

**ISSUEDALASKA STATE LEGISLATURE
HOUSE RESOURCES STANDING COMMITTEE**

April 1, 2019

1:03 p.m.

MEMBERS PRESENT

Representative Geran Tarr, Co-Chair
Representative Grier Hopkins, Vice Chair
Representative Sara Hannan
Representative Ivy Spohnholz
Representative Chris Tuck
Representative Dave Talerico
Representative George Rauscher
Representative Sara Rasmussen

MEMBERS ABSENT

Representative John Lincoln, Co-Chair

OTHER LEGISLATORS PRESENT

Representative Dan Ortiz

COMMITTEE CALENDAR

HOUSE JOINT RESOLUTION NO. 10

Supporting development of the road belt electrical transmission line;
and urging members of the Alaska delegation in Congress to pursue the
development of this high-voltage electrical line in the interior of
the state.

- MOVED CSHJR 10(RES) OUT OF COMMITTEE

PRESENTATION(S): PEBBLE PROJECT STATUS AND UPDATE

- HEARD

PREVIOUS COMMITTEE ACTION

BILL: HJR 10

SHORT TITLE: SUPPORTING ROAD BELT ELECTRICAL LINE

SPONSOR(S): REPRESENTATIVE(S) TALERICO

03/04/19	(H)	READ THE FIRST TIME - REFERRALS
03/04/19	(H)	ENE, RES
03/14/19	(H)	ENE AT 10:15 AM CAPITOL 17
03/14/19	(H)	Moved CSHJR 10(ENE) Out of Committee
03/14/19	(H)	MINUTE(ENE)
03/15/19	(H)	ENE RPT CS(ENE) 4DP 2NR
03/15/19	(H)	DP: RAUSCHER, PRUITT, FIELDS, SPOHNHOLZ
03/15/19	(H)	NR: ZULKOSKY, HOPKINS

03/29/19 (H) RES AT 1:00 PM BARNES 124
03/29/19 (H) Heard & Held
03/29/19 (H) MINUTE (RES)
04/01/19 (H) RES AT 1:00 PM BARNES 124

WITNESS REGISTER

GAYLA HOSETH, Second Chief
Curyung Tribal Council; Director
Natural Resources
Bristol Bay Native Association
Dillingham, Alaska

POSITION STATEMENT: Testified during the Pebble Project status and update presentation and answered questions.

NORM VAN VACTOR, President/CEO
Bristol Bay Economic Development Corporation
Dillingham, Alaska

POSITION STATEMENT: Testified during the Pebble Project status and update presentation and answered questions.

JASON METROKIN, President/CEO
Bristol Bay Native Corporation
Anchorage, Alaska

POSITION STATEMENT: Answered questions during the Pebble Project status and update presentation.

DANIEL SCHINDLER, PhD
School of Aquatic and Fishery Sciences
University of Washington
Seattle, Washington

POSITION STATEMENT: Provided a PowerPoint presentation entitled, "Bristol Bay fisheries and water quality: does the Pebble DEIS adequately assess risks?", during the Pebble Project status and update presentation, and answered questions.

CAMERON WOBUS, PhD
Senior Scientist
Lynker
Boulder, Colorado

POSITION STATEMENT: Provided a PowerPoint presentation entitled, "Risks and Impacts from a Tailings Dam Failure at the Proposed Pebble Mine," dated 4/1/19, during the Pebble Project status and update presentation, and answered questions.

RICK HALFORD, Consultant
Bristol Bay Coalition
Eagle River, Alaska

POSITION STATEMENT: Testified in opposition during the Pebble Project status and update presentation and answered a question.

ACTION NARRATIVE

[1:03:59 PM](#)

CO-CHAIR GERAN TARR called the House Resources Standing Committee meeting to order at 1:03 p.m. Representatives Tuck, Hannan, Talerico, Spohnholz, and Tarr were present at the call to order. Representatives Hopkins, Rasmussen, and Rauscher arrived as the meeting was in progress. Representative Ortiz was also in attendance.

HJR 10-SUPPORTING ROAD BELT ELECTRICAL LINE

[1:05:20 PM](#)

CO-CHAIR TARR announced that the first order of business would be HOUSE JOINT RESOLUTION NO. 10, Supporting development of the road belt electrical transmission line; and urging members of the Alaska delegation in Congress to pursue the development of this high-voltage electrical line in the interior of the state.

[Before the committee was CSHJR 10(ENE), reported out of the House Special Committee on Energy on 3/15/19.]

[1:06:05 PM](#)

CO-CHAIR TARR moved to adopt Amendment 1, labeled 31-LS0596\U.1, Fisher, 3/19/19.

Page 2, following line 15:

Insert new material to read:

"**WHEREAS** development of the road belt electrical transmission line would benefit the agricultural industry in the Delta Junction area by allowing the industry to become more cost effective and competitive and by increasing the industry's ability to expand; and"

Page 2, line 28, following "Interior,":

Insert "the Honorable Sonny Perdue, United States Secretary of Agriculture;"

REPRESENTATIVE RAUSCHER objected for discussion purposes.

CO-CHAIR TARR explained Amendment 1 relates to the agricultural opportunities that could be expanded by the intertie project within CSHJR 10(ENE). She said the amendment is supported by the bill sponsor.

