

**ALASKA STATE LEGISLATURE**  
**SENATE RESOURCES STANDING COMMITTEE**

February 29, 2008

3:35 p.m.

**MEMBERS PRESENT**

Senator Charlie Huggins, Chair  
Senator Bert Stedman, Vice Chair  
Senator Lyda Green  
Senator Gary Stevens  
Senator Bill Wielechowski  
Senator Thomas Wagoner

**MEMBERS ABSENT**

Senator Lesil McGuire

**COMMITTEE CALENDAR**

Large Mine Permitting Overview

**PREVIOUS COMMITTEE ACTION**

No previous action to consider

**WITNESS REGISTER**

ED FOGELS, Director  
Office of Project Management and Permitting  
Department of Natural Resources (DNR)  
Juneau, AK

**POSITION STATEMENT:** Presented Large mine permitting update.

**ACTION NARRATIVE**

**CHAIR CHARLIE HUGGINS** called the Senate Resources Standing Committee meeting to order at [3:35:20 PM](#). Present at the call to order were Senators Wagoner, Stevens and Huggins.

Large Mine Permitting Update

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ED FOGELS, Director, Office of Project Management and Permitting, Alaska Department of Natural Resources (DNR), said he would present the condensed version of large mine permitting that the department had been giving to public forums around the

state. He said the state's large mine team is monitoring a couple of Canadian mines because they are in drainages that flow into Alaskan waters. He added that Canada is actually letting several division members sit on the project team as full participants.

SENATORS WIELECHOWSKI and STEDMAN joined the committee.

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MR. FOGELS said he would first go over the process the department generally uses for permitting a major mine project, a quick mining 101. He wanted them to understand that their process doesn't guarantee a "yes" and that most major permits are issued through other agencies and what DNR does most is coordination of the permitting process.

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He started with how mineral rights get established in the first place. In general state land is to be managed as multiple use; the rights are established through Article 8 of the Constitution. Those rights are acquired through staking where a prospector goes out and finds something interesting and puts his four stakes in the ground and has it recorded. On private and Native corporation land (ANCSA), the mineral rights are acquired through negotiation with the land owner.

He said typically state land use plans determine the primary use of state land and can close up to 640 acres of land to mining. For closures of more than 640 acres, and the state legislature has to do make that decision.

CHAIR HUGGINS asked if the private land owner has subsurface rights or do those belong to the state.

MR. FOGELS answered that the Native corporations have the subsurface rights on their lands. Other private land can vary, but the state retains the subsurface rights on its land. He said if there is no land use plan in place, then the default is typically that the state land is open to mineral entry.

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MR. FOGELS presented a typical timeline for a mine, noting that the permitting phase starts about in the middle of his chart and goes for about three years. He said a major mine will need to have federal involvement through the National Environmental Policy Act (NEPA) and an environmental impact statement (EIS).

For that reason, it's difficult to permit a mine in less than three years and it may take as long as five.

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SENATOR GREEN joined the committee.

CHAIR HUGGINS asked if it took 13-15 years before a mine can really go into operation.

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MR. FOGELS indicated that was correct; he added that post closure and monitoring goes on for 60 years and sometimes much longer - maybe even forever. He said the Pogo project required 52 necessary authorizations and many agency requirements. Again, he mentioned that DNR's role is to act as the coordinator

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SENATOR STEVENS asked if the list includes a Department of Fish and Game (ADF&G) permit.

MR. FOGELS replied that the only permits the Department of Fish and Game would issue would be if a mine happened to be in a special fish and game area. The permitting function that was in ADF&G was recently transferred to the Office of Habitat Management and Permitting in the DNR. However, the Governor has introduced an executive order to move it back to ADF&G.

SENATOR STEVENS commented that there is no ADF&G permitting necessary for something like Pebble.

MR. FOGELS answered that is correct; however he said that ADF&G is very involved in the permitting process.

CHAIR HUGGINS noted that the executive order is effective on July 1.

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MR. FOGELS displayed a thousand-page permit application package for Pogo and said the materials they would get for a mine like Pebble or Donlin will be ten times that big - the point being that it's not just a little form they fill out.

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SENATOR WIELECHOWSKI asked if all the mistakes in mining - like a dam with tainted lead water breaking in Colorado - had been corrected yet.

