

ALASKA STATE LEGISLATURE
SENATE RESOURCES STANDING COMMITTEE

April 15, 2024

3:32 p.m.

MEMBERS PRESENT

Senator Click Bishop, Co-Chair
Senator Cathy Giessel, Co-Chair
Senator Bill Wielechowski, Vice Chair
Senator James Kaufman
Senator Forrest Dunbar
Senator Matt Claman

MEMBERS ABSENT

Senator Scott Kawasaki

COMMITTEE CALENDAR

SENATE JOINT RESOLUTION NO. 19

Supporting trade policies for the United States that hold China and other countries accountable, reward leadership in clean production standards, reward superior environmental performance, support economic development, and support the rebuilding of supply chains in the United States.

- MOVED CSSJR 19 (RES) OUT OF COMMITTEE

PRESENTATION(S): DEPARTMENT OF NATURAL RESOURCES, NEXT GENERATION MINERAL ASSESSMENT IN ALASKA

- HEARD

PREVIOUS COMMITTEE ACTION

BILL: SJR 19

SHORT TITLE: SUPPORTING CERTAIN US TRADE POLICIES

SPONSOR(S): RESOURCES

03/22/24	(S)	READ THE FIRST TIME - REFERRALS
03/22/24	(S)	RES
04/15/24	(S)	RES AT 3:30 PM BUTROVICH 205

WITNESS REGISTER

JULIA O'CONNOR, Staff
Senator Cathy Giessel
Alaska State Legislature
Juneau, Alaska

POSITION STATEMENT: Presented the explanation of changes from Version B to S of SJR 19.

DAVE BANKS, Managing Director
Battle Group
Fairfax, Virginia

POSITION STATEMENT: Delivered a presentation related to SJR 19.

MELANIE WERDON, Director
Division of Geological & Geophysical Surveys
Department of Natural Resources (DNR)
Fairbanks, Alaska

POSITION STATEMENT: Co-presented the presentation on Next Generation Mineral Assessment in Alaska.

JOHN CROWTHER, Deputy Commissioner
Department of Natural Resources (DNR)
Anchorage, Alaska

POSITION STATEMENT: Co-presented the presentation on Next Generation Mineral Assessment in Alaska.

ACTION NARRATIVE

[3:32:11 PM](#)

CO-CHAIR CATHY GIESSEL called the Senate Resources Standing Committee meeting to order at 3:32 p.m. Present at the call to order were Senators Claman, Dunbar, Kaufman, Wielechowski, Co-Chair Bishop, and Co-Chair Giessel.

SJR 19-SUPPORTING CERTAIN US TRADE POLICIES

[3:32:57 PM](#)

CO-CHAIR GIESSEL announced the consideration of SENATE JOINT RESOLUTION NO. 19 "Supporting trade policies for the United States that hold China and other countries accountable, reward leadership in clean production standards, reward superior environmental performance, support economic development, and support the rebuilding of supply chains in the United States."

[3:33:09 PM](#)

CO-CHAIR GIESSEL solicited a motion.

[3:33:11 PM](#)

CO-CHAIR BISHOP moved to adopt the Committee Substitute (CS) for SJR 19, work order 33-LS1498\S, as the working document.

[3:33:46 PM](#)

CO-CHAIR GIESSEL objected for purposes of discussion.

[3:33:57 PM](#)

JULIA O'CONNOR, Staff, Senator Cathy Giessel, Alaska State Legislature, Juneau, Alaska, presented the explanation of changes from Version B to S of SJR 19:

[Original punctuation provided.]

SENATE JOINT RESOLUTION 19
SUPPORTING CERTAIN U.S. TRADE POLICIES

Explanation of Changes

SENATE CS for Senate Joint Resolution 19 (RES)
Version 33-LS1498\B to 33-LS1498\S

The Senate Resource Committee adopted the following changes:

- Updated title, technical change
- Page 2, lines 12 to include Russia along with China as a focus of the resolution

[3:34:28 PM](#)

CO-CHAIR GIESSEL announced invited testimony on SJR 19.