[1:06:44 PM](#)

REPRESENTATIVE RAUSCHER removed his objection. There being no further objection, Amendment 1 was adopted.

REPRESENTATIVE TALERICO expressed appreciation for the committee's consideration of the bill.

[1:07:33 PM](#)

REPRESENTATIVE HOPKINS moved to report CSHJR 10(ENE), labeled 31-LS0596\U, as amended, out of committee with individual recommendations and the accompanying fiscal notes. There being no further objection, CSHJR 10(RES) was reported out of the House Resources Standing Committee.

[1:08:09 PM](#)

The committee took an at-ease from 1:08 p.m. to 1:10 p.m.

PRESENTATION(S): PEBBLE PROJECT STATUS AND UPDATE

[1:10:35 PM](#)

CO-CHAIR TARR announced the final order of business would be presentations related to the Pebble Project status and update.

[1:12:25 PM](#)

GAYLA HOSETH, Second Chief, Curyung Tribal Council and Director, Natural Resources, Bristol Bay Native Association (BBNA), paraphrased from the following written statement [original punctuation provided]:

Good morning, my name is Gayla Hoseth, I am the 2nd Chief of Curyung Tribal Council and the Director of Natural Resources for Bristol Bay Native Association in Dillingham, AK.

My colleagues and I have travelled from our homes in Bristol Bay and beyond because Bristol Bay's communities, businesses, culture, and subsistence way of life are under looming threat from the irresponsible and unacceptable Pebble Mine project. Not only is Bristol Bay my home that sustains our regions subsistence way of life, but it's the state's largest and most valuable salmon fishing industry for commercial and sport fishers. We are here today because the US Federal government is pushing this project forward with an inadequate Draft EIS that's based on a false mine plan, an incomplete permit application, and a politically driven timeline that is silencing the voices and concerns of Alaskans.

The Environmental Impact Statement produced by the Army Corps of Engineers for Pebble utterly fails the people of Bristol Bay and all Alaskans. In the EIS, the Corps blatantly ignores well-documented science, potentially catastrophic risks, and the health and well-being of our

people. Since Day 1, the Army Corps has made it clear that they fully intend to push forward a mine that Alaskans have said time and time again we don't want. They are more interested in doing favors for the Pebble Partnership than ground-truthing Pebble's false claims and incomplete data. That's NOT how our permitting process should work.

Most importantly we are here today to urge our state and national elected-officials - who were elected by Alaskans - to represent Alaskans, not Outside corporations that want to make every dime that they can from our resources. We need Senator Lisa Murkowski, Senator Dan Sullivan, Congressman Don Young and Governor Mike Dunleavy to stand up and do what is best for the people who elected them.

To my fellow Alaskans, please don't be fooled by Pebble's shiny marketing and promises of jobs and a "smaller" fish-friendly mine. Their lies are based on profit and will be at the expense of you, your family, and our state's future. The draft EIS, even in its current state, makes it crystal clear that the massive, phase-one Pebble mine, and expansion and additional mines that would follow, would cause wide-spread, irreversible harm to the health of our people, our pristine waters, our renewable natural resources, and the communities and businesses of Bristol Bay. As an example of the attitude the dEIS approaches us with is consider how they discuss local spills. In the dEIS chapter 4-27 page 110, the spill risk chapter, local spills are described as local job opportunities to clean up their messes. This is an absolute slap in the face.

We must protect Bristol Bay now more than ever for this generation and most importantly for the future generations to come. There is no other place in the world like Bristol Bay and let me remind everyone again - Bristol Bay is the home of the World's Last Largest Wild Sockeye Salmon Run! Let's not make the same mistakes in other places of the world and say NO Pebble mine - NO Action Alternative.

Thank you.

[1:16:30 PM](#)

REPRESENTATIVE HOPKINS asked whether Ms. Hoseth is aware of written support for the Pebble project from local villages or governments in the region.

MS. HOSETH said BBNA has issued a resolution in opposition to the project.

REPRESENTATIVE HOPKINS restated his question.

MS. HOSETH said there are some in favor of the project.

[1:17:38 PM](#)

NORM VAN VACTOR, President/CEO, Bristol Bay Economic Development Corporation (BBEDC), paraphrased from the following written statement [original punctuation provided]:

Co-Chair Lincoln, Co-Chair Tarr, House Resources Committee and Staff. Thank you for the opportunity to be here this afternoon and to testify on what I feel is one of the most important issues if the the most important issue of my life time and career. Sad to say but this single issue has been driving and burning within me for the last 18 years. And sadly it's no April Fool's Joke! My name is Norman Van Vactor and I live in Bristol Bay. I am the CEO of Bristol Bay Economic Development Corporation which is wholly owned and operated by 17 Coastal Communities from the region and we have our corporate offices in Dillingham Alaska. Bristol Bay means business. We are a major cornerstone of Alaska's seafood industry.

- At a time when many salmon populations around Alaska are experiencing record-low returns, Bristol Bay remains the exception with record-high returns. One could say we are buoying the entire Alaska seafood industry right now.

- Bristol Bay is an economic engine .