MR. FOGELS replied that a lot of that happened before modern environmental regulations were in place, and it is his job to make sure those kinds of things don't happen again. It's all about water quality and the geochemistry of rock, a science that has evolved tremendously in the last 15 years. They have to focus on what the water quality impacts will be long-term rather than just a couple of years. He said more fish are downstream of Fort Knox and Red Dog than before the mines were there.

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He explained that any time there is a federal authorization, the NEPA gets invoked and for a large mine that means an EIS, and that is the real driver to the process. The state agencies "just plug in on that train and move along with it." They can't shorten the process, but must work within its scope.

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MR. FOGELS said the Pogo Mine is a very "small large" underground gold mine near Delta Junction. He said the agency discussions were started in 1997 and the EIS was initiated in August 2000. He explained that up to now Alaska has had large mines and mom and pop placer operations, and very little in between. So, amongst the spectrum of major mines, Pogo is one of the smaller ones in terms of footprint; Fort Knox and Red Dog have a much bigger footprint. He is not talking about monetary worth or production value.

SENATOR STEVENS asked if state permits are issued one at a time as they are completed or all together.

MR. FOGELS answered that there are 52-plus permits. The ones that were issued in December were the major permits that would allow the mine to start construction. Probably a dozen minor permits would follow. Some quality permits typically follow after the major permits are issued. The air quality permits, for instance, can't be adjudicated until they get specific details like model numbers on generators that the company won't even know until they get the green light to proceed. The major permits are the ones that the corporate board room looks at and says, "Okay, you've got the bulk of them done, you know, spend the money. Develop the project."

The typical EIS process involves baselines studies before the mine goes in - what Pebble and Donlin are doing right now. Those result in reams and reams of documentation.

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SENATOR WIELECHOWSKI asked where the Pebble process is now.

MR. FOGELS replied the company hasn't done its feasibility study yet. They are probably still working on the prefeasibility study, which is a general study to determine the reasonable potential for developing an economic mine. The feasibility study gets taken to the bank for financing.

CHAIR HUGGINS asked who is paying for that.

MR. FOGELS answered the company.

CHAIR HUGGINS asked where Pebble is in terms of years.

MR. FOGELS replied the initial exploration happened over 20 years ago when the claims were staked by Cominco. It sort of went dormant and no one was interested in the property. Their timeline started when Northern Dynasty came on board about five years ago.

SENATOR WIELECHOWSKI asked if the legislature would have to eventually decide whether to proceed with Pebble or not.

MR. FOGELS replied that a lot of pieces of legislation are before the state legislature right now that could affect its progress, like the clean water initiatives. Under the current process, issuing the permits is an executive decision by each department.

CHAIR HUGGINS noted a news release that said, "Judge says clean water initiative unconstitutional-AP." He asked if he was familiar with that initiative.

MR. FOGELS answered yes; the Fairbanks judge said it is unconstitutional, but the judge in Dillingham said it is. So that has to be resolved. There are two clean water initiatives, one and three. Three is a lot less stringent and the Fairbanks judge said that one is okay to go.

CHAIR HUGGINS asked when Alaskans could expect to hear from the Supreme Court on the ruling.

MR. FOGELS said he couldn't venture to guess.

MR. FOGELS said the state coordinates the process and tries to streamline it. For instance, they provide draft decisions and environmental impact statements; all the public meetings are

coordinated so the public can come to one meeting and get all its state and federal agency questions answered. He said they are not "cutting corners," they are just trying to synchronize so the public can participate in a meaningful way.

CHAIR HUGGINS asked him how he got this job and what his experience is.

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MR. FOGELS replied that he started working for the state in 1986 as an intern with the Division of Geological and Geophysical Surveys. He started working in the lands section of the department and did land use planning for a number of years. He then worked in the coal regulatory program for a number of years where he managed the coal regulatory program. At that point (1995), he was asked to start working on the other projects that were beginning to ramp up. The department needed better coordination because the industry couldn't get a straight answer out of any one agency.

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CHAIR HUGGINS asked who is at the center of the coordination role.

MR. FOGELS answered that he is the director of the Office of Project Management and Permitting and their job is to have the coordination role within the state. Mining coordinators are assigned to each project.