[3:35:02 PM](#)

DAVE BANKS, Managing Director, Battle Group, Fairfax, Virginia, delivered a presentation related to SJR 19. He gave a brief overview of his work history. He said that he would be discussing the challenges facing America and the threat of Chinese and Russian aggression as well as Alaska's role in helping to address these challenges. He stressed the need for a new federal trade policy to help strengthen competitiveness, increase supply chain security, bolster the economy, and create well-paying jobs while holding major polluters (e.g. China) accountable. He opined that Alaska would benefit from trade policy that values high environmental and labor standards. He commented that few states produce resources as "cleanly" as Alaska and the industry in Alaska could serve as a model for the rest of the world.

[3:37:13 PM](#)

MR. BANKS said that reversing the United States' decreasing competitiveness in the national market is becoming a national priority. US manufacturing output has fallen relative to foreign competitors - particularly since China's entry into the World Trade Organization (WTO). He stated that this cost the US roughly 3.4 million jobs. He briefly described Chinese production and trade practices.

[3:38:20 PM](#)

MR. BANKS moved to slide 2 and spoke to the maps depicting China's increasing global dominance in importation from 2000 to 2021. He stated that this expansion has significantly decreased access to gateway jobs from the lower to middle classes in the United States. He shared a personal story to illustrate the destructive impact of naïve trade policy. He emphasized the impact this has on Americans' health and supply chain security. The latter has an impact on key strategic sectors, including strategically critical minerals.

[3:40:41 PM](#)

MR. BANKS moved to slide 3 and spoke to the production of selected minerals based on country. He said that China is wealthy in minerals - although not enough to achieve the goal of dominating worldwide mineral trade. He said that gaining global supremacy in mineral resource extraction and processing would help China to secure its role as the world's factory and increase China's power and influence. He explained that China has reinforced its edge in domestic mineral production by extending control of overseas mining interests. He briefly explained this process. He stated that this is too risky for the United States. He briefly discussed how China controls both production and refining of various minerals and the impacts this has on the global mineral supply chain.

[3:41:45 PM](#)

MR. BANKS briefly referred to slide 2 and reiterated that this slide illustrates how China dominates in strategic minerals, including extraction in Sub-Saharan Africa. He advanced to slide 4 and discussed Chinese controlled production of selected minerals in Africa. He stated that the current trade regime rewards "bad performers" such as China and Russia and ignores the environmental superiority of American producers. He emphasized that the United States leads with respect to reduced emissions.

[3:42:18 PM](#)

MR. BANKS moved to [slide 5] and contrasted Chinese CO2 emissions with the United States' CO2 emissions. He emphasized that from 2005 to 2020, the US led in cutting CO2 emissions and briefly explained the data. He contrasted this with China's CO2 productions, which grew by 24 percent during the aforementioned time period. He pointed out that China's emissions levels are currently three times that of the US. He stated that the United States is one of the cleanest countries in terms of the amount of carbon needed for production. He referred to a 2020 report published by the Climate Leadership Council that found US manufactured products to be 40 percent more carbon efficient than the world's average. He contrasted this with China's manufactured products, which require at least three times more carbon than in the US. He also contrasted this with Russian manufactured products, which require at least four times more carbon.

[3:43:09 PM](#)

MR. BANKS moved to [slides 7 and 8] and discussed America's carbon efficiency across a variety of sectors compared to that of select U.S. allies and China. He noted that mining and other resource extraction activities in China are more than two times as carbon intensive than in the US. For mining support services, the gap is more than 5 times. He argued that resource production in the US (including in Alaska) would displace "dirtier" resource production overseas -particularly from China- and this would reduce global emissions. He said that greenhouse gas life-cycle emissions of coal, natural gas and oil vary by supplier.

[3:44:08 PM](#)

MR. BANKS moved to slide 9 and spoke to the 20-year life cycle emissions from fossil fuels. He explained that Russian produced natural gas, shipped via pipeline to Europe has roughly 41 percent higher life-cycle emissions than US liquified natural gas (LNG) shipped to the same destination. Similarly, Russian produced natural gas shipped via pipeline to China has 47 percent higher life-cycle emissions than US LNG exported to China. He noted that this data reflects US Gulf Coast exports and surmised that the numbers would be better if Alaskan exports were included.

