our Company’s purpose statement, which is our driving purpose into every aspect of what we do. We continually strive to find ways to make our workers safer and to make the communities we serve and the environment better off than they were before. Thus, we follow the regulations of the Clean Water Act. We should discuss the specific provision of the Clean Water Act.

To begin, the joint U.S. Army Corps of Engineers (“Corps”)/Environmental Protection Agency (“EPA”) regulations which implement Section 404 of the Clean Water Act, found at 40 C.F.R. § 232.2, allow the tailings to be placed as fill material into the Lower Slate Lake under carefully controlled conditions imposed by the agencies in permitting the facility. These regulations specifically define “discharge of fill material” to include “placement of . . . slurry, or tailings or similar mining-related materials” in waters of the U.S. 40 C.F.R. § 232.2(6)(1).

Specifically, the EPA regulations known as the “404(b)(1) guidelines” at 40 C.F.R. Part 230 provide the criteria for the Corps to authorize the placement of the tailings in the impoundment as the “least environmentally damaging practicable alternative” for disposal and storage of the tailings. The Corps made this determination in issuing the Section 404 permit for the Kensington Project tailings facility after an exhaustive environmental impact statement and permitting process in which the EPA as well as numerous other Federal, state and local agencies, environmental and other organizations, and the general public participated.

Any doubts about the authority for the Corps to permit the placement of tailings in the Lower Slate Lake impoundment in accordance with these regulations were resolved by the United States Supreme Court in *Coeur Alaska, Inc. v. Southeast Alaska Conservation Council et al.*, 557 U.S. 261 (2009).

Question 3. Please explain the permitting requirements under the Clean Water Act and state regulatory authority required to secure permits and comply with those permits during the entire mining cycle as they apply to water quality and discharge issues.

Answer. Clean Water Act permitting requirements and related state regulatory provisions that implement or augment Federal requirements are complex and daunting. They vary according to each particular mine project and by state. They generally include:

1. One or more Clean Water Act Section 404 permits (issued by the Corps with oversight by the EPA) for placement of fill material during construction or subsequent operations into delineated “jurisdictional” wetlands or other waters of the United States for roads, development rock, tailings, or other facilities. The 404(b)(1) regulations contain requirements that regard avoiding, minimizing, and mitigating to compensate for impacts to these jurisdictional wetlands or waters.
2. One or more Clean Water Act Section 402 National Pollutant Discharge Elimination System (“NPDES”) permits (issued in most states by the state environmental quality agency with oversight by the EPA) for “point source” discharges of pollutants to waters of the U.S. (other than placement of fill or dredged material under Section 404). Those permitted discharges may be from tailings impoundments, mine drainage outlets, or other facilities. The effluent must be treated as needed to meet stringent standards for metals and other constituents in order to protect drinking water, swimming, fish habitat, and other designated uses for the water body receiving the discharge.
3. One or more storm water permits, also a category of Section 402 NPDES, permit for controlling storm water runoff during construction and later mine operations.
4. A Clean Water Act Section 401 state certification that point source discharges authorized under Federal licenses or permits for the project (such as a Section 404 permit) will comply with state water quality standards. These standards can include, where applicable, nondegradation standards to protect desired conditions and designated uses for high quality streams and other water bodies and compliance with Total Maximum Daily Load (“TMDL”) limitations for bodies of water designated as impaired for one or more pollutants under the Clean Water Act.
5. Additional state law requirements that may apply to groundwater and other uses and water quality parameters.

These requirements apply to varying degrees throughout the life cycle of a mine project, from initial exploration that may involve temporary road or drilling pad construction and operations through later phases of mine development, operation, closure/reclamation, and longer-term post-closure care and maintenance of the mine site. These requirements include long-term water quality monitoring and continued treatment of point source discharges if needed.

The Clean Water Act and related state permitting requirements provide a rigorous regulatory framework for protecting water quality, from the inception of a mine prospect through the end of active operations and including long-term care of the reclaimed site. The application of these Federal and state requirements to any particular substantial mine project requires a site-specific analysis which is quite complex and multifaceted.

Question 4. Will you please provide information regarding the safety and environmental performance record of hardrock mining in the United States, including trends in recent years and decades?

Answer. In accordance with our purpose statement of pursuing a higher standard, we are a forward thinking hardrock mining company dedicated to continuous improvement in all areas, especially worker safety. Our team is consistently working to ensure that we operate in an environmentally responsible and safe manner daily. In addition, as an industry, we have no higher priority than the safety of our workers and our responsibility for maintaining a healthy and vibrant environment at our mining operations. We all recognize that even one injury is one too many.

Speaking for Coeur, we have worked tirelessly to ensure our mines are among the safest in the hardrock mining industry. We achieve this through our safety programs which begins on Day One of each employee’s time at our company.

The statistics regarding the industry’s safety record speak for themselves. Statistics from the U.S. Mine Safety & Health Administration on all metal/nonmetal

mines show that in 2016, there were 3,647 total injuries (an injury rate of 1.92 per 200,000 employee hours) and there were 17 fatalities (a fatality rate of 0.009 per 200,000 employee hours.) Historically speaking, injuries and fatalities in the hardrock mining industry have never been lower than they are today. By comparison, in 1980 there were 15,161 injuries and 103 fatalities and in 2000, there were 9,600 injuries and 47 fatalities in this industry. The drop in injuries and fatalities is significant, which the industry attributes to several factors, including better technology, improved hazard identification, and an ongoing safety education programs at each mine.

In addition, the environmental record is just as strong. Based on a 2011 letter to Senator Lisa Murkowski from the U.S. Forest Service, the agency confirmed that 2,685 permits had been issued for mines on USFS land since 1990, and *none* of those mines had been placed on Superfund's National Priorities List (NPL.) Also in 2011, the Bureau of Land Management (BLM) responded to the same question posed by Senator Murkowski about permits on BLM lands. Since 1990, BLM's Mining Law Administration Program had approved 659 Plans of Operation and *none* of them had been placed on the NPL. Only one mine (on private land in South Carolina), which has had a permit approved since 1990, has been placed on the NPL. One mine out of thousands of permits simply does not indicate a pattern of environmental abuse or negligence for the modern mining industry.

Unfortunately, the temptation by many in the environmental movement, however, is to continually advocate to the public through scare tactics, incomplete facts or through deliberate ignorance that virtually *all* modern hardrock mining operations are somehow destroying our environment and do not operate responsibly. These accusations that hardrock mining companies are intentionally skirting environmental laws because of callous disregard for the environment or to enhance financial margins is entirely inaccurate and misleading. It is irresponsible to represent that hardrock mining companies intentionally pollute the environment.

Our commitment to the communities where our hardrock mines are located and where our workers and their families live demands that we use ongoing safety education, environmental stewardship, and the best technology with modern mining practices as part of the social compact we have with both.

Question 5. Can you please provide the Subcommittee with information regarding the expected closure and reclamation costs for active hardrock mines in the United States and the existing financial assurances to cover those costs (including through third party bonding).

Answer. Before going to current costs, we should review history. Prior to 1970, hardrock mines were typically designed and built to maximize production and minimize cost with little or no regard for environmental values. This was no different than other industries.

However, beginning in the 1980s almost all new hardrock mines have been designed, built and operated to integrate long-term environmental closure and reclamation as a primary design standard, and this is required by current Federal and state law. At the same time, the Federal land management agencies (FLMAs) and states have significantly evolved their financial assurance (FA) programs with specific emphasis on post-closure care and maintenance, thereby minimizing the long-term potential for releases of hazardous substances and unbonded agency liability.

Currently, the FLMAs and states have increased their oversight of mine permitting and reclamation practices, and they have developed a comprehensive regulatory regime covering all aspects of the mine permitting, reclamation and FA process. It is unusual that government and industry agree on environmental issues. In this case, however, industry, states, FLMAs, and the U.S. Small Business Administration (SBA) have had the same message to EPA in the CERCLA § 108(b) rulemaking that existing FA programs are working at modern mines and there is no need for a fundamentally flawed, duplicative, and costly EPA program.

FLMA and state programs tie FA requirements to each mine's individual permit stipulations for operations and closure, and these requirements are reviewed and updated by the FLMA and/or state on a continual basis. EPA's Proposed Rule ignores these existing FLMA and state schemes and does not recognize the adverse effect that duplicative Federal oversight would have on these states and their citizens. Instead of considering the present degree of risk and taking into consideration required input from FA providers, EPA's Proposed Rule is the result of litigious pressure from anti-mining environmental groups and special interests. Without regard to facts, EPA's Proposed Rule duplicates FLMA and state agency requirements, creates conflicts of law, and bypasses local administrative authorities who have proven expertise in reviewing, permitting, and overseeing mining projects.