48 percent of Alaska's total salmon ex-vessel value in 2018

43M fish harvested in Bristol Bay in 2018; 38 percent of Alaska's total number of salmon harvested

Directly employs 14,765 people Generates \$658 Million in total labor income/year Regional subsistence fisheries provide 99 lbs. of salmon per capita;without that renewable "free" protein, many people who call Bristol Bay would be hard pressed to afford alternative protein. Subsistence foods are core to so many.The Fishery on average generates \$14.7 M in revenue for local government entities (2013-17); it more than pays for itself when it comes to management expenses

- Bristol Bay's salmon fishery is still thriving after 135 years; and will continue to do so if we make sure the fish have what they need to survive: access to healthy habitat, clean, free-flowing water. We have seen in Lower 48 and around the world what happens when salmon don't have those things...Alaska has the advantage of learning from history. We can't pretend that we don't know any better.

- Bristol Bay's salmon fishery is such a success because it's managed by SCIENCE and rigorous regulations. Science drives the decision-making, not industry speculation, fantasies, or good intentions. Why are we not approaching our mineral development the same way? Alaska should be

upholding strong standards and science-based permitting in ALL industries, not just some.

- If Pebble goes in, the Bristol Bay Sockeye brand and the entire Alaska Seafood brand will be tarnished. The State of Alaska has invested \$ Millions into building these brands and establishing Alaska as a premium brand in the marketplace. That brand is based on pristine habitat, sustainability, and high quality - not open-pit mining districts and acid mine drainage. The Pebble Partnership hasn't proven that their mine pencils out on paper - and can't because it doesn't.

[1:22:24 PM](#)

MR. VAN VACTOR continued:

- Pebble has failed to provide an economic feasibility analysis to support its proposed 20 year mine plan. It is common industry practice for a mining company to first produce a pre-feasibility study to analyze the economic viability of the proposed project. The Pebble Proposal is the only large mine proposal in Alaska in the last 20 years not to have a pre-feasibility study.

- The pre-feasibility study serves dual purposes. First, it is used to help the company and investors understand whether the project is financially viable and to comply with financial auditing requirements of the Canadian and US stock exchanges. It also helps define the scope of a "realistic" mine project to inform the NEPA process and the environmental impacts analysis.

- We don't even know if Pebble is financially feasible, and yet we are spending precious state dollars and resources reviewing a plan that doesn't pencil out.

- Neither the DEIS nor Pebble have proven that this project is financially feasible and when asked about financial feasibility they refuse to answer questions or provide information. And yet, they want us to risk a renewable economic engine that employs thousands of Alaskans and generates hundreds of millions in annual income every year?

- Financial feasibility is important because it gives a realistic scope of the project. This is what should drive any analysis of impacts, risk avoidance and mitigation.

- There is no closure and mitigation plan in the Army Corps' DEIS. Why? Because Pebble knows this small mine is not feasible and they don't plan to close the mine after 20 years. Why would they? If Pebble closed down after 20 years they would leave 88 percent of the ore body in the ground. They need the open pit to expand to the underground mining option.

- The lack of financial information compromises the value of any environmental impact analysis and calls into question the validity of the process.
- Richard Borden a very senior Former Rio Tinto executive has recently expressed serious concerns about The Pebble Partnerships claims. As noted in a letter he prepared on March 28, 2019, and I quote "...the technical rigor of the EIS process may be compromised if no cost data are available to help select the "least environmentally damaging practicable alternative."
- Mr. Borden's economic assessment shows a likely "\$3 billion dollar loss" given the economic realities of the 20 year mine plan.
- As noted by Mr. Borden, "[i]f the base case mine plan assumed for the EIS is not economic, then the entire permitting process risks being compromised because the impacts and risks being evaluated are much smaller than those required for a full-scale economically viable project. In other words, the EIS is not evaluating the "least environmentally damaging practicable alternative." This is the standard required under the Clean Water Act.
- He went on to say, "[t]o help ensure the integrity of the EIS process, and in fairness to local communities, the State of Alaska and to shareholders, I believe the Pebble Partnership is obligated to publicly release a new preliminary economic assessment for the proposed smaller and lower-grade mine that the Army Corps of Engineers is currently reviewing..." [SEE RICHARD BORDEN LETTER, MARCH 28, 2019](#) A permitting process is only so good as the public's confidence in the process.
- BBEDC has no confidence in the Army Corps conducting a rigorous, science-based process for the Pebble Mine. We have not seen anything from them that gives us confidence that they are looking out for what's best for Bristol Bay's salmon and the people and businesses that depend on them.
- We have one shot to do this permitting process right. To allow Pebble to drive this permitting process makes no sense and defeats the purpose of a permitting process in the first place. This process should be testing Pebble's assumptions and promises, not taking Pebble at its word.
- What's the message that we want to send to the rest of the country and world?... That we are a boom and bust state willing to sacrifice our children's future so that a few mining executives can make a few bucks? Or that we are a free-thinking, resilient state that is committed to protecting what we value and doing things better? All of you here will determine the answer to that question... Bristol Bay supports the greatest wild salmon fishery left on earth and impacts thousands of Alaskans. As such it deserves a rigorous permitting process with adequate opportunities for the public/Alaskans to weigh in. This

permitting process is happening under your watch... it's your job (yes our job) to ensure that our state is not cheated by phony mine and a corrupt permitting process.