[3:45:17 PM](#)

MR. BANKS said that US producers would benefit from a policy framework that rewards environmental performance. He argued that this type of approach would drive efficiency gains across the global fossil fuel supply chain, encouraging industries to invest in advanced technologies and adopt best practices. He

said this would hold foreign competitors like Russia and China accountable. He reiterated that current trade rules do not reward US industry for its environmental performance; instead, poor environmental performers such as Russia and China are rewarded. He argued that this results in the off shoring of domestic jobs and undermines socio-economic mobility in the US.

[3:46:15 PM](#)

MR. BANKS moved to slide 10 and said that America and its allies are at a significant disadvantage, with Chinese dominance in global trade and supply chains. He asserted that America must work to wrest control of these critical supply chains from China and Russia. He argued that a new trade policy would offer an opportunity to bolster US economic and job security while reducing the influence of American adversaries in the global economy.

[3:47:01 PM](#)

CO-CHAIR GIESSEL removed her objection; finding no further objection, CS SJR 19 was adopted.

[3:47:19 PM](#)

CO-CHAIR GIESSEL asked Mr. Banks to summarize the CS SJR 19.

[3:47:28 PM](#)

MR. BANKS replied that the purpose of the resolution is to send a request to the federal government to reset US trade policy. He clarified that CS SJR 19 does not specify a particular policy; rather, it calls for a new trade policy that would hold foreign polluters accountable and reward US industry for its environmental performance.

[3:48:15 PM](#)

CO-CHAIR GIESSEL agreed with this summary. She added that this would include raising awareness of the carefulness the US places on the protection of air, water, and land. She pointed out that, while Alaska has vast minerals, these are largely sent to China for processing. Once they cross the border into China, they become property of China. The Chinese government is then in control of the export of these minerals, which poses challenges when the US attempts to buy them back. She briefly discussed several minerals that are produced at the Red Dog Mine and are now banned from export in China. She asked Co-Chair Bishop if her understanding is correct.

[3:49:28 PM](#)

CO-CHAIR BISHOP shared his understanding that this is correct.

[3:49:42 PM](#)

SENATOR KAUFMAN said that he is glad SJR 19 is being considered.

[3:49:57 PM](#)

CO-CHAIR GIESSEL thanked Senator Dunbar for proposing to hold Russia accountable.

[3:50:19 PM](#)

CO-CHAIR GIESSEL opened public testimony on SJR 19; finding none, she closed public testimony.

[3:50:37 PM](#)

CO-CHAIR GIESSEL solicited the will of the committee.

[3:50:40 PM](#)

CO-CHAIR BISHOP moved to report CSSJR 19, work order 33-LS1498\S, from committee with individual recommendations and attached fiscal note(s).

[3:50:58 PM](#)

CO-CHAIR GIESSEL found no objection and CSSJR 19(RES) was reported from the Senate Resources Standing Committee.

[3:51:03 PM](#)

At ease

PRESENTATION(S) : DEPARTMENT OF NATURAL RESOURCES
NEXT GENERATION MINERAL ASSESSMENT IN ALASKA

[3:53:00 PM](#)

CO-CHAIR GIESSEL reconvened the meeting and announced a presentation titled "Next Generation Mineral Assessment in Alaska" delivered by Melanie Werdon and John Crowther from the Department of Natural Resources (DNR).

[3:53:45 PM](#)

MELANIE WERDON, Director, Division of Geological and Geophysical Surveys, Department of Natural Resources (DNR), Fairbanks, Alaska, co-presented the presentation on Next Generation Mineral Assessment in Alaska.

[3:54:10 PM](#)

MS. WERDON advanced to slide 2 and discussed different mineral systems:

[Original punctuation provided.]