Over the past 25 to 30 years, these programs have greatly advanced, adapted to new information and responded to fill gaps in both their regulatory and FA programs as circumstances have required. These programs have proven effective, which the National Academy of Sciences, in response to a request from Congress, determined in a comprehensive 1999 report entitled Hardrock Mining on Federal Lands. The Report concluded that the overall structure of Federal and state laws and regulations that provide mining related environmental protection is complicated but effective.

In the case of the mines operated by Coeur Mining, the closure, reclamation, and post-closure costs of our mines are well understood with comprehensive site specific plans established for closure. All hardrock mining operations are bonded for closure, reclamation, and post closure monitoring and maintenance, all of which is a condition to operate. Financial assurance needs to be secured and adjudicated before any site disturbance begins. Thus, those liabilities are already secured through financial assurance mechanisms such as surety bonds, letter of credit, insurance, trusts, and cash collateral, for example.

Comprehensive closure and reclamation costs and their requisite financial assurance for the hardrock mining industry may be best illustrated by BLM and USFS estimates. According to these agencies, the USFS held over \$325 million in reclamation bonds for approximately 530 projects. Of that \$325 million, approximately \$304 million is identified for eight large operations. The calculations are project-specific and financial assurance is calculated based on the type and amount of disturbance at each operation. The BLM holds \$2.9 billion in financial assurances for final reclamation of approximately 1,374 operations. Mining operations occurring on private or state lands are also required to secure financial assurance prior to construction and operation. Cost estimates for financial assurance go through a rigorous review process through the Federal and state agencies.

In closing, thank you for allowing me to submit further testimony to the Subcommittee and for seeking ways to improve the hardrock mining permitting process. I invite you or your staff to come see one of our operations.

Please do not hesitate to reach out if you have additional questions.

Dr. GOSAR. I thank the gentleman. I thank the panel for their testimony.

Reminding the members of the Committee that Rule 3(d) imposes a 5-minute limit on the questions, and I will recognize myself first.

Mr. Cress, thank you so very much for joining us today, especially with the distance that you have traveled. I mean, coming all the way from the Philippines, that has to be a record, or darn close to a record.

Your expertise and extensive experience in your field are invaluable to this Subcommittee, and your testimony is especially helpful for showing how non-binary the prospect of gross proceeds versus net proceeds really is. What states and countries are really doing in a wide spectrum and then painting it simply as one or the other is disingenuous. So, thank you.

My first question to you, I want to make sure I get this correct, because you said it and I want to highlight it. When all the different taxes and fees are accounted for in the United States, it is pretty close to the global average. Can you explain that again?

Mr. CRESS. That is correct. In the global mining taxation study that was done by Professor Otto, it was actually on the high end of competitive. The competitive range that Professor Otto defined was about 40 to 50 percent government take. And both Arizona and Nevada came in at 49 and change.

Dr. GOSAR. So, it is really important that we consider the whole aspect of implications versus selecting just one aspect that we want to nitpick, true?

Mr. CRESS. Yes, that is correct.

One other thing I might add is that the exploration end of the industry actually operates by retaining small royalties, and they will discover, explore, and transfer properties to larger companies. You need to leave room for those royalties, so that that industry can continue to function and find deposits.

Dr. GOSAR. You are really pointing a picture to my next question, and that is if we are talking about this royalty schematic, Congress is going to have to walk a real tightrope in regards to this discussion. This is such a complicated issue that I cannot see the wisdom in just a flat, gross royalty. Do you see the same thing?

Mr. CRESS. I think the advantages of gross royalties are that they are supposedly simpler to administer, although that is not always true. We have gross royalties in oil and gas, for example, that have very complicated deductions for processing. And coal, for transportation and washing.

Complexity does not need to be an impediment to adopting a net approach. The states are handling that complexity just fine. And many other governments—Canada, Australia—have very complex net royalties, and administer them also, just fine.

Dr. GOSAR. My next question to you is, if Congress were to craft legislation that would affect mining operations in all states with their own economic burden, all commodity types for their different markets, and all mining techniques with their different capital intensities, in your professional opinion, how could we ever possibly craft such legislation?

And would it be more realistic to grant a governing body the ability to determine the appropriateness of those rates on a case-by-case basis?

Mr. CRESS. You are correct that this would be an unprecedented attempt to define royalties over a number of commodities. When Congress has done this before, it has been on a single commodity basis. So, I personally believe that that would require great study and great care.

You could specify in the legislation different royalties and different royalty bases for different royalty metals, but it is going to be a complex undertaking.

Dr. GOSAR. And I think we made the point that, before we can actually consider that, we would actually have to look at a streamlining of the permitting process, a common-sense application there.

Mr. CRESS. Yes. As you have heard in the testimony today, the U.S. ranking would be higher, if not for the permitting delays. So, adding a royalty will be a discouragement. But if you improve permitting, that would encourage.

Dr. GOSAR. Ms. Pagel, I have a couple questions for you. Have you visited Twin Metals or the iron ore mine range in Minnesota?

Ms. PAGEL. No, I have not.

Dr. GOSAR. How about Resolution Copper?

Ms. PAGEL. I have visited the Oak Flat Campground.

Dr. GOSAR. Have you been in the mine?

Ms. PAGEL. No, I have not been in the mine.

Dr. GOSAR. Well, when we make these ascertations about how ineffective and inefficient mining is, I think you need to walk a mile in our moccasins out in Arizona and Minnesota. When you make

the gross accusations about the spills actually polluting, let me explain something to you.

We just actually went out to Minnesota. Do you know that the iron ore pits actually clean the water better than what you see in the boundary waters? Are you familiar with that?

Ms. PAGEL. I did not know that.

Dr. GOSAR. Once again, I think what we have to do is we have to learn, instead of being ignorant and putting out false facts. I think we need to start walking and making sure that we have our facts right, so that we are not scaring people egregiously.

Ms. PAGEL. I will be happy to get you more details about the pollution.

Dr. GOSAR. Well, what I would like you to do is come out to see us, because you are going to see something much more different than what you are proclaiming at the witness stand.

Ms. PAGEL. I would be happy to.

Dr. GOSAR. I recognize the gentleman from California for his 5 minutes.

Dr. LOWENTHAL. Thank you, Mr. Chair. I want to kind of explore this idea about how long it takes to get a mining permit, not so much to put people on the spot, but to get a better understanding of what is really going on, and what some of the issues are.

So, Mr. Krebs, you mention that we have the world's longest mining permitting process of 7–10 years. That is very similar to what the Majority's memo on this hearing also mentions, the same kind of time frame. And it all comes from a 2014 report on ranking of countries for mining investments. That is really where it comes from. But there is no actual permitting data in the report. It just says that.

And the other thing that I need to understand is, with this problem are tremendous—you mention how much further behind we are. The report ultimately ranks nations in terms of conditions that promote investment growth in the mining industry, and between 2013 and 2014, the United States had the greatest investment growth. In conditions that promoted investment growth, it really ranks us third out of I think 26 nations, in terms of conditions that are right for investment.

Can you square this? And where are the problems? If this would improve us, if we are already moving in the right direction, where are the problems?

Mr. KREBS. It is such a case-by-case situation. I talked about the Kensington Mine up in Alaska. I would consider that to be an extreme example, 19 years. I could give you another example, a mine of ours, the one in Nevada, it has been in existence since—

Dr. LOWENTHAL. But just take those cases. What has led to such, what pushed it so long out there? Is it the agencies not coordinating? Is it the local, state, and Federal level, it is not any one level of government that is the problem, is it the coordination that we are doing? What do you see as the critical issue?

Mr. KREBS. I would say it is two things. It is the coordination, and then it is the litigation that we experienced throughout the process.

And on the coordination front, I think, in our experience, like Nevada, things go really well to, for example, get something put

into the Federal Register. But when that finally gets to DC, it sort of goes into a black hole. I think there are something like 14 separate approvals that are required here in DC before that thing can actually get put into the Federal Register. And if there is any change made by any 1 of those 14 approvals, it goes back down to square one and starts over again.

Dr. LOWENTHAL. Yet, we still do have, as the report indicates, the conditions are such, compared to the rest of the world—besides, I believe, it is Canada and Australia—we have come up much closer to them now, that promote investment growth in the mining sector. Why is that so, then, with all of these delays? Why are we also looked at as a great place to invest?