MR. VAN VACTOR added BBEDC represents 17 coastal communities located within 50 nautical miles of the shoreline, all of which oppose the project.

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REPRESENTATIVE RASMUSSEN related she has constituents who have migrated to her district from the Bristol Bay area because of closing schools and a lack of opportunities. She questioned whether infrastructure provided by the Pebble project would be a benefit to the region.

MR. VAN VACTOR explained migration is attributed to many reasons: youth are attracted by movies and malls; however, if given the opportunity to explore, many return home or are successful elsewhere. The development phase of the project is short and would be built by a migrant workforce of technical and specialized individuals. He opined the concept that a significant portion of the workforce would be comprised of residents is unrealistic.

REPRESENTATIVE RASMUSSEN suggested the project could follow the success of the regional hire program at Red Dog mine.

MR. VAN VACTOR cautioned a comparison of Red Dog mine [with the Pebble project] is not a fair comparison due to the project's location and operations.

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REPRESENTATIVE RAUSCHER compared the price of Copper River salmon to that of Bristol Bay salmon and noted there is mining in the Copper River area.

MR. VAN VACTOR pointed out the scale of the mining in the Copper River basin and its proximity to the spawning beds cannot be compared to the proposed project. Bristol Bay seeks to increase the value of Bristol Bay salmon; historically, a high percentage of Bristol Bay salmon were canned for the market in Europe; now, most of the salmon are frozen, and the cost differential with Copper River salmon is closing.

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REPRESENTATIVE TUCK recalled conflicting testimony about whether an economic study is part of "a normal" environmental impact statement (EIS) process.

MR. VAN VACTOR explained for a project of this magnitude, one expects to see financial viability proposals and feasibility studies for the

benefit of stockholders and investors. Previous work on the project by Rio Tinto and other large-scale mining companies included financial feasibility studies; as a result, the previous participants decided the project was not financially viable. Although at this time, [financial] information is lacking, the project has released estimates of tax revenue that the project would generate.

REPRESENTATIVE HANNAN asked for BBEDC's membership.

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MR. VAN VACTOR said Togiak, Twin Hills, Manokotak, Aleknagik, Portage Creek, Clarks Point, Ekwok, Port Heiden, Pilot Point, Ugashik, South Naknek, Naknek, King Salmon, Levelock, and Ekuk.

[1:36:23 PM](#)

REPRESENTATIVE HANNAN asked how many Tribal members are enrolled in BBNA.

MS. HOSETH estimated 31-32 Tribes.

CO-CHAIR TARR recalled BBEDC seeks to return [commercial fishing] permits back to ownership by local residents.

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MR. VAN VACTOR acknowledged a major issue in the region is the loss of permits; in fact, BBEDC has a grant program with the goal to repatriate ownership of Alaska fishing permits to residents of Bristol Bay and the state. However, BBEDC, due to present time and budget constraints, has set aside this goal.

MS. HOSETH addressed the issue of outward migration. She expressed her concern about closing schools and related a personal story of choosing to send her daughter to Anchorage for high school; although Bristol Bay residents enjoy living outdoors and a subsistence lifestyle, extracurricular school activities are important. She assured the committee residents of Bristol Bay always come home from urban areas in the summer for commercial fishing and subsistence hunting. Ms. Hoseth stressed the importance of protecting resources because our people live off the land.

REPRESENTATIVE RASMUSSEN asked how many Alaskans from the Bristol Bay region hold fishing permits.

MR. VAN VACTOR said between the gillnet fleet and the setnet fleet, approximately 45-46 percent of the active participants in the Bristol Bay salmon fishery are Alaska residents.

REPRESENTATIVE SPOHNHOLZ asked how the size of the Bristol Bay fishery compares to that of other fisheries in the state.

MR. VAN VACTOR said Copper River is smaller than any of the river systems that compose Bristol Bay.

REPRESENTATIVE SPOHNHOLZ discussed the statistics associated with the Bristol Bay fishery, noting the fishery supports 14,000 direct jobs as compared to 750 jobs generated by the proposed project.

REPRESENTATIVE TUCK posed questions related to access to affected Tribal lands, the ownership of affected lands, and subsurface mineral rights.

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JASON METROKIN, President/CEO, Bristol Bay Native Corporation (BBNC), advised BBNC owns approximately 3 million acres of subsurface estate throughout the region, in and around the mine site, and spread out along the river systems and lake areas. Around the proposed project, much of the land is owned by the state and most of the subsurface rights around the communities are owned by BBNC: the surface land is owned by the respective village corporations. Mr. Metrokin said there are five village corporations around the Lake Iliamna area that are nearby or adjacent to the proposed mine and its infrastructure.

REPRESENTATIVE TUCK asked if the new proposed 20-year [mine] plan would require partnerships with any of the five village corporations.

MR. METROKIN acknowledged surface and subsurface owners of the acreage would be impacted; he noted the proposed mine has several alternatives for a transportation system, most of which would cross surface estate land of the village corporations and subsurface land owned by BBNC. He expressed his understanding the primary and alternative transportation corridors would require the landowners to grant a right-of-way.