Goal: Exploring Alaska's Mineral Belts

"Mineral systems":

- Define favorable geologic belts for investigation
- Predict likely critical mineral co-products

Example:

- Porphyry Cu-Mo-Au: Copper, molybdenum, gold, silver, lead, iron, zinc, tin, tungsten, platinum-group, tellurium, arsenic, bismuth, cobalt, gallium, germanium, indium, antimony

MS. WERDON briefly explained how mineral belts are formed. She noted that many mineral belts are on state land, and many include operating mines or major discoveries. She stated that the Division of Geological and Geophysical Surveys (DGGs) is targeting these areas for data collection.

[3:55:12 PM](#)

MS. WERDON advanced to slide 3 and discussed industry expenditures and production value. She stated that from 2018-2023, Alaska's mineral exploration expenditures were \$1.23 billion. During this same timeframe, mineral development expenditures were \$2.16 billion, and total mineral production value was \$18.36 billion. She noted that this is a large sector in Alaska's economy and explained that this presentation considers how the Department of Natural Resources (DNR) can facilitate future mineral exploration, which would help the industry make new discoveries and help discoveries advance up the pyramid (illustrated on slide 3) to become mines.

[3:56:13 PM](#)

MS. WERDON advanced to slide 4 and discussed modern prospecting:

[Original punctuation provided.]

Modern Prospecting is Data-Driven

Generalized Process:

- Compile all available geoscience data
- Process the data
- Apply Artificial Intelligence (AI) & Machine Learning techniques
- Make sure AI results make sense
- Use prospectivity map to locate & field-test targets

MS. WERDON explained that fieldwork is expensive and this is a more cost-effective approach to exploration.

[3:57:13 PM](#)

MS. WERDON advanced to slide 5 and discussed the technology-driven exploration future:

[Original punctuation provided.]

Technology-Driven Exploration Future

- Alaska is set up to gain major long-term benefits from next-generation data gathering about our mineral potential
- The more data we provide, the more exploration and potentially development we can expect
- **New technology** - hyperspectral scanners, airborne geophysics, handheld XRF chemistry, data bandwidth/storing capacity, and processing techniques/Artificial Intelligence (AI)
- **New demand** - boom for mineral commodities as energy demand for renewables grows, world economy expands, and energy markets evolve
- **New support** - federal programs have significantly expanded, with Alaska as a key target

MS. WERDON said that exploration is driven by many factors; however, those listed here have a high level of impact.

[3:58:59 PM](#)

CO-CHAIR GIESSEL asked if any of these technologies are used to better identify natural gas deposits.

[3:59:18 PM](#)

MS. WERDON replied yes. She said that it is not only the mineral industry applying these techniques - they are also used in the energy industry, specifically in the North Slope. She added that this could also be applied to Cook Inlet.

[3:59:42 PM](#)

MS. WERDON advanced to slide 6 and explained hyperspectral scanning technology:

[Original punctuation provided.]

New Technology: Hyperspectral Scanning

- Arrives at Geologic Materials Center - spring 2025
- Digitally preserve 500,000 feet of legacy core; generate massive amounts of spectral data
- Leverage \$50 billion in energy and mineral exploration samples to facilitate new discoveries
- Build machine-learning datasets
- Provide global research access online

MS. WERDON said that the custom designed hyperspectral core scanner was recently purchased. She noted that there are few of these in the world and Alaska hopes to lead the technology advantage.

[4:00:53 PM](#)

CO-CHAIR BISHOP asked for clarification of the third point on slide 6. He questioned whether the state currently has \$50 billion worth of core samples in the core shack.

[4:01:13 PM](#)

MS. WERDON replied that the core shack currently has roughly half a million feet of materials. She explained that, if DNR were to gather these core samples today, the current market value of the resulting samples would be \$50 billion.

CO-CHAIR BISHOP said that he wanted the record to reflect the value of the materials currently in the core shack.

[4:01:56 PM](#)

CO-CHAIR GIESSEL clarified that the building he is referring to is the Geologic Materials Center (GMC).

[4:02:03 PM](#)

JOHN CROWTHER, Deputy Commissioner, Department of Natural Resources (DNR), Anchorage, Alaska, said that \$50 billion is a conservative estimate. He explained that some of the wells were drilled long ago and were drilled in the \$10 millions or \$100 millions (at the time of drilling). He stated that some of these can never be recovered, and this technology allows for the preservation and/or expansion of the data provided by these samples.