Mr. KREBS. Well, for starters, it is the certainty of title. It is the rule of law, contracts. Infrastructure here in the United States is great in most cases. Although, in Alaska, we have no infrastructure there at our mine. But you tend to get into a more litigious loop here in the United States, where you will put something, an EIS, out there, there will be litigation, which will extend the timeline. And then, inevitably, the prices of the commodities change, so then we will have to go back and sort of redo the economics.

Dr. LOWENTHAL. I agree we can be looking at that, but I still come back to we are still looked at as one of the best places to invest money.

Ms. Pagel, what do you see as the issue? What is really going on here? They are saying, hey, this permitting, it is just taking too long, even though the BLM and the Forest Service, when they do mine plans of operation, the average is less than 2 years and more than half are done in 18 months. Is there a problem here? I mean we are hearing a major problem.

Ms. PAGEL. Yes, I think the GAO report that came out last year was very clear that there is a 2-year average for mine permitting time, and the delays that occur—it went through many different situations where the mining companies actually were the issue. They either decide to expand the mine or they don't provide the correct information to the agencies.

I think with the Kensington Mine, that was a mine that is outside the norm, in terms of the fact that the mine tailings waste dump was going to be placed into a freshwater lake. That is outside the norm of mining practices, and I think that is likely probably one reason why it took a little bit longer.

Dr. LOWENTHAL. Thank you, and I appreciate this discussion to understand exactly what the data is.

I think what I am struck with—and I will yield back—is our lack of really understanding the scope of what is going on, so I enjoy this discussion. Thank you, and I yield back.

Dr. GOSAR. I thank the gentleman. I recognize the Vice Chairman, Mr. Cook, for his 5 minutes.

Mr. COOK. Thank you very much, Mr. Chair. I want to switch gears a little bit. As I was listening to this conversation, and, you know, I was a history major. Everybody says that I am so old I made a lot of history and what have you. But—I heard that.

[Laughter.]

Mr. COOK. I want to go back in time, if you will, to World War II, when we had certain minerals, certain parts of the economy

that were extremely important to our national security, to our survival in this war. And if you remember right, there was an individual who was very obscure at that time. I think he was from Independence, Missouri, and no one had ever heard of him. He went on later to have the most unexpected victory in the 1948 election: Harry S. Truman—cutting through the bureaucracy to respond to what was happening, nationally.

OK, I am going to make the point now. A mine in my district, which, ironically enough, a Democratic Congresswoman from California asked me about because she had been there, and she said, “What is the status of Molycorp Corporation, the rare minerals and rare earth, vital to national security, vital to guided missiles, to all kinds of things?”

I said, “They have gone bankrupt.” And then there was a news release—I don’t know if anybody reads those—that Molycorp made the suggestion to nationalize the corporation, because this would cut through all the problems of litigation, the waits, and everything, and give them a chance to compete with the country that is just killing us, internationally, that buys companies—in the United States, all over the world—buys them, lowers the price once the competition goes out, and then they raise the price, and that is China.

They are conducting economic warfare, and I am speaking far too long, but I want anyone’s take on whether you think this is a real—not problem for jobs, jobs, jobs—and, by the way, Molycorp—I am from California. Ninety percent of the jobs were from Nevada, and I don’t see anybody from Nevada. I just want to re-emphasize that you should have a stake in this.

So, my comments on that, can you respond? Our first speaker, perhaps? I haven’t heard from you much.

Dr. HITZMAN. Yes, there is no question that Molycorp, the Mountain Pass deposit, is the richest known rare earth deposit that has been in production in the United States, and it has had a troubled history for a variety of reasons, but primarily because China has, I think one could say, manipulated the market to affect that.

How we go forward, that is a question, obviously, for yourselves. But you are right to point out that during the second World War the United States did, in fact, very much support several very key mineral commodities here in the United States, and does so still to this day with beryllium, as one commodity the U.S. Government is still supporting directly.

Mr. COOK. Thank you. Anybody else in my 1 minute and 22 seconds?

[No response.]

Mr. COOK. Thank you very much. I yield back. Oh, I am sorry, you were going to—

Mr. CRESS. I will comment only because I have also watched the situation with Molycorp, and I addressed this issue before the National Academy of Sciences on the issue of critical and strategic minerals.

If you look in the *New York Times*, they ran a series on mining of rare earths in China, and the environmental devastation that allows them to undercut that mine. And the Molycorp mine has been

put out of business twice by the Chinese. And I think it is a problem. I actually think the nationalization idea is not a bad one. And I would not normally say that. In this case, maybe it is.

Mr. COOK. I would not go that far, but I am a Republican. I yield back.

Dr. GOSAR. Thank you. Thanks to the gentleman. Now the gentleman from northern Virginia, Mr. Beyer, is recognized for his 5 minutes.

Mr. BEYER. Thank you, Mr. Chairman. Thank you all very much for coming and teaching us all about hardrock mining.

Ms. Pagel, our Chairman invited you to come and see the mines in Minnesota and Arizona. I would encourage you to do that. It is always helpful. Let me know when you guys arrange it. I would love to come, too. The last time I had a panic attack was deep in a coal mine under Kentucky, the darkest I have ever seen.

The Chairman suggested that at least some of your testimony was based on alternative facts, and you talked about a groundbreaking study that 75 percent of mining operations have polluted surrounding surface or groundwater; that 74 percent of domestic gold mines have polluted waters with cyanide, arsenic, et cetera; 100 percent of copper sulfide mines have had pipeline spills and accidental releases. Where do these facts come from?

Ms. PAGEL. We work with mining engineers, hydrologists to look at EISs and also look at what mining companies said when they first built the mine in terms of how much water they might pollute, and then, after that mine is in operation for a period of time, how much water they actually did pollute. And, unfortunately, what happens in reality does not match the predictions, and we do know that mines out there are polluting both ground and surface water.

Mr. BEYER. Do any of these end up in scientific studies, in peer-reviewed journals?

Ms. PAGEL. They do, and I would be happy to send them to the Subcommittee so they can take a look at them.

Mr. BEYER. And is it also possible that there are mines that do clean the water because they are running through rock, and other mines that are releasing arsenic and the like into the groundwater?

Ms. PAGEL. Yes, often mines have water treatment plants that will take the polluted water and treat it so that it is no longer as polluting.

Mr. BEYER. Great, thank you.

Mr. Krebs, in Ms. Pagel's testimony she talked specifically about the Kensington Mine and taking advantage of the Clean Water Act loophole: 200,000 gallons per day of toxic wastewater in the Lower Slate Lake, eventually, 4½ million tons of solid into the lake, and "what was once a pristine body of water into a mine tailings disposal site." How do you react to that, or respond to that?

Mr. KREBS. Well, I would ask you all to come up there and look at what we do at Kensington. Lower Slate Lake was a dormant, small body of water that was not capable of even supporting aquatic life. To call it a mudhole would not be a stretch. By the time we are done mining and we reclaim Lower Slate Lake, it will become a much larger body of water, capable of supporting aquatic life.

Up there, we treat water as much as we mine ore. We process 5 million gallons of water a day at a mine like Kensington.

There is no toxic waste. Half of what we mine that does not contain the ore that we ultimately process and ship off-site goes back underground, into the mine, as backfill to help support the underground infrastructure. That leads to better safety conditions in the underground mine.

So, I would say that the characterization of Kensington is off base. The idea that there is some kind of a loophole after 19 years and 1,000 studies and a trip to the Supreme Court, I don't think those guys would let a loophole—if anything, we are tied up in knots up there, in terms of how we operate.

And we are fine doing it. We are the last people that want to have any environmental issues. Our workers are there in the local community. I think some of the most ardent environmentalists I have seen are people that work at our company.

Mr. BEYER. Let me interrupt 1 second, only because the time is so limited.

Mr. KREBS. Yes, sir.

Mr. BEYER. Mr. Cress, you gave a long and wonderfully detailed lawyer description of all the different fees and, basically, why we should not have Federal royalties at all. But then you go on and cite Alaska, Montana, Nevada, California, Arizona, Colorado, Idaho, Utah, South Dakota, Oregon, New Mexico, and Washington as all having some kind of royalty thing, whether gross or net.

Why is it OK for the states to have royalty regimes and not the Federal Government?

Mr. CRESS. I actually didn't say that the Federal Government should not charge a royalty. I said if they decide to do that they need to be very careful about how it is done.

The states are charging those royalties mainly as severance taxes. Those taxes generally go to support local communities, so it is a way of addressing the impacts of mining on local communities. So, it is kind of a different purpose.

And I think you really have to stick to the purpose of the Federal royalty, which would be, again, the raw minerals in the ground prior to processing, prior to all the expense of making that into a metal. That is what the United States is providing.