REPRESENTATIVE TUCK questioned whether the rights-of-way would be granted.

MR. METROKIN said BBNC is opposed to the project and would not grant the use of its Native subsurface land. In further response to Representative Tuck, he said the project and the U.S. Army Corps of Engineers (USACE) are aware of BBNC's refusal.

REPRESENTATIVE HANNAN asked for clarification of the impact of transportation corridors to subsurface land.

MR. METROKIN explained BBNC owns some surface acreage; if a permit is granted for a transportation corridor, BBNC believes it would be impossible to develop a transportation route without impacts to the subsurface estate.

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CO-CHAIR TARR referred to concerns about the new plan that has [ferries crossing Lake Iliamna] and trucks transporting ore, and their impact on local residents.

MR. VAN VACTOR pointed out the land transportation corridor entails hundreds of stream and river crossings. Many residents who live on Lake Iliamna have noted the size and magnitude of the lake and how the lake is significantly affected by wind and weather conditions.

MS. HOSETH added there are many fish, mammals, land animals, and birds that occupy the lake and the region who require clean water and air. In response to an earlier question, she said BBNA has 31 federally recognized Tribes in the Bristol Bay region.

[1:54:16 PM](#)

DANIEL SCHINDLER, PhD, School of Aquatic and Fishery Sciences, University of Washington (UW), provided a PowerPoint presentation entitled, "Bristol Bay fisheries and water quality: does the Pebble DEIS adequately assess risks?" Dr. Schindler informed the committee UW's Alaska Salmon Program was initiated in 1946 and participants in the program spend three to four months each year in the Bristol Bay watersheds and elsewhere in Western Alaska. The information presented is based upon over 70 years of study of Bristol Bay fish habitat. Slide 2 was an illustration of Bristol Bay sockeye salmon returns from 1963-2018; despite 125 years of intense commercial fishing, and thousands of years of subsistence harvest, present returns are the largest recorded and provide economic and cultural opportunities for the residents of the region. Dr. Schindler directed attention to the following six inadequacies of the draft environmental impact study (DEIS) [issued 2/20/19 by the U.S. Army Corps of Engineers (USACE) on the proposed Pebble Project] and cautioned Alaskans should be dismayed and outraged because the report is not credible science (slide 3):

- 1.) The timeframe is based on 70-75 years; however, acid mine drainage is composed of sulfuric acid and toxic metals that must be stored and contained for centuries, thus a risk analysis has to account for long-term potential risks of the mine beyond 20 to 70 years. Also, ecological risks take decades or longer to be revealed, therefore, the timeframe is too short and underestimates the indicators of risk (slide 4).
- 2.) The fish habitat assessments were based on two years of fish abundance in tributaries; as known by UW research, a two- to three-year timeframe is a poor indicator of a stream's long-term potential, and he provided two examples (slide 5).

[1:59:44 PM](#)

CO-CHAIR TARR asked how the impacts of different aspects of habitat, such as water quality, are assessed.

DR. SCHINDLER said some factors such as water temperature and flow are monitored; however, the fish count is primary.

REPRESENTATIVE RASMUSSEN referred to slide 5 and observed [salmon escapement] from Pick Creek appears fairly stable. She surmised 20 years is a reliable long-term indication.

DR. SCHINDLER agreed some streams are more stable and others are not; in fact, the research program seeks to understand the basis for variabilities, which is unknown. He explained early high numbers in Pick Creek were attributed to the natural dewatering of an upstream pond.

DR. SCHINDLER returned to the fish habitat assessments, noting Bristol Bay tributaries throughout the river networks may be more important in some years, thus he characterized salmon habitat in Bristol Bay as a portfolio of habitat, which stabilizes the aggregate. In addition, the fish are caught in the estuary, so it is hard to determine where in the watershed they were produced (slide 6). Slide 7 pictured an otolith, the ear stone of a fish, and he described how a sample of an otolith can be used to determine where a fish was born. Also pictured was a heat map of salmon production in tributaries of the Nushagak River in 2011. He compared slide 7 to slide 8, which pictured a heat map of salmon production in tributaries of the Nushagak River in 2014 and pointed out areas of highest production are a mosaic of habitat that constantly shift through time. Dr. Schindler said, "So, the Nushagak River operates at a large spatial scale; the individual tributaries contribute to the long-term stability of it."

[2:05:26 PM](#)

REPRESENTATIVE HANNAN asked Dr. Schindler to describe the lifecycle of Chinook and sockeye salmon in freshwater.

DR. SCHINDLER said both king (Chinook) and sockeye salmon return to spawn in midsummer to late summer; in August or September, eggs are deposited in gravel and fry emerge into the stream in May. Sockeye swim to a lake for two to three years and leave as smolt, spend two or three years in saltwater, and return to freshwater. Chinook eggs spend one year in gravel, grow one year in the river system, and leave as smolt after one year. After two-five years in the ocean, Chinook return to freshwater. Both species return to their natal habitat, navigating by a sense of smell, which is [negatively] affected by heavy metals such as copper.

REPRESENTATIVE TUCK recalled previous committee discussion related to interference with a salmon's ability to smell caused by discharge from cruise ships. He asked about the effect from the Copper River.