[4:02:34 PM](#)

MS. WERDON advanced to slide 7 and explained core scanning technology:

[Original punctuation provided.]

New Technology: Core Scanning

Hyperspectral scanning provides:

- Cheaper, faster mineral identification
- Scalable geologic models
- 3D mappable alteration halos
- Superior pointers to mineralization
- Improved reservoir-quality datasets
- New data to help industry (oil & gas, CCUS, geothermal, mineral, etc.)

MS. WERDON noted that the figure on the right (Umiat 18 hydrocarbon signature (in blue)) shows the first test scan from the Umiat well on the North Slope. She contrasted the new technology with identification that is done by hand and emphasized that the former is more efficient and cost-effective. She described "alteration signatures" and how they change.

[4:04:15 PM](#)

MS. WERDON advanced to slide 8 and explained airborne-geophysics technology:

[Original punctuation provided.]

New Technology: Airborne-Geophysics

Gamma-ray spectrometry (radiometrics) – maps trace uranium, thorium, and potassium; helps find favorable plutons and rare earths

Gravimetry – maps slight variations in earth's gravity, shows faults, basins, and high-density orebodies

Electromagnetics – maps conductive geology in 3D, including graphite, massive sulfide ores, geothermal reservoirs, and permafrost hazards

MS. WERDON explained that a gravity survey maps survey maps slight variations in earth's gravity.

[4:05:24 PM](#)

MS. WERDON advanced to slide 9 and explained new technology in the geochemistry realm:

[Original punctuation provided.]

New Technology: Geochemical Re-analysis

- New anomalies can be found by re-analyzing historical samples with modern analytical methods
- Older data is missing some elements of interest
- Next focus: SW Alaska & Seward Peninsula
- Goal: complete re-analysis in Alaska's critical mineral belts (red outlines) in 10 years

[4:06:28 PM](#)

CO-CHAIR GIESSEL noted that these are historical core samples and inquired about the likelihood that some deposits have moved due to seismic events.

[4:06:49 PM](#)

MS. WERDON replied that when the Denali Fault moved, DNR flew over the fault and took measurements. She shared her recollection that there was a 30 ft offset at one of the largest offset points. She confirmed that deposits can shift over time due to these types of fault motions. However, she explained that the timeframe from collection to reanalysis for DNR's samples has not been impacted by fault movement.

[4:07:57 PM](#)

MR. CROWTHER added that these new technologies allow for a synthesis of the data. He explained that a variety of data sets can show different types of responses over geologic time. This allows for the collection of massive amounts of data that can be used to understand trend changes over time.

[4:08:54 PM](#)

SENATOR DUNBAR asked about partnerships with federal agencies. He commented that mineral belts could potentially be found on federal or private land. He asked if this program is being used for state and private land and if there is a way to share the cost with private landowners.

[4:10:03 PM](#)

MS. WERDON replied that the Earth Mapping Resources Initiative (EMRI) is for any land open to mineral entry (regardless of landownership) that provides funding for this purpose. She added that any state funding allocated to DNR is used for state land. She said that partnerships are common and help DNR perform these surveys. She noted that these partnerships benefit all involved.

If partners would like additional survey work done on their land, DNR requires that the additional information be made available to the public. She explained that the industry keeps the majority of its data private and making this information public (when done in partnership with the state) increases the overall understanding of mineral resources in the state.

[4:11:51 PM](#)

MR. CROWTHER added that DNR is cognizant of the status of land that is assessed. He reiterated that land available for mineral entry is of primary focus - which generally does not apply to federal lands. He explained that this is an applied exploration to maximize development and increase the understanding of resources within the state.

[4:12:32 PM](#)

MS. WERDON advanced to slide 10 and discussed new demand and future forecasts of metals. She explained that the figure on the left shows a forecasted increasing demand for energy transition metals, while the figure on the right shows conventional metals. Each is projected to 2050. She stated that all metal needs trends increase.