He mentioned that every state permit has some kind of a public process loop and even though everything is coordinated, all the comments have to be taken into account by each individual permit authorization. There is a lot of public participation for Donlin and Pebble right now even though the permitting hasn't started. Once the EIS starts, the formal public process begins.

He said the federal government requires government-to-government consultation with the tribal governments. Every authorization has its comments associated with it even though they might be asked for all at once.

SENATOR STEVENS asked if they recognize the tribes as governments.

MR. FOGELS answered the state doesn't, but the feds do. The federal government-to-government outreach is just a vehicle to talk to those tribal entities in more depth and are part of the

NEPA process. The federal government is required to offer the process to the tribal governments that don't always accept it. If they do, then the federal government is required to formally communicate with each tribal government.

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SENATOR GREEN said she understands the feds calling them government-to-government meetings, but she was concerned that the state is acknowledging that might also be involved in government-to-government talks. She said that it should be made clear that is not what the state is doing.

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MR. FOGELS agreed. He then went on to discuss whether the state ever says "no." Yes, the state says "no" many times, he said, but it's not that simple. Each permit has several or many yes or no decisions within it. The state will say "no" to a particular component of an application and the company has to go back and redesign it.

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CHAIR HUGGINS asked for a 30-second burst on the Kensington Mine in Juneau that got derailed when people thought it was going forward.

MR. FOGELS answered there was always a lot of opposition from environmental groups on the method of tailings disposal which was putting the tailings in an alpine lake. The agencies reviewed that and had a choice. The company had already received permits years ago for a whole different mine plan. They decided that mine plan was uneconomical and came back with a new one that required a whole new EIS. The original permitted project had a dry stack tailings facility on 160 acres of wetlands. The new proposal put the tailings in a 12-acre natural lake, much smaller than the other footprint. The agency's job was to evaluate the relative environmental merits and weaknesses of each proposal and they decided that it looked highly likely under the Slate Lake tailing disposal option that the lake could be restored post-closure into a lake that has as much productivity as the original one, if not more. Biologists and the agencies were convinced that could be done. That was part of the weighing process and that option was permitted.

However, the federal Environmental Protection Agency had a conflict with the Army Corps of Engineers that created some ambiguity about the legality of putting those tailings in a lake. That is what the environmental groups challenged and won

in the Ninth Circuit. So, the company has worked with the environmental groups that brought the suit to come up with plan B that goes back to the dry stack, but a smaller and newer design. They have all agreed it can be done and they are now working with the agencies to permit plan B.

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SENATOR STEVENS asked if the state ever really says no when it's all said and done.

MR. FOGELS reminded him that there are only five operating mines in Alaska that have been permitted over the last 20 years. It's not like they are getting hundreds of these things to decide on every year. The AJ Mine project went through a rigorous permitting process that the company finally gave up on. Sometimes the applicants pencil out a project and decide not to apply if they don't think they can do it. Typically when an applicant applies for a permit, they have done enough homework to know the project is doable.

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SENATOR WIELECHOWSKI said it really comes down to cost. If the company can afford to do it, his office generally says "yes."

MR. FOGELS answered that is "a pretty fair assumption....the technology is there to protect the environment on these mining projects."

SENATOR WIELECHOWSKI speculated that it's pretty likely the Pebble Mine will be permitted. It is a \$500 billion project.

MR. FOGELS replied that the company hasn't actually submitted their applications. Some permitting obstacles might be so expensive that even Pebble backers can't afford it. There are other risk factors like having 1,000 employees, the additional hunting and fishing pressure, access and visual impacts that can't be mitigated with money.

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SENATOR STEVENS asked if he was saying the environmental stuff could be handled, but not the other stuff like human impacts.

MR. FOGELS responded yes; the population changes the use patterns in the area.

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SENATOR STEDMAN reflected on what will happen to the region when they create employment and communities that can afford to operate as communities and improve the state's tax base.

He said a good example would be to look at Southeast Alaska when the timber industry came in. It now has more deer, more salmon, more roads and better schools, hydro electric capacity and communities that are self sustaining. A lot of economic good was left behind when the industry moved on.