[2:09:17 PM](#)

DR. SCHINDLER explained the interference with a salmon's sense of smell is not an acute response but more like one "having a cold." Although there are copper deposits in the Copper River, concentrations are very low. He said decades of research indicate salmon can make local adaptations to conditions such as water temperature and water chemistry; however, it is unknown whether salmon have adapted to tolerate copper. For example, studies in urban centers are clear that in the short-term, copper is a devastating toxin to fish.

REPRESENTATIVE RAUSCHER observed the Copper River has large deposits of copper that are known to exist because of the color of the river, and thus the fish may have been affected by other factors such as global warming.

DR. SCHINDLER advised the color of the water is not from copper, but is from dissolved organic carbon, a naturally occurring phenomenon of organic compounds. In further response to Representative Rauscher, he explained any body of water in Alaska has copper in low concentrations, which can be measured. He offered to provide documentation on the copper levels found in the Copper River.

REPRESENTATIVE HANNAN asked how much time a sockeye spends in the Copper River before swimming to the ocean.

[2:14:21 PM](#)

DR. SCHINDLER said two years: one year in gravel and one year swimming in lakes and rivers as fry. In further response to Representative Hannan, he said he would not speculate on the size and water quality of lakes adjacent to the Copper River. Dr. Schindler continued to the third inadequacy (slide 3):

- 3.) A standard component of an IES is cumulative risk because any development project has a series of risks, such as a loss of water or leaking contaminants; however, the DEIS assumes each risk occurs independently of another, which is wrong. Although DEIS does assume [independent] cumulative effects, these are the effects over time. The omission of cumulative risks that interact with each other leads to a massive underestimation of potential risks.

REPRESENTATIVE TUCK questioned whether [the underestimation of risks] is common to all DEISs.

DR. SCHINDLER acknowledged in general EISs tend to deemphasize cumulative risks, which belies that interacting stressors are where ecological damage is done. He stated for 30 years peer-review academic literature has reported cumulative risks are typically multiplicative, but the Pebble DEIS assumes stressors to be independent in the current isolation. Dr. Schindler continued to the fourth, fifth, and sixth inadequacies (slides 12-14):

- 4.) There is little discussion of the long-term treatment of wastes even though the project data states some of the rock will not start generating acid mine drainage for two decades; however, the waste must be maintained, stored, and retained for centuries. The risk of long-term treatment of waste [should] also include seismic and climate related risks such as floods, which are not addressed in the DEIS.
- 5.) Climate change is a reality and Western Alaska is affected, thus climate change risks should be multiplied by the risks associated with development. The reason the fisheries in Western Alaska have not been affected by climate change up to now "is because the habitat is intact; habitat is the insurance to climate change, you start eroding the habitat, you lose your insurance to changing climate."
- 6.) Scientists rely on previous publications; however, the DEIS includes selective and inappropriate use of existing scientific literature and he cited two examples (slides 14 and 15).

[2:23:28 PM](#)

DR. SCHINDLER concluded the DEIS is a farce and lacks scientific credibility in the following aspects (slide 16): underestimates risks; assumes tenuous assumptions; assumes no cumulative risks; assumes no effects from climate change; contains an inappropriate timeframe; contains inappropriate fish habitat assessments; misrepresents published scientific results.

REPRESENTATIVE RASMUSSEN asked who hired Dr. Schindler to do the study.

DR. SCHINDLER said SalmonState paid for his transportation and lunch. He disclosed [UW's Alaska Salmon Program] has been funded by a variety of sources since the 1940s and is a partner with the fishing industry. Most of the program's funding comes from the National Science Foundation through competitive grants to pursue science related projects and have not addressed "Pebble's specific issues"; in fact, his conclusions are based on the program's general studies of salmon habitat. Funding has also been received from the Bristol Bay Economic Development Council, foundations, and the U.S. Fish and Wildlife Service, Department of the Interior. He stated he was not paid to produce the assessment that was presented. In response to Co-Chair Tarr, he clarified the program exists to study salmon and watersheds under all conditions.

REPRESENTATIVE HOPKINS asked whether the program is part of the School of Aquatic and Fishery Sciences, UW.

DR. SCHINDLER explained the School of Aquatic and Fishery Sciences is an academic unit of UW; the program is a research organization within that unit. In further response to Representative Hopkins, he said the

leadership of the Alaska Salmon Program is comprised of professors who are state employees through UW.

[2:28:40 PM](#)

CAMERON WOBUS, PhD, Senior Scientist, Lynker, provided a PowerPoint presentation entitled, "Risks and Impacts from a Tailings Dam Failure at the Proposed Pebble Mine" and informed the committee he has been studying issues related to the Pebble mine for about 10 years. Dr. Wobus directed attention to one issue the DEIS "pretty much glosses over": cumulative impacts if there were a tailings dam failure at the proposed Pebble mine. He read from an overview of the presentation (slide 1).

REPRESENTATIVE HANNAN asked whether the human lives at risk referred to on slide 1 are residents living in downstream communities.