[4:13:15 PM](#)

MS. WERDON advanced to slide 11 and gave an overview of the Earth Mapping Resources Initiative program:

New Support: Earth MRI program

Earth Mapping Resources Initiative

- USGS geologic framework mapping program focused on critical minerals
- Federal-State partnership between geological surveys
- Three main components:
 - Geophysical surveys (multiple types)
 - Geologic mapping
 - Geochemical mapping
- "Mineral systems" approach:
 - Survey broad areas where the geology is favorable for new discoveries
 - Critical minerals often occur in the same systems as conventional minerals—therefore, need to understand the entire system

[4:14:15 PM](#)

MS. WERDON advanced to slide 12 and discussed how this new support has led to an expanded footprint:

[Original punctuation provided.]

New Support: Major Expanded Footprint

- DGGs has a long-running program to survey Alaska's mineral belts
- Earth MRI has immensely increased the rate and quality of surveying dramatically

MS. WERDON referred to a map and bar graph on slide 12 and noted that Earth MRI has resulted in drastic increases in survey quality and rate within a few short years (DNR began utilizing this program in 2020). She added that the bipartisan infrastructure law gave a 5-year boost to the Earth MRI program. She explained that this increased the rate at which DNR can provide valuable data layers for Alaska's mineral belts.

[4:15:06 PM](#)

MS. WERDON advanced to slide 13 and explained DNR's survey of the Kuskokwim Mineral Belt:

[Original punctuation provided.]

Targets: Kuskokwim Mineral Belt

- Starting Year 2 of 3-year plan to finish Kuskokwim Mineral Belt focus area
- Region includes major deposits of critical and conventional minerals
 - Donlin Gold project
 - Nixon Fork mine
 - Illinois Creek project
- High interest & exploration potential in this region

MS. WERDON said that the Kuskokwim mineral belt has a high potential for gold and critical minerals.

[4:15:57 PM](#)

SENATOR CLAMAN asked if the Kuskokwim mineral belt is easily identifiable on the map on slide 12.

[4:16:14 PM](#)

MS. WERDON identified the locations of the Kuskokwim Belt and the Yukon-Tanana Uplands on the map on slide 12.

[4:16:46 PM](#)

MS. WERDON advanced to slide 14 and discussed the 2023 Kuskokwim Magnetic Survey:

[Original punctuation provided.]

Targets: 2023 Kuskokwim Magnetic Survey

New aeromagnetic data from our 2023 survey

- Data show two suites of plutons:
 - Magnetic highs: plutons associated with gold and copper prospects (dashed outlines)
 - Magnetic lows: plutons associated with tin-silver prospects (dotted outlines)
- New exploration plays are clearly highlighted by the data - we expect staking and investment to follow

[4:17:49 PM](#)

CO-CHAIR GIESSEL asked how the data was collected.

[4:17:55 PM](#)

MS. WERDON briefly explained that the figure on slide 13 was created using a magnetometer aboard on a fixed-wing aircraft (or a helicopter for mountainous regions). She said that the magnetometer collects 40 data points per second and layers the data collected over time. The image on slide 13 was created using data collected over several months.

[4:18:41 PM](#)

MR. CROWTHER commented that the level of data gathering this image represents is inconceivable to those working in previous eras. He said that this is the equivalent of a lifetime or more of work that can now be done over a season or two. He added that prospectors from around the world can consider this data and apply different perspectives. He commented that this is a paradigm shift in the scope and scale of the available data.

[4:19:26 PM](#)

SENATOR CLAMAN shared that around 40 years ago he worked a grid, gathering data using a magnetometer. He said that he marked data points every 50 feet and asked if DGGs is essentially using the same method, but from an airplane and with more frequent data points.

[4:20:14 PM](#)

MS. WERDON replied yes. She explained that when DGGs began using airplanes, the mapped location was visually estimated; current methods use the global positioning system (GPS) and radar, mapped in three dimensions. She reiterated that the magnetometer is taking 40 readings per second.