Mr. BEYER. One purpose might be, as we have heard from almost all, is the hundreds of thousands of abandoned hardrock mines that need cleanup.

Mr. Chair, I yield back.

Mr. COOK [presiding]. Thank you.

Mr. Lamborn.

Mr. LAMBORN. Thank you, Mr. Chairman. Today, there are as many as a half-million abandoned mines across the United States. And some pose tremendous health and safety hazards, as we saw in our state of Colorado, with the Gold King Mine disaster. So, it really is something I, and I think everyone on this Subcommittee, want to address. I will be introducing a bill for the fourth Congress in a row—if I am counting correctly—to at least address part of the puzzle.

There are a lot of different facets to abandoned mine lands, but one factor that I think needs to be in there, and my bill would address, is the liability issue. If people clean up abandoned mine

lands voluntarily, they should not have unlimited, infinite liability, because no one will ever touch it, as a result.

But we have seen great examples in Pennsylvania coal country and other places, where people voluntarily really do some great cleanup. So, unless you act grossly negligent or willfully, then you would have liability. But if you are acting in good faith, I think we need to relieve the current unlimited liability, or we will never get some of these cleaned up.

Mr. Krebs, what issues also should we be looking at as we look at Good Samaritan legislation? I addressed part of it, but what are the things we should be looking at when we consider a package of bills, let's say?

Mr. KREBS. Yes, I think you are on point there. The biggest issue—you know, we are a publicly-traded company, we have 50,000 shareholders around the world. We need to be very careful about what kind of liability we expose our shareholders to. As it currently sits, there are just too many risks associated with getting involved with any of these historic sites, which is unfortunate, because we have the know-how, we have the resources. And, frankly, we have the desire to get involved in trying to be a part of the solution to address these abandoned mines.

Sure, hopefully, there might be some economic benefit for us to do so. But above and beyond that, it is the right thing to do. It is a bit of a black eye for the industry, so I think trying to be a leader in the industry by attacking and addressing that issue is the right thing to do.

Mr. LAMBORN. Mr. Krebs, are mining companies uniquely situated to be able to address this problem?

Mr. KREBS. I would say we are. We have the capital. And then, many times, we already are reprocessing old tailings.

For example, we have a mine in Bolivia, where we are mining on the surface of a historic mountain down there called the Cerro Rico Mountain that was mined underground for over 500 years. And our sole mining efforts there are in picking up the old tailings that were left behind over all those centuries that are just waste rocks sitting on the surface, picking those up, reprocessing them, and recovering the silver in those piles of waste rock, and returning the mountain to a much more environmentally friendly place.

So, that is kind of an example of how companies like ours are already doing this kind of thing.

Mr. LAMBORN. I wish the EPA had been doing that at the Gold King Mine back in Colorado.

Mr. Cress, I am going to ask you a royalty question now. Some have called for a gross royalty, and I think you did a good job of explaining the difference between gross and net, and the difference between retroactive and prospective, or future assessment of taxes. Can you also address economic cycles? And with the long timelines that we are laboring under right now, how that factors in?

Mr. CRESS. Yes, as I am sure you all know, the mining industry is very cyclical. Prices go up and down, and the swings can be dramatic. In fact, some of the numbers that I have seen Earthworks use before on Nevada and Alaska are numbers that are taken from downward swings.

If you look at the Alaska or the Nevada tax, just to use an example, I think they brought in about \$150, \$200 million over a 10-year period through 2007. In the last 10 years, it has brought in \$1.4 billion. That is because the cycle of the industry went up, and mines opened, and the state received a greater share. That is the beauty of the net approach, is that when the industry is already suffering, mines can close if there are fixed costs like a gross royalty that do not go down when the industry is suffering.

And that approach allows you to ride out those cycles, and I would say sustainable development in mining is using the minerals.

Mr. LAMBORN. Thank you.

Mr. COOK. Mr. Soto.

Mr. SOTO. Thank you, Mr. Chairman. When I looked through the royalty rates for other resources, we have 12.5 percent for onshore oil and gas royalties, 18.75 percent for offshore oil, and Secretary Zinke just recently mentioned possibly even looking to raise those. With coal it is \$1 per ton, and it is split between Federal and the states.

But here, where we are dealing with hardrock, it looks like, in the absence of any Federal revenue, we have had a bonanza with the states using this as a revenue source. And that appears to be the real issue here.

Mr. Cress, you had testified that we are already at the world average. So, is it the states being greedy? Is that why we are at that level, in the absence of any Federal royalties?

Mr. CRESS. No, I don't think so. I think that almost 50 percent share that government takes, a lot of it would be income tax. That includes all taxes assessed against business.

But mining does bear a very specific tax that other industries do not, which is these state severance taxes. Sometimes they are called license taxes. In Alaska, they use that. Those are percentages of profit or percentages of proceeds, unlike a business license, which is a \$50 thing, it is a percentage of profit.

Mr. SOTO. And that is a state fee, is that right?

Mr. CRESS. That is correct, those are state fees. There are really two.

Mr. SOTO. So, for removing the income tax that everybody pays, and just talking about fees and royalties, basically state-imposed revenue, is that where most of the cost is right now?

Mr. CRESS. I am sorry, the cost for industry?

Mr. SOTO. The cost to industry for mining hardrock, specifically.

Mr. CRESS. Well, it is part of the cost, yes. What I tried to set out in my testimony is that most states are sensitive to this gross versus net problem, and impose a net burden on severance of minerals.

Mr. SOTO. And, Mr. Parke, what does Arizona charge for mining hardrock?

Mr. PARKE. I am not aware. I can get you that information. I would mention, though, that mostly that is on state lands, so it is applicable to mineral resources that are extracted from state lands.

Mr. SOTO. Are there any fees or other licensing requirements like Mr. Cress was discussing already, even if it is on a Federal land, if they are operating within Arizona?

Mr. PARKE. I can get you that information.

Mr. SOTO. It appears that what we are working with with coal seems to be a fair way, where we are looking at revenue sharing between the state and the Federal Government. As we are looking at a \$20 trillion debt and a \$600 billion deficit, this appears to be an area where there has just been a fix that has not happened out there, a loophole that has allowed states to really rack up revenue at the expense of the Federal Government.

Going next to Ms. Pagel, we see there has been over \$300 billion in mined hardrock. What are the total cleanup costs that are left for all of these mined areas? Do we know that?

Ms. PAGEL. We have an estimate around \$50 billion. It could be more than that. The fact that there is not real inventory, exactly how many abandoned mines we have in this country is an issue.

Regardless of what the number is, the main problem is that we have no money, no steady stream of funding to clean up those abandoned mines.

Mr. SOTO. So, there were never any royalties charged, there was never any fund created to help clean up mines afterwards, and we are stuck with \$50 billion worth of damage across the United States. Is that fair to say?

Ms. PAGEL. Exactly.

Mr. SOTO. What do you think we should be doing, going forward?

Ms. PAGEL. It is time to start charging the industry a fair return for the Federal minerals that they are taking, including a royalty and a reclamation fee, similar to what the coal mining has, both a royalty and a reclamation fee. And we hope, with that reclamation fee, that we can start to chip away at the \$50 billion in AML cleanup.

Mr. SOTO. And if we didn't do a royalty fee, but just a reclamation fee to help with the cleanup, do you think that would get us moving on this \$50 billion?

Ms. PAGEL. It would, because of the 1872 Mining Law—and I am sure Mr. Krebs can attest to this—many of the ore bodies have actually been patented, meaning privatized, under the 1872 Mining Law for \$5 an acre. So, we have actually lost some of that revenue by privatizing public minerals.

Mr. SOTO. Thank you, and I yield back.

Mr. COOK. Mr. Wittman.

Mr. WITTMAN. Thank you, Mr. Chairman. I thank our panelists for joining us today.

Mr. Krebs, I want to go to you. You spoke quite eloquently about how fixing the hardrock permitting process and making it easier would affect our reliance on foreign suppliers of some of these critical minerals, and you spoke about compounds like silver and its use within a number of different practices, both of strategic importance and economic importance to the United States.

Also, rare earth elements, you spoke a little bit about rare earth elements, and specifically being able to reprocess tailings in many situations where existing tailings have significant economically viable amounts of rare earth elements in there for us to be able to reprocess.

But looking at that across the spectrum, if we are looking at how changes in the royalties, or additional financial requirements for

folks that are either mining today or would want to get into that to be able to get to some of these critical elements that need to be processed for national security purposes, if nothing else, how would some of those proposals, or what you look at as proposals, how would those royalties or financial requirements potentially impact either current operations or those companies that may look at getting into those operations?