CHAIR HUGGINS said he actually hunts and fishes in the Pebble Mine area and in talking to local people, he found two or three things appealed to them that had nothing to do with the mine other than jobs for family and friends. The first one was that it would bring down the cost of power generation, the second was it would lower the cost of commodities because a road would exist to bring things in versus barging or flying items in. He was surprised at how receptive people were, but he also remarked that the caribou had left that area and that is a concern. There is also a great sensitivity to the business of fish and their survival.

MR. FOGELS said these mines have tremendous potential to contribute to the economy of the region.

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CHAIR HUGGINS said the Donlin workforce had an astonishing turnover based on sociological difficulties.

MR. FOGELS remarked that it's a pretty spectacular story. No one could pass the drug and alcohol testing in the beginning, but now it has an almost 100-percent pass rate and almost all their managers are from the local villages.

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MR. FOGELS went back to the mining 101 format and said Alaska has three basic types of mining - placer mining that are mostly smaller mom and pop operations, underground mines like Greens Creek and Pogo and open pit mines like Fort Knox and Red Dog. (In this presentation he wouldn't touch on coal mining which is strip mining.)

Showing a picture of the Fort Knox project, he said ore is in discrete bodies within the rock and is surrounded by waste that has to be removed. Sometimes the waste has some metal in it that can be put aside and maybe mined a little later. But essentially

they are going after the ore bodies that have been delineated by drilling.

The waste rock is called "tailings" and they are put in a pile next to the pit somewhere; the ore is taken to the mill where it gets processed. In Alaska tailings are typically treated one of two ways: compressed and filtered with the water squeezed out and stacked in a "dry stack tailings" fashion or put in a wet tailings impoundment system." Dry stacked tailings, because they are dry and therefore more stable, but this method is also more expensive. The other method is to slurry the tailings by putting them in what is called a "wet tailings impoundment" behind the dam. Typically a layer of water is kept on top of the impoundment to keep the tailings wet. In some instances that keeps them from oxidizing and releasing harmful substances.

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SENATOR WAGONER asked him to explain what happens to wet tailings.

MR. FOGELS answered that wet tailings are the consistency of flour with the water layer being about 2-20 ft. The tailings settle and become impermeable over a period of 10 to 20 years. They can become an impermeable liner that is maybe hundreds of feet thick. The mining company has to show the division studies about the tailings and what they are going to do over time and what the chemistry of the tailings will be. A really large mine will generate a lot of tailings and they can be split into good and bad tailings. The good tailings are essentially clean and can line a good part of the tailings impoundment. A system can be designed where the good tailings can theoretically contain those bad tailings very handily. This method must be engineered well and reviewed by his department. No one has designed a tailings facility like that in Alaska, but they have been designed that way in other parts of the world.

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His department has to deal with three basic waste products: waste rock, dry stacked tailings and wet tailings. They are really concerned about the geochemistry of the rock, because when the rock is ground up, it will weather faster and the minerals and chemicals will leach out faster than if it were still in a solid form. He said there is a wide spectrum of solid and waste rock; the tailings can be as clean as can be with no danger of ever leaching anything out or it can be really reactive and pose serious problems. Examples of clean rock are Fort Knox, which is essentially a granite body that has no

chance of ever releasing any metals. The tailings from the Red Dog are very reactive, however. So when it rains, the sulphides will release metals; so there will be bad water coming out of those piles. The mining company has to do extensive sampling.

SENATOR WIELECHOWSKI said he went to the Red Dog this summer and was impressed. He has read about how it's the most toxic in the United States and he asked if they are doing what needs to be done up there. He asked what exactly the potential for toxic dust is.

MR. FOGELS said he believes they are doing what they need to do. The story about it being the most polluting mine in North America stems from the EPA's toxic release inventory and how they define "toxic release." When they move rock from the pit at Red Dog to the waste rock pile, they move 100 tons of rock. That 100 tons of rock has huge amounts of lead and zinc in it and the move within the mine site is counted as a release. That's why those numbers are so huge. It's not that actual pollutants are getting out into the environment, and it isn't called "pollution" on the EPA's website, but it's still very misleading. There are more fish downstream now than when the mine started, mainly because the rains were going over areas that were so mineralized in the first place that it was killing off the fish. Those fish are being tested now at Red Dog, Fort Knox and Greens Creek, and those fish are happy.