[4:20:49 PM](#)

SENATOR CLAMAN commented on the contrast between data collection from work done on foot, manually placing the magnetometer and taking readings every 50 feet, to the current method which provides a continual reading.

[4:21:18 PM](#)

MS. WERDON advanced to slide 15 and spoke to geological mapping over the Yukon-Tanana Upland:

[Original punctuation provided.]

Targets: Yukon-Tanana Upland

- Currently mapping Alaska's most active mineral belt – the Yukon-Tanana Upland – four operating lode mines & numerous placer mines; many exploration projects
- Enhanced funding allows mapping of entire mineral belts simultaneously
- Technology advances in geochemistry and airborne geophysics allow geologists to geologically map Alaska's mineral belts better than before

[4:22:08 PM](#)

MS. WERDON advanced to slide 16 and discussed advancements in geological mapping. She directed attention to the figure on the lefthand side of slide 16 and noted that this was made in the 1960s. She explained that this figure is full of question marks and many places were not visited. She contrasted this with the figure on the righthand side of the slide, which is a sample of DGGs's new, more detailed geologic mapping. She stated that this map was informed by the geophysical interpretations. She pointed out that this map uncovered many new faults, and offered improved characterization of geologic units - which helps to understand the area's mineral potential. She noted that this map suggests new types of mineral deposits based on the geology of the location. She emphasized the importance of the new technology in making these discoveries.

[4:22:53 PM](#)

MS. WERDON advanced to slide 17 and spoke to results of DGGs' geophysical surveys and mapping:

[Original punctuation provided.]

Results: New Claims, Revenue, and Activity

- DGGs' geophysical surveys and geologic mapping helped drive industry exploration interest and success in the Bonnifield District near Healy
- International investment, drilling, new discoveries

MS. WERDON said that the map on slide 17 charts each data release and noted that the number of claims increased.

[4:23:45 PM](#)

MS. WERDON advanced to slide 18 and offered the following summary:

[Original punctuation provided.]

Conclusions

- All jurisdictions that want to be globally competitive in attracting industry investment provide regional-scale geoscience datasets
- New datasets mean new opportunities for industry to identify exploration targets in Alaska, utilizing modern tools such as Artificial Intelligence
- Providing more datasets increases Alaska's worldwide favorability ranking and builds our reputation - we fortunately enjoy very favorable rankings in the industry standard Fraser Institute Survey, and more data will help us maintain and increase our ranking

[4:24:34 PM](#)

SENATOR KAUFMAN asked if the data is continuously corrected to account for relative distance to the ground.

[4:25:18 PM](#)

MS. WERDON replied yes. She shared her understanding of this process and the tools used. She emphasized that it is important to maintain a constant elevation above the topography, as this ensures that the instrument-to-ground distance remains the same. She noted that it is possible to correct this; however, the initial process is optimized.

[4:26:07 PM](#)

SENATOR KAUFMAN commented on the potential to tighten up the data even further.

[4:26:29 PM](#)

SENATOR WIELECHOWSKI asked how much is spent annually to obtain this information. He also asked what lands are chosen to survey - specifically whether it is leased or unleased - and how the information is released. He questioned whether a fee is charged for the information or whether it is in the public domain.

[4:26:57 PM](#)

MS. WERDON said the information is free and can be downloaded from the website. She asked him to repeat the last two questions.

SENATOR WIELECHOWSKI asked how much is spent annually to gather the data. He also asked how the surveyed land is chosen - and whether it is existing leased area or any prospective areas.

MS. WERDON answered that they are flying the mineral belts and restricting the surveys to land that is open to mineral entry. She said that there are a couple of areas in the state with mineral leases; however, this is generally on a claim-staking basis. She briefly described the claim-staking process. With respect to annual costs, she said that DGGS's annual funding has increased dramatically due to Earth Mapping Resources Initiative Program. She recollected that, for the previous year, the federal funding for this program was \$5.825 million and the state match was roughly \$2.75 million.

[4:28:45 PM](#)

SENATOR WIELECHOWSKI asked for clarification as to whether DGGS is surveying land that is already staked or that has been leased out to be mined.