Mr. KREBS. Yes, it would certainly detract from the attractiveness of, from a commercial standpoint, looking at any kind of opportunity, if there is an additional cost. That would have to be offset, then, with any potential opportunity to move forward the cash flow by having a more efficient permitting process. So, it would be an economic trade-off that we would look at, just like any other opportunity.

I think there is probably an equilibrium in there somewhere, where you could address some of those issues around permitting, land, tenure, issues like that, something like that, and then putting a profits royalty in there, so that you have some reliability and some certainty so that, as a private company you can have some ability to predict what the investment looks like. And then, ranking that against the global market that there is for where you can allocate capital and what the relative rates of return are.

Mr. WITTMAN. If the wrong policy decisions are made concerning royalties and additional financial requirements, and we have less production in the United States, for those reasons exclusively, or even if other external factors come in as part of that, how would you say that affects our national security?

Mr. KREBS. Well, companies would leave and go elsewhere. There would be even less exploration done in this country to find new sources of those metals. And we would sort of be left dependent on others.

Keep in mind there are only a handful of U.S.-based—at least in our case—precious metals mining companies. You look over the border into Canada, there are, I think, 300-plus mining companies. The industry here has already shrunk down a lot, despite the fact that there are a lot of good things about being here in the United States, don't get me wrong.

But some of these other issues mainly around uncertainty, unpredictability of the timeline, and litigation is a reason why this industry has shrunk as much as it has here.

Mr. WITTMAN. Got it. Very good, thank you.

Dr. Hitzman, I want to ask you, what would you say are the most important factors ensuring a steady stream of domestic mineral commodities? And as we look at fluctuations there and other countries—i.e. China—getting in, and in many instances trying to dominate and displace others in those marketplaces, whether it is for compounds like silver, but even more importantly, rare earth minerals, give me your estimation about what we can do here on the domestic side.

But also, if we don't do things, how does that affect us, strategically?

Dr. HITZMAN. It is complicated, and this hearing is showing some of the complications. And it is variable, because different metals have very different markets.

For instance, silver is a relatively large and international market. The rare earths, which many people are concerned about, is also an international market. But the amount of rare earths produced is incredibly small, so very few companies actually get into that business because it is a niche business. That affects many other things.

So, moving on to what can we do. One of the things, clearly, at least from the USGS side, is provide the geological, geophysical data so that companies like Mr. Krebs' actually have the information to go out and find the minerals. That is, from my point of view, one thing that is incredibly important.

The rest is what you are talking about, which is not what the USGS does, we are a non-regulatory agency. But clearly, the idea of permitting and how that works is another area that needs to be looked at.

Mr. WITTMAN. Thank you, Mr. Chairman. I yield back.

Mr. COOK. Thank you.

Mr. Pearce.

Mr. PEARCE. Thank you, Mr. Chairman.

Dr. Hitzman, you were just talking about how we should make the information available where Mr. Krebs could go out and find the rare earth mineral sites, right? Eleven of them in New Mexico they shut down. The jobs are in China now. So, if you want to come, Mr. Krebs, we will drive you out there to them.

[Laughter.]

Mr. PEARCE. The flags are still in the ground, and the jobs are gone. And, by the way, the Chinese started charging 35 percent excise tax on the rare earth minerals, because they want to put our manufacturers out of business. Since they have the mining in their country, they want to put our manufacturers out of business for these strategic resources. And Ms. Pagel said they are getting an unfair deal. I don't know, it is just hard to rectify that.

What sort of rate of return do you make on your silver mines, Mr. Krebs? Not your gross income, that is——

Mr. KREBS. Well, yes. It depends on what the price of silver is, obviously.

Mr. PEARCE. Today. What are you getting today, roughly?

Mr. KREBS. Today, a rate of return on a new mine?

Mr. PEARCE. No, just your gross income.

Mr. KREBS. On a gross income we make cash flow of a couple hundred million dollars a year, then we pay——

Mr. PEARCE. What percent is that?

Mr. KREBS. That is about 15 percent.

Mr. PEARCE. Fifteen percent? And what comes out after you get gross income on the tax reforms? What comes out after gross income? What do you take out of that?

Mr. KREBS. After all the capital expenditures that we are required to make to continue operating, this year will be——

Mr. PEARCE. Gross income does not include taxes, does it?

Mr. Cress, you seem to know a little bit about this. So, you are going to move from gross income to net income. What are the deductions out of that, Mr. Cress?

Mr. CRESS. [No response.]

Mr. PEARCE. Mr. Cress?

Mr. CRESS. I am sorry, I am not sure for his company.

Mr. PEARCE. No, no, I am just talking in general. If you are going to move from gross income to net income—

Mr. CRESS. Yes, you are going to have taxes, you are going to have depreciation, you are going to have depletion.

Mr. PEARCE. So, really, when Ms. Pagel mentioned the 15 percent gross income, it is a little bit tricky because taxes come out after that.

Mr. CRESS. Yes, that is correct.

Mr. PEARCE. Payroll taxes, any other taxes, any taxes to the state, any taxes to other countries come out after that. So, this quoting of 15 percent gross income is, I think, misleading at best.

Now, again, reading Ms. Pagel's testimony, she says that more than half the delays, a majority of the delays, are up to you. So, your 19 years, she would assert that 9½ years plus were due to your actions. Can you document that to be a correct statement or an incorrect statement?

Mr. KREBS. It is a little bit of a chicken and the egg, because every time there are lawsuits filed that delay things for long enough, inevitably the price, the economics change. Then we are forced to go back and re-look at what can actually be an economic approach to mining the resource. So, then we have to start over and then that gets litigated.

So, whether that is on us for changing the plan, or if we are changing the plan because we are delayed, I think it is the latter.

Mr. PEARCE. Again, maybe there is a more complex argument to be made than just that you are out there changing plans, randomly.

Mr. KREBS. Yes. We would prefer to not do that, if we didn't have to.

Mr. PEARCE. So, again, the assertion was made that you dump 200,000 tons or gallons or something—200,000 is the number that jumps out of the testimony—into Slate Lake, the Lower Slate Lake. Do you do that?

Mr. KREBS. We have a tailings facility there that we contain that material. We treat it and release it at standards that are set by the state of Alaska, which are among the highest in the country.

Mr. PEARCE. So, you are not going to put 4.5 million tons of solids into the lake?

Mr. KREBS. Solids go into the lake, but that is ultimately what will form the base of this much larger lake that will be a much, much healthier body of water by the end of the mine life.

Mr. PEARCE. All right. Mr. Cress, the potash industry is one of the few mining industries still in New Mexico. And we have significant potash. What would happen to those jobs if we had an 8 to 12 percent royalty increase in potash?

Mr. CRESS. Every mine would close. I have worked in that industry with clients in your state. That industry, which has royalties that have ranged between 2 and 5 percent, has struggled because of foreign competition, cartels in Russia and Belarus and in Canada that have affected pricing. And you would lose every single job if you had a higher royalty.

And, in fact, the government has offered royalty relief, which is something in my testimony I suggest you include. The government

allows the companies to come in and ask for a reduced rate when the economics or unfair foreign competition affects them.

Mr. PEARCE. Thank you, sir.

Thank you, Mr. Chairman.

Mr. COOK. Mr. Tipton.

Mr. TIPTON. Thank you, Mr. Chairman, and thank the panel for taking the time to be able to be here.

Mr. Krebs, that was interesting, listening to some of your testimony that was going on. And I just want to know and make sure that this is the policy of mining not only in the United States, but wherever you do operations. You were talking about reclaiming a lake which currently, apparently, is not qualified to be able to have aquatic life, and that you are going to be able to reclaim that lake.

You were talking about being able to go to Bolivia to be able to do it responsibly. That is the method that your company works at, no matter where they are at.

Mr. KREBS. No matter where.

Mr. TIPTON. Environmentally responsible?

Mr. KREBS. That is correct, sir.

Mr. TIPTON. Great. Can you tell me just a few of the environmental laws maybe that you do comply with? Give a little bit of background. I am not sure we all understand the extent that industry goes to to responsibly develop a resource.

Mr. KREBS. Well, the number of acronyms are long. NEPA and CERCLA you know at the state level, at the Federal level. Like I said in my remarks, at Kensington, not only did we have to obtain 90 different permits, but now we have to keep track and remain in compliance with all 90 of those over the life of the asset. That is a huge exercise.

We are proud to do it, we do a really good job of it. You can talk to anybody in Alaska about our performance in Kensington, and they would tell you that they love having us there, and we do a terrific job on the environment. And all communities where we operate would say the same thing.