The Red Dog has had a dust problem that is generated from concentrated lead and zinc ore. That concentrate was getting into the wheels of the trucks and the toxins would be released from the truck while it was driven 50 miles to a site. The problem has been recognized and the company bought a whole new fleet of trucks with hydraulically sealing lids and they now have truck washes. He is very comfortable that the company has done a huge amount of good in reducing the dust emissions. The problem now is how to deal with the contaminated tundra.

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MR. FOGELS explained that some minerals in a rock can generate acid, which is a huge problem; other minerals such as carbonates, consume acid. If a rock has equal amounts of acid-generating minerals and acid-consuming minerals, then theoretically, all the acid should be consumed by the other minerals. A company can identify which rocks are non-acid generating and those can be used for road construction; the potentially acid-generating rocks have to be treated specially to make sure the water doesn't, in the long term, get into the

environment. Consultants use another test by putting rocks in big columns and percolate water through them for 100 weeks or so to get an idea of what the long-term potential is for releasing bad water. That gives the agency a good sense of what the chemistry is. No water is released before it runs through a treatment facility.

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He said in the old days there were bad water issues, but they understand those issues much better now and are a lot better at mitigating them - even much better than 10 years ago.

MR. FOGELS provided them with a list of the main state permits and he touched on the details of a few. He started with the Department of Environmental Conservation (DEC) since it has one of the most significant permitting roles. Their waste management permit actually permits the waste facilities. This permit basically says they understand the mine's water quality impacts potentially in the long term from the facilities and that the facility design addresses it adequately.

The NPDS permit is a federal permit that actually allows water to be discharged. It is issued by the EPA, but the Alaska DEC must put its stamp of approval on it, as well, in terms of a certification. The DEC also has to approve the Army Corps of Engineers wetlands permit.

He said the DNR approves the reclamation plan; regulations say that the mine has to be returned to a stable condition compatible with the post-mining land use. If it's on state land that means it has to be compatible with what the state's land use plan says. If it's private land, the land owner gets to determine what they want their land use to be. If they want it flat to build a Wal-Mart there, it's up to them. His job is to make sure the state's resources are protected including critters, water and air quality.

MR. FOGELS emphasized that the financial assurance is very important because it applies to the reclamation plan and to almost all the other permits. It is sometimes called "bonding," but that word isn't used much any more, because that it refers to a specific type of financial assurance. Financial assurance is just a financial mechanism that assures that the State of Alaska has the money to clean up the mine if the company cannot.

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He showed a picture of the Illinois Creek Mine where the rock dumps had been recontoured after closure, indicating that vegetation had taken hold and that this mine had been done properly. It's a science, he said, and it can be done wrong, too.

He said for the financial assurance the companies give him detailed engineering analysis and hundreds of pages of spreadsheets on what it would take to reclaim the area including cost of grass seed, rental equipment, fuel and labor. When they settle upon a number, the companies used to give the state surety bonds, but those are hard to get now. Almost all of them give the state letters of credit with major financial institutions. If they bail on their credit, the bank cuts the state a check.

SENATOR WIELECHOWSKI asked if the state was using the reclamation money that Red Dog put into this bond to force them to pay for the dust clean up.

MR. FOGELS replied at this point the idea is for them to clean it up. The state would have to deal with it if the mine closed and Teck Cominco went bankrupt and left the scene.

SENATOR WIELECHOWSKI asked if they are doing that.

MR. FOGELS replied they will be; the agencies are trying to figure out how best to clean the tundra up. At the extreme, they could tear it all up, haul it off and incinerate it, but then they would have huge swaths of mud that would be really hard to revegetate. Since it will be an industrial road for over 60 years, it might be shown that over the years with rain water the metals will leach into the ground and not be an issue. They don't have an definitive answer for that question yet.

SENATOR WIELECHOWSKI said he assumed Red Dog went through this massive permitting process, but still the contamination happened. He asked if other things are happening that Mr. Fogels isn't catching that the legislature needs to be concerned about in the mining world.

MR. FOGELS emphasized that Red Dog was permitted 20 years ago before the statutes for reclamation bonding