[4:28:57 PM](#)

MS. WERDON clarified that the survey is continuous across the area, which ensures a clean image and provides a continuous data set (without holes). As a result, some of the land surveyed is

already staked. In this case, DGGs reaches out to whoever has the claim to see if they would like to participate in the survey.

[4:29:36 PM](#)

SENATOR WIELECHOWSKI asked if it is typical for this information to remain free and if there is recoupment in instances where companies use this free information and find a large amount of minerals.

[4:29:52 PM](#)

MS. WERDON replied that, to her knowledge, this information is typically given for free, because it entices industry into the state. She added that there are studies in Australia and Canada demonstrating high returns on the initial investment. She stated that this is a way to attract industry jobs, exploration, and claim-staking - and this is where the return on investment can be found.

[4:30:37 PM](#)

SENATOR DUNBAR asked for clarification on the two countries mentioned.

[4:30:46 PM](#)

MS. WERDON replied that [Australia and Canada] are the most parallel jurisdictions that DGGs strives to emulate insofar as the practices used are beneficial for Alaska.

[4:31:32 PM](#)

SENATOR DUNBAR commented that this is referring to the return on investment. He asked what the revenue structures are in [Australia and Canada]. He questioned whether they have a sales tax or an income tax - or other ways to capture revenue. He questioned whether Alaska is capturing revenue in the same (or similar) ways. He surmised that the calculations from these countries include a way to capture revenue.

[4:32:02 PM](#)

MS. WERDON replied that this is beyond her scope of knowledge. She stated that the Division of Mining, Land and Water (DMLW) deals with the revenue component of the mineral industry, while DGGs works to generate the data that attracts industry to the state.

[4:32:30 PM](#)

MR. CROWTHER added that DGGGS could create a summary and provide this to the committee at a later time; however, he emphasized that this is not an area of DGGGS expertise.

[4:32:45 PM](#)

SENATOR DUNBAR opined that it is an interesting way to look at the calculation. He noted that there are several factors that may be different in Alaska - e.g. many of the largest companies in the industry are not based in Alaska, which may not be the case in Australia. Therefore, those profits do not stay in Alaska - while they might remain in Australia. He expressed a desire to see some analysis of this issue and reiterated his belief that the economics do not work the same way in Alaska as they do in Canada and Australia.

[4:33:48 PM](#)

CO-CHAIR GIESSEL inquired about the investment in the people of Alaska. She briefly discussed Alaska Resource Education (ARE), a non-profit that educates students about opportunities in the resource industry. She pointed out that ARE has programming that is specifically geared toward encouraging young women to join the resource industry in Alaska. She shared her belief that most high school students would be interested in the technology used to survey. She asked whether DGGGS reaches out to young people in Alaska and emphasized that many young people are leaving the state and not returning. She opined that DGGGS could offer a tremendous opportunity that would excite young people.

[4:35:00 PM](#)

MS. WERDON replied yes and explained that DGGGS visits schools when there are opportunities to do so. She stated that there is a worldwide shortage of geophysicists and encouraged everyone to study physics and math. She said that, in some instances, DGGGS has trained people in order to meet the needs of the state.

[4:35:59 PM](#)

CO-CHAIR GIESSEL commented that as people reach retirement age, a wealth of information is lost, and it is important that young people be able to fill these gaps. She said that this is an investment and return that is not monetary. She expressed appreciation for DGGGS speaking to young people and for the presentation. She expressed hope that this information is shared with high schools.

[4:37:07 PM](#)

MR. CROWTHER noted that Ms. Werdon has advertised DGGS employment opportunities across the US. He encouraged those who are interested to contact DGGS.

[4:37:51 PM](#)

MS. WERDON shared that she recently contacted every geophysics professor in the US and Canada seeking a geophysicist.

[4:38:01 PM](#)

CO-CHAIR GIESSEL asked if she was successful in finding a geophysicist.

MS. WERDON replied that she was able to find a geophysicist through different means.

[4:38:50 PM](#)

There being no further business to come before the committee, Co-Chair Giessel adjourned the Senate Resources Standing Committee meeting at 4:38 p.m.