But the mish-mash between the state and the Federal agencies and the overlap and duplication has really created a spider's web of different regulations that we need to try to keep up with and follow, as a company.

Mr. TIPTON. I appreciate that. And my colleague from Colorado and I both share a passionate concern over some of the issues that you addressed in your written testimony in regards to the abandoned mine land cleanup that goes on.

The EPA caused the Gold King Mine spill in the state of Colorado. Part of the challenge that we really have, I think, is maybe perspective, in terms of being able to move forward to be able to address these issues. We both share a passion in regards to Good Samaritan legislation. But from the starting point, when we talk about the lands to be able to be cleaned up, some of these patents, some of the development of the projects, these were primary 1800s, early 1900s, would that be a reasonable, accurate statement to be able to make?

Mr. KREBS. Yes, exactly.

Mr. TIPTON. And when those companies were operating, did they have the same environmental compliance requirements that you just described?

Mr. KREBS. I would say they had no environmental——

Mr. TIPTON. They had none. And are they still in existence today?

Mr. KREBS. No, they are long gone.

Mr. TIPTON. So, the sensible thing to do is to be able to work together, to be able to strive and create legislation to actually get in and address the problem.

You had talked about being able to have some private-public partnerships to be able to move forward. What are some of the obstacles right now? What is going to stop you? What is going to stop Trout Unlimited from being able to work together to address mine cleanup?

Mr. KREBS. Yes. I have mentioned the historic liability, stepping into the shoes of all of that. That is what Good Sam would address.

I think the other obstacle, to be honest, you mentioned, like a Trout Unlimited. We would love to partner with some NGOs, because we see this as being a great intersection between industry and groups like that.

I think, oftentimes, those groups may not want to see those mines cleaned up, because it eliminates an issue that is great for fundraising. Abandoned mines are great for fundraising for NGOs. We would prefer to instead work with them, side by side, and be a part of a coalition that could do some great things here in this country. It seems like a winner of an idea, no matter what your perspectives are.

Mr. TIPTON. So, if we can address the liability issue—the people who did it, no longer there. The people who want to be able to do the right thing—you, Trout Unlimited, and others that are willing to be able to step forward, to have reasonable liability going forward, we can actually start to fix the problem that we all identify as something that does need to be able to be addressed.

Mr. KREBS. We would love to be a part of that solution.

Mr. TIPTON. Great. Thank you, Mr. Chairman, and I yield back.

Mr. COOK. Thank you.

Mr. HICE.

Dr. HICE. Thank you, Mr. Chairman.

Dr. Hitzman, let me begin with you. You are familiar with the 2017 Mineral Commodity Summaries Report?

Dr. HITZMAN. Yes, sir.

Dr. HICE. By the way, Mr. Chairman, I would ask unanimous consent that this portion of that report be submitted to the record.

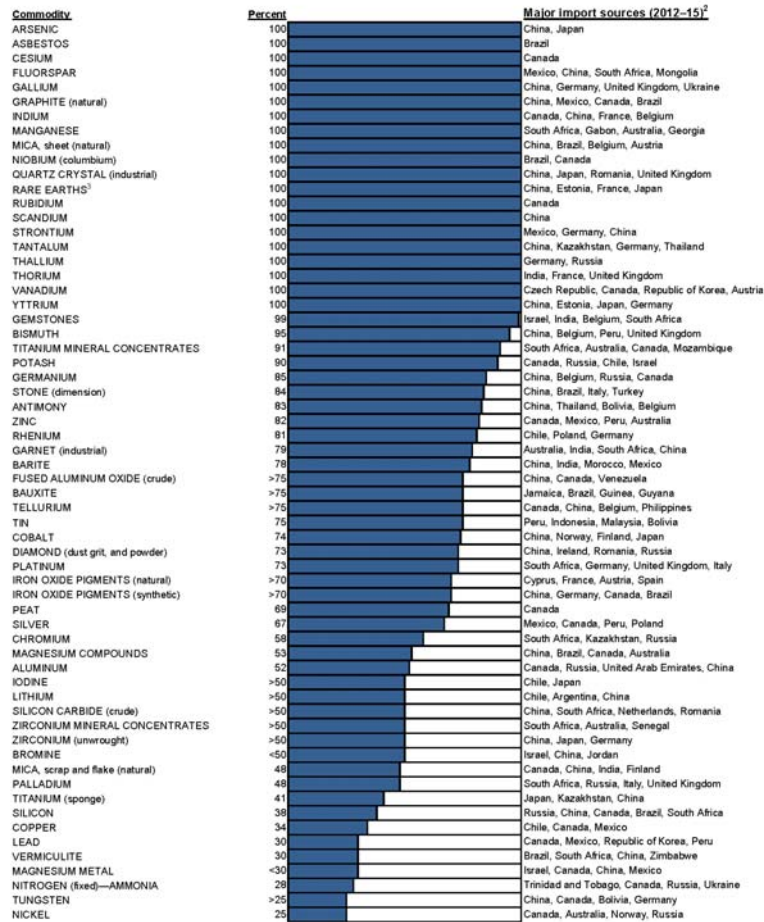
Mr. COOK. Without objection.

[The information follows:]

Rep. Hice Submission

MINERAL COMMODITY SUMMARIES 2017

Page 6

2016 U.S. NET IMPORT RELIANCE¹

¹Not all mineral commodities covered in this publication are listed here. Those not shown include mineral commodities for which the United States is a net exporter (alumina; boron; clays; diatomite; helium; iron and steel scrap; iron ore; kyanite; molybdenum; sand and gravel, industrial; selenium; soda ash; titanium dioxide pigment; wollastonite; and zeolites) or less than 25% import reliant (abrasives, metallic; beryllium; cadmium; cement; diamond; industrial stones; feldspar; gypsum; iron and steel; iron and steel slag; lime; perlite; phosphate rock; pumice; sand and gravel, construction; salt; stone, crushed; sulfur; and talc). For some mineral commodities (gold, hafnium, and mercury), not enough information is available to calculate the exact percentage of import reliance.

²In descending order of import share.

³Data include lanthanides.

SIGNIFICANT EVENTS, TRENDS, AND ISSUES

In 2016, the estimated value of total nonfuel mineral production in the United States of \$74.6 billion was a slight increase from the revised total of \$73.4 billion in 2015. Increased construction activity spurred increased production of industrial minerals, especially those used in infrastructure and residential construction. Although starting the year relatively low, prices for several metals, especially for some of the precious metals, began to trend upward. Decreased production of most metals produced in the United States, however, contributed to an overall decline in the value of metal production. Several U.S. metal mines and processing facilities were idled or closed permanently in 2016, including iron ore mines in Michigan and Minnesota; three primary aluminum smelters in Indiana, Missouri, and Washington; one secondary zinc smelter in North Carolina; a titanium sponge facility in Utah, the only such facility in the United States; and titanium mineral operations in Virginia. In addition, in May, the weekly average rig count for oil and gas drilling reached its lowest level since the 1940s when that measurement was first recorded. The reduced drilling activity resulted in decreased production of some industrial mineral products used in the drilling sector.

The U.S. Geological Survey (USGS) generates composite leading and coincident indexes to measure economic activity in the primary metals and the nonmetallic minerals industries. As shown in the charts on page 4, for each of the indexes, a growth rate is calculated to measure its change relative to the previous 12 months. The indexes' growth rate is a 6-month smoothed compound annual rate that measures near-term trend. Usually, a growth rate above +1.0% signals an increase in primary metals or nonmetallic minerals industry activity, and a growth rate below -1.0% indicates a downturn in activity. The primary metals leading index growth rate increased steadily January through November 2016 (-4.4 to 6.8, respectively). Additionally, November 2016 represented the seventh consecutive month with a primary metals index growth rate greater than +1.0%, which may signal near-term strength in primary metals industry activity. The nonmetallic mineral products industry leading index growth rate, after declining from January through March 2016, moved above the growth rate threshold (+1.0%) in April and May, declined below the threshold in June, then moved above in July, below in August, and above September through November. This may suggest gathering strength in the nonmetallic mineral products industry in the near term.

As shown in the figure on page 5, minerals remained fundamental to the U.S. economy, contributing to the real gross domestic product at several levels, including mining, processing, and manufacturing finished products. The estimated value of nonfuel mineral raw materials produced at mines in the United States in 2016 was \$74.6 billion, a slight increase from the revised total of \$73.4 billion in 2015. Domestic raw materials and domestically recycled materials were used to process mineral materials worth \$675 billion. These mineral materials were, in turn, consumed by downstream industries with an estimated

value of \$2.78 trillion in 2016, a 3% increase from the revised figure of \$2.69 trillion in 2015.