DR. WOBUS said yes. He reviewed a recent tailings dam failure at an iron mine in Brazil that killed approximately 300 people, noting that the failed tailings dam is 68 times smaller than the tailings dam proposed by the Pebble project 20-year mine plan (slide 2). In 2014, there was a tailings dam failure at the Mount Polley mine in British Columbia, Canada; the tailings storage facility was 11 times smaller than the proposed facility at the Pebble mine, and the breach was reported to be a failure of design related to the sub-glacial and pre-glacial geological environment associated with the foundation of the facility (slide 3).

REPRESENTATIVE RASMUSSEN expressed her understanding the design of the proposed facility at Pebble is quite different than the aforementioned examples.

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DR. WOBUS said in the DEIS the construction of the tailings dam is proposed to be by a centerline construction method; the Mount Polley facility was constructed by a modified centerline construction method. Also, in the DEIS, is that the tailings dam is designed to be a flow-through dam, however, there are no details on how the tailings would drain. He opined there is not enough information in the DEIS to determine the safety of the dam.

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REPRESENTATIVE RASMUSSEN, noting the aforementioned lack of detail, questioned why Dr. Wobus is comparing [the failed] dams to the dams proposed by the Pebble project.

DR. WOBUS said he was providing examples of tailings dam failures; data used in models comes from site specific information provided by the project such as the size of the dam, the physical properties of the tailings, and the topography of the region.

REPRESENTATIVE RAUSCHER inquired as to the similarities between the examples and the proposed project.

DR. WOBUS explained the tailings from Mount Polly drained into a lake - which limited the impact - thus the topography is different. In terms of the rheology, or the physical properties of the tailings, the model used a report based upon Pebble mine tailings and he described the modeling process related to the rheology of the tailings and the topography of the mine site.

REPRESENTATIVE RAUSCHER restated his question as to whether there are similarities.

DR. WOBUS said yes. He pointed out the report that describes all the details of the modeling is available.

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DR. WOBUS further explained as described by the current 20-year mine plan, there are two tailings storage facilities: a bulk tailings facility and a potential acid generating tailings facility. The bulk tailings facility dam is approximately 545 feet high with the capacity to hold approximately 328,000 Olympic swimming pools of mine waste, ground rock, and water (slide 4). He read from slide 5, which contained two sentences from the DEIS, that he characterized as a decision to not build the safer dam (slide 5). Furthermore, Dr. Wobus opined the DEIS is misleading because in the supporting documentation a tailings dam failure is assessed to be extremely low during the 20-year operational life of the mine; however, this limitation is not found in the executive summary or in the body of the DEIS, and the tailings dam will exist for hundreds of years (slide 6). Slide 6 also illustrated a graph of increasing probability of failure over increasing periods of time. Dr. Wobus raised the issue of a "full mine buildout" after 20 years, noting there then would be four tailings dams; in addition, continuing mine operations would prevent potential acid generating tailings from being placed back in the open pit for safety. He said this issue arises because the DEIS mine plan of 20 years is likely to have a negative net present value (slide 7).

REPRESENTATIVE HOPKINS inquired as to the structural integrity of mine facilities.

DR. WOBUS said tailings dams can be designed for known current climate conditions such as an extreme rainfall event; however, with climate change, there could be unforeseen climate events, and the DEIS does not reflect the risk of climate change.

REPRESENTATIVE HOPKINS asked how long the proposed dam is designed to last.

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DR. WOBUS advised the DEIS does not include a dam design, but has a conceptual design, which describes a dam that water will drain through - without details - thus he could not answer. Dr. Wobus informed the committee the National Environmental Policy Act of 1969 (NEPA) process requires an agency to review the direct, indirect, and cumulative impacts of a proposed project, including low probability events that would have a high consequence. He explained in detail slide 8, which was a scatterplot of 28 tailings dam failures, and which reached the conclusion that, on average, between 30 percent and 45 percent of the tailings are released in the event of a tailings dam failure. Further, the graph of tailings dam volume indicated a breach of the north tailings facility at Pebble would release 340 million cubic meters; however, the DEIS described a tailings dam failure release of a volume approximately 10,000 times less. He remarked:

So, in my opinion, the draft EIS does not look at a tailings dam failure, it looks at a pipeline rupture and that pipeline rupture, the scenario that's been developed, is assumed to be an earthquake that is large enough to rupture a pipeline, but somehow keeps the dam intact. ... And in that scenario, it's still operational, and they're able to turn that pipeline off in six hours, so we have six hours of tailings coming out of a pipeline, not 342 million cubic meters of material coming out of a tailings dam breach.

REPRESENTATIVE RASMUSSEN observed Dr. Wobus said the DEIS lacks information, therefore, she questioned upon what this every exact presentation is based.

DR. WOBUS acknowledged the dam design is unknown related to how the water will drain and the construction of the dam. However, the study has compiled available data from previous tailings dam failures, thus, using the known data on the size and volume of the proposed tailings dam, the report can estimate the volume of a release. He offered to provide the report. Dr. Wobus continued to slide 9, which was a view of the Bristol Bay watershed, noting one study area covered approximately 50 river miles downstream of the tailings impoundment and an extended model covered 85 miles downstream.

A video was shown from 2:49:19 p.m. to 2:49:49 p.m.

DR. WOBUS urged the committee to review news reports of the tailings dam failure at the Brumadinho dam in Brazil.

CO-CHAIR TARR surmised [the video simulation] is of a breach releasing for 24 hours prior to containment.