The figure on page 6 illustrates the reliance of the United States on foreign sources for raw and processed mineral materials. In 2016, imports made up more than one-half of the U.S. apparent consumption of 50 nonfuel mineral commodities, and the United States was 100% import reliant for 20 of those. This is an increase from 47 and 19 nonfuel mineral commodities, respectively, in 2015. The figure on page 8 shows the countries from which the majority of these mineral commodities were imported and the number of mineral commodities for which each highlighted country was a leading supplier. China, followed by Canada, supplied the largest number of nonfuel mineral commodities. Additionally, the United States was import reliant for an additional 30 commodities and was a net exporter of 16 nonfuel mineral commodities.

The estimated value of U.S. metal mine production in 2016 was \$23.0 billion (table 1), 5% less than that of 2015. Principal contributors to the total value of metal mine production in 2016 were gold (37%), copper (29%), iron ore (15%), and zinc (7%). The estimated value of U.S. industrial minerals production in 2016 was \$51.6 billion, about 5% more than that of 2015. The value of industrial minerals production in 2016 was dominated by crushed stone (31%), cement (18%), and construction sand and gravel (17%).

In 2016, U.S. production of 13 mineral commodities was valued at more than \$1 billion each. These were, in decreasing order of value, crushed stone, cement, construction sand and gravel, gold, copper, industrial sand and gravel, iron ore (shipped), lime, phosphate rock, salt, soda ash, zinc, and clays (all types).

In 2016, 11 States each produced more than \$2 billion worth of nonfuel mineral commodities. These States were, in descending order of production value, Nevada, Arizona, Texas, California, Minnesota, Florida, Alaska, Michigan, Wyoming, Missouri, and Utah (table 3).

The Defense Logistics Agency (DLA) Strategic Materials is responsible for providing safe, secure, and environmentally sound stewardship for strategic and critical materials in the U.S. National Defense Stockpile (NDS). DLA Strategic Materials stores 37 commodities at 6 locations in the United States. In fiscal year 2016, DLA Strategic Materials acquired \$3.72 million of new materials and sold \$42.5 million of excess materials from the NDS. At the end of fiscal year 2016, materials valued at \$1.1 billion remained in the NDS. Of the remaining material, some was being held in reserve, some was offered for sale, and sales of some of the materials were suspended. Additional detailed information can be found in the "Government Stockpile" sections in the mineral commodity chapters that follow. Under the authority of the Defense Production Act of 1950, the U.S. Geological Survey advises the DLA on acquisitions and disposals of NDS mineral materials.

Dr. HICE. Thank you.

According to the report, the United States is currently 100 percent import-dependent for about 20 minerals, and more than 50 percent import-dependent on another 30 minerals. I find this stunning. A lot of these are very important minerals, and minerals that we have here in the United States. Yet, we are 100 percent dependent on imports from other countries. How do you explain this?

Dr. HITZMAN. It is different for different minerals. The one that has been the poster child is the rare earths, where, clearly, one

country has, I think, had a policy of trying to actually become the dominant producer in the world.

There are other minerals, often by the Chinese as well, where that is the case. There are some other minerals where, to be honest, we may have some in this country, but the most economic deposits that we know of in the world are in other countries, so it makes the most economic sense to mine them there.

I think it is different for each one of them.

Dr. HICE. All right. So, we have these minerals in the United States, but there are multiple barriers—whatever you may define as a barrier—that prevent us from getting to them here in our own country, or it is more economical to get them elsewhere.

I certainly believe we have barriers, as well. But one of the big barriers that appears to be glaring to me is the fact that, as I understand it, it takes 7–10 years, on average, here in the United States to go through the permitting process, where you look at other countries—Canada and Australia, for example—who have the same safeguards at the end of the line that we do, and yet it only takes 2 or 3 years for them to get through the process.

So, we are taking three times the amount of time to get to the end of the product, whatever it may be, the mineral, as other countries. Why is that?

Dr. HITZMAN. From the USGS point of view, we are not involved in that discussion, since we have nothing to do with it. We are non-regulatory.

Dr. HICE. Does anyone on the panel, is anyone else involved in that discussion? Why does it take so long?

Mr. KREBS. Lack of coordination between states and DC, and litigation. Those would be the two main issues.

Could I make one other comment about the foreign ownership of metals real quick? Obviously, I am not as close to the rare earth side of the industry, but around the world, the M&A activity for new assets, or for existing assets or companies, when you look at the prospective buyers lists that I see, it is Chinese companies that are at the top of the list, looking to acquire these things around the world. They have the lowest cost of capital, they look at the returns on these types of things differently than most companies. And, I would say, they have a nearly insatiable appetite for looking to acquire these assets, no matter where they are, whether they are here, Africa, you name it.

Dr. HICE. Well, sure, and I think a lot of people forget the fact that Apple came up with the iPhone 10 years ago right now, 2007. And we have quartz crystals in all of our phones. We have it right here in the United States. But as long as the iPhone has been around, had we started then with the permitting process, we would only today be allowed to start getting after it. We have 10 years that we have lost time. This is insanity. It is absolute insanity to me.

And I am not even thinking that we ought to be on par with countries like Canada or Australia that take 2 years compared to our 7–10 years. Why can't we do it in a year? Why can't we do it in a year-and-a-half? Why can't we be ahead of them, better than them? This is the frustrating thing to me.

We are so encumbered with regulations, mitigation, litigation, and whatever other “ation” we want to talk about, that we are not able to get done what we have right here in our own country. And to me, it is just totally inexcusable. We have to find our way through this maze for the sake of our own country, our jobs, and what resources we have that are so valuable. Thank you, Mr. Chairman.

Dr. GOSAR [presiding]. I thank the gentleman. The gentleman from Illinois is now recognized for his 5 minutes.

Mr. LAHOOD. Thank you, Mr. Chairman, for having this hearing today. I want to thank the witnesses for being here today, and I appreciate your testimony.

Mr. Krebs, welcome here today. My home state of Illinois, we are glad that Coeur Mining is headquartered in Illinois, are proud to have you there, and appreciate your comments here today, and the high standards that Coeur Mining has throughout the country, particularly in Alaska and Nevada.

In a prior life, I spent 5 years as a Federal prosecutor in Nevada, and actually spent time in Lovelock, so I have been up there a few times. I know that area well, which a lot of people don't get to. It is actually getting a lot of publicity today because of the prison up there.

In Ms. Pagel's testimony, her written testimony, she made a reference, obviously, to the Kensington Mine as it related to Coeur Mining, but also the Wharf Mine. I know you have talked about Kensington. I was just wondering if you could comment on the Wharf Mine a little bit, and get your perspective.

Mr. KREBS. Yes, sure, thank you. Nice to see you. The Wharf Mine is a gold mine that we bought 2 years ago from a Canadian mining company. So, what happened in 2007 was obviously not while we have been there.

I can say, since we have owned that thing, the environmental standards, the safety performance have all gone in the right direction. If you could ever come out and see that mine, you cannot find another mine, I don't think anywhere in the world, where—our next-door neighbor is actually a ski resort. When you are skiing at Terry Peak in the Black Hills of South Dakota, you are skiing down, looking out over the Wharf Mine. And the partnership between the ski mountain, and the ownership, and the mine is as strong as any partnership I have ever seen.

So, when you think about mining being sometimes like an adversary or whatever, to think that our biggest supporter in town in that area is a ski resort—usually skiing and mining do not go hand in hand—there is not a person out there in western South Dakota who is not a fan of the Wharf Mine. And we have brought the same standards there, now that we have owned that mine, that we have everywhere else.

Mr. LAHOOD. Great, thank you. You also talked a little bit in your written testimony about what Coeur has been doing with renewables and green technology. Can you expound on that a little bit?

Mr. KREBS. Yes. If anybody likes solar energy, then you have to like silver. Every new gigawatt of photovoltaic capacity that gets installed around the world consumes about 2½ million ounces of

silver, both on the front side of the panel and then on the back side of the panel. And now, I think, global PV installations this year are something like 70 million gigawatts. It is mostly in China, here, India, and to a lesser extent in Japan.

So, in order for there to be more solar energy, more photovoltaic capacity, there has to be silver to go onto those panels. We love the idea of being a part of a clean source of energy for this country and for everywhere. That is what we are all about.

Mr. LAHOOD. We have heard a lot today about litigation, bureaucracy, the cumbersome process in the United States. In a company like yours, when you are looking at new investors or shareholders, or looking at new opportunities, tell me how that conversation goes when somebody could go elsewhere around the world, instead of the United States.

Mr. KREBS. Yes, most non-U.S. companies—take Canadian companies or Mexican companies—they typically do not put the United States up at the top of the list because of some of these issues around uncertainty, changing rules.

Like I said, there are a lot of positives about coming to the United States, but it is a commodity market, it is around the world. We all look at rate of return, and what goes into rate of return is how much money do you have to put in, when can you start getting cash flow back out, what is the tax rate on the cash flow that you do generate, and can you have the ability to continue drilling to extend and expand that deposit that you are trying to mine to try to generate an appropriate rate of return for investors.

And exploration in this country has gotten a lot harder. Permitting to get to just drill and explore has gotten harder. That is why you have seen exploration fall off a cliff in this country, and U.S. production levels of at least silver and gold have peaked and are now declining.

Mr. LAHOOD. Thank you for your comments.

Those are all my questions, Mr. Chairman.

Dr. GOSAR. I thank Mr. LaHood for his comments. We are going to quickly just do the Ranking Member and myself, a second round.

Mr. Parke, how many state permits are typically required for a mine in Arizona?

Mr. PARKE. Well, Mr. Chairman, it varies, as has been discussed today. I do have some examples. The number of permits required depends on the facility design. A modern mine, the Safford Mine, holds six different permits on various activities and locations throughout the footprint of the mine.

There are also various health, safety, and water quantity permits and general regulatory requirements that also may apply, depending on specific activity being conducted.

Dr. GOSAR. And what is the average timeline, on average there?

Mr. PARKE. I appreciate that question, because there has been a lot of discussion on that today. And ADEQ is very proud of the results that we have provided, but it does not impact the Federal process.

So, individual permit time frames are longer than general permits, but ADEQ has made significant improvements in the speed of our permitting process for all industry types. For example, ADEQ reduced the average permitting time frames for APPs—that

is our aquifer protection program—from 351 days in 2012 to 99 days in 2017. And ADEQ's goal is to issue all individual permits within 180 days, regardless of the program.

For example, also with air quality permits, ADEQ has reduced the average permitting time frame from 199 days in 2012 to 74 days in 2017, all while still remaining protective of the environment.

Dr. GOSAR. Yes, and I am very aware, coming from Arizona, as well. So, I want to applaud you.

In your testimony, you mention seven distinct programs relevant to mining. Could you briefly go into detail about these programs, the environmental assessments required by these programs, as well as the coordination amongst the programs—how does it happen and who is the lead agency?

Mr. PARKE. Yes. I would like to mention that those seven programs are distinct within the state framework. That does not include NEPA or the other time frames. We have the state aquifer protection program, which protects groundwater; the Clean Water Act, which protects surface water but is administered by the state; the Clean Air Act protections; natural resource damage coverages; RCRA solid and hazardous waste programs, including solid waste facility permits for mine operations; state land reclamation bonding; and, of course, Arizona Mine Land Reclamation Act.

The coordination of those—Mr. Krebs probably can speak more directly, too—but, in fact, we work with the Federal Government through the NEPA process. The problem is that the individual organizations find themselves—to use Mr. Krebs' turn of phrase, a chicken and an egg. Which one do I do first? Because I am inevitably going to have to amend, if I cannot get through one or the other.

So, that one review, one permit idea could reduce significant waste in the process.

Dr. GOSAR. Let me get this straight. In Arizona, we drink whiskey because water is for fighting over, right?

Mr. PARKE. That is correct.

Dr. GOSAR. We don't like dirty water, do we? I don't. You don't.

Mr. PARKE. We have many dry counties, and in Arizona that doesn't mean whiskey.

[Laughter.]

Dr. GOSAR. Yes, and I will tell you, we are very astute about our water quality.

You bring up a good point about coordination. It seems like a very smart application to be able to have, like, a case coordinator. I am a businessman, and it seems like we could do things a lot faster if we have somebody kind of coordinating, and we are doing things at the same time. Does that make sense to you, Mr. Parke?

Mr. PARKE. Absolutely, and in this new era of cooperative federalism, the state continues to seek additional authorities from the Federal Government.

The Arizona Department of Environmental Quality is going to seek Clean Water Act 404 permit authority, as well as authority for the underground injection control program, which intersects with our APP, which should streamline that.

Quickly, the planned Resolution mine, as was testified before the Committee in March of 2017, has reported expenditures of \$1.3 billion for permitting studies and project shaping, and still does not have a final permit after almost 10 years, without producing an ounce of product. That is madness.

Dr. GOSAR. Yes. One quick question. We are going to go real quickly. Has there been any forfeiture of financial assurances in Arizona?

Mr. PARKE. No. Again, to that point, there has been no release that has triggered a FAR. Even when companies struggle, the reality is the value of the assets in the ground make that ground still valuable. So, while the company may leave, as Mr. Krebs alluded to, another company is ready to come in.

Dr. GOSAR. I appreciate your comments, and I am going to now turn it over to the Ranking Member, Mr. Lowenthal, for 5 minutes.

Dr. LOWENTHAL. Thank you, Mr. Chair.

Mr. Cress, I have a follow up on some questions that we have been talking about—royalties, and I am going to bring us back again.

The Federal Government already charges a royalty on hardrock minerals in a few selected places such as on acquired lands. We also do it, I think, in Minnesota. What type of royalties are being charged there? And can you tell us how the mining industry is faring under these royalties?

Mr. CRESS. I am aware of that. Minnesota is one example. I think the royalties are net smelter royalties, I believe, net smelter returns. It is not a refining cost. And I guess I can't answer the latter question because I don't know—

Dr. LOWENTHAL. About how well they are doing. But have they been impacted?

Mr. CRESS. I don't know how many of them are on Federal land. So, it is hard to answer that question. I could look into it, but I don't have that answer at my fingertips.

Dr. LOWENTHAL. I am kind of struck with the fact that, although I think you are all experts, there is a lack of information out there, in many ways, about what the status is, how many abandoned mines there are, what is actually being charged or not being charged. Even the question about the permitting delay. I do not deny that there are issues there, but I don't see any data to really understand what the issue is.

And I am not blaming anybody, it is just, whatever we do, it would be nice to base it upon information that we kind of agree upon, all of us, that this is the most accurate that we have at this moment. And I think that is what is so good about this hearing, we are beginning to talk about those issues.

Other things I would like to ask is, Ms. Pagel, one of the common complaints about the Mining Law is that land managers at BLM or the Forest Service act as if they say they can't say no to a proposed mine. Can you talk a little bit about that, and why that is so, if in your experience, that really is so?

Ms. PAGEL. It is. The way the 1872 Mining Law has been interpreted over the years is to make mining the highest and best use of public lands. So, even when there is a potential conflict with a wilderness area or a sacred site, the BLM and Forest Service have

said time and time again that they do not feel like they have the authority to say, “You know what, this is probably not a place for mining.”

Dr. LOWENTHAL. In following that up, when we are talking about special places like wilderness, study areas, national monuments, what I hear you saying is that they are not currently protected from mining or mining impacts by the 1872 law.

Ms. PAGEL. Some of them are. National monuments, when each monument is created, usually there is some sort of mining withdrawal to prevent mining in the monument.

But there are cases with wilderness areas—for example, in Montana, there are two mines that would like to tunnel underneath a wilderness area from each side. There are some endangered species in the area, both grizzly bear and trout, and studies have shown that those mines, tunneling underneath those wilderness areas, will have negative impacts on the endangered species. Yet, we find ourselves, unfortunately, in litigation because the Forest Service really feels like they do not have the ability to say no to those mines.

Dr. LOWENTHAL. Thank you. And, Mr. Chair, before I yield back I would like to enter into the record pictures of Lower Slate Lake, which was before and after mining occurred.

Dr. GOSAR. Without objection, so ordered.

[The information follows:]

Rep. Lowenthal Submission

LOWER SLATE LAKE PHOTOS

Before



After



Dr. GOSAR. Just one real quick question or comment.

The multiple-use public doctrine for public lands was a contract with the Federal Government to states for the maximum revenues in lieu of states not reclaiming their lands. That is what precludes all aspects, just as an FYI for the last comment.

I thank the witnesses for their valuable testimony and the Members for their questions. The members of the Subcommittee may have some additional questions—I am sure they will, and I know they do. We will ask you to respond to those in writing. Under Committee Rule 3(o), members of the Subcommittee must submit those questions within 3 business days following the hearing, and the hearing record will be held open for 10 business days for those responses.

If there is no further business, without objection, the Subcommittee stands adjourned.

[Whereupon, at 10:51 a.m., the Subcommittee was adjourned.]