DR. WOBUS said indications from previous failures are that the releases happen quickly, and all the material would be released within 24 hours. His study included sensitivity analysis on various factors;

slide 11 illustrated sensitivity of the impacts relative to the total volumes of material released, showing a breach of 10 percent to 60 percent would spread tailings across the valley bottom, into channels, and onto the landscape.

REPRESENTATIVE HOPKINS asked if the modeled tailings release is based on the DEIS project and not on the potential full buildout.

DR. WOBUS said yes, the model is based on a release from the north bulk tailings storage facility. He returned to slide 12, which illustrated the tailings flow, most likely all the way to Bristol Bay through the Nushagak River system. Slide 13 was an overlay illustrating that the tailings would directly impact approximately 219 miles of anadromous waters. Slide 14 illustrated tailings flow impact to salmon habitat waters; slide 15 illustrated tailings flow impact to Native allotments of land and suggested there is a risk to human life not addressed by the DEIS. Slide 16 was a quote from the DEIS; slide 17 provided a link to the full report.

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RICK HALFORD, Consultant, Bristol Bay Coalition, advised the committee the Pebble project should not be located in "a fisheries place" of alternative resources. He informed the committee of his previous involvement in support of mining interests and economic development in rural Alaska; therefore, his opposition to the Pebble project is not based on opposition to mining copper or other minerals. However, areas suitable for mining copper are not incredible watersheds with high sulfur content. Mr. Halford recalled previous testimony when two large and reputable [mining] companies invested over \$100 million on environmental baseline data. He referred to information presented from 2012 to 2014, that indicated a very large deposit, and he read from a document from 2011, that listed the environmental overview; the NEPA process; the draft project description; the permit applications; federal, state and agency reviews; 67 major permits; public comments; final EIS [document not provided]. He pointed out the developers were going to apply for applications on an expansive project; however, [the current] proposal does not include certain aspects [document not provided]. Mr. Halford provided a slide entitled, "The Mineral Resource," and stressed there is a huge deposit one mile underground in a saddle between the two watersheds of the greatest salmon fishery left on the Earth. In fact, the deposit starts 1,000 feet above sea level and continues down to over 4,000 feet [below sea level]. However, the proposed project now is a small mine; furthermore, the EIS process is "very flexible" in that after filing, the developers increased the size of the first phase by 25 percent. Subsequently, after criticism, the closure documents were changed so that the open pit will be filled with the acid generating tailings and covered over. He characterized the proposal as a flexible fantasy.

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MR. HALFORD referred to an "executive summary" from Anglo American and said promises made by the proposed mine are impossible [document not provided]. He read, "the Pebble deposit area straddles the watershed boundary between the South Fork of the Kuktuli River and Upper Talarik Creek," hence the deposit is sitting beneath both of the watersheds. Further, the document refers to the underground exchange between the watersheds, and he read, "normally 95 percent of the groundwater recharges and discharges within the same drainage basin, there's one notable exception: between the South Fork of the Kuktuli as it heads downstream from the deposit and Upper Talarik Creek" [document not provided]. Mr. Halford advised, from his personal experience, the upwelling keeps the [salmon] eggs from freezing and is part of the productive system of interconnected water. He provided a picture and stressed that with a hole 1,500-1,700 feet deep at the edge of another drainage, surrounded by fractured bedrock, water will run into the hole, dewatering Upper Talarik Creek. After dewatering, gravity will refill the drainage with poisoned water and create [another Berkeley Pit, former open pit copper mine and federal Superfund environmental cleanup site]. Mr. Halford questioned how USACE could prepare a report with no economic analysis, no transportation system analysis, no closure, and no wetlands analysis. He pointed out large mining companies have invested and lost hundreds of millions of dollars and the project is left to a "promotion company" that doesn't have an investor but seeks to permit the project, with a net worth of less than \$200 million. Mr. Halford said the net present value of the project is less than zero, although the state could be left with an astronomical liability. For example, the Red Dog mine bond has risen to [\$500 million] for reclamation. He cautioned the legislature is listening to a company "on political life support," seeking to build a project that is an uneconomic liability. He provided a slide entitled, "Bristol Bay Salmon Resources," which illustrated the two biggest drainages of the Bristol Bay system. He provided an untitled photograph of Berkeley Pit. He provided two untitled photographs of a Pebble mine site that the project said was not wetlands but that showed a drill rig pad before and after the drill rig sank into the wetlands. He said this is example of why 70-80 percent of the residents of Bristol Bay are concerned.

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MR. HALFORD concluded there are good mines and nothing wrong with copper unless powdered and mixed with sulfur as proposed. Further, the foregoing is not an anti-copper, or anti-economics discussion; in fact, BBEDC seeks to encourage the growth of the fishing industry. He stressed in this region, fish are life, heart, and food, and should be protected. He restated the proposal is really an 11 billion ton mine that has been advertised to investors [but] concealed from regulators.

REPRESENTATIVE SPOHNHOLZ asked for the location of the Berkeley Pit.

MR. HALFORD said the Berkeley Pit is in Montana and requires perpetual remediation.

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ADJOURNMENT

There being no further business before the committee, the House Resources Standing Committee meeting was adjourned at 3:12 p.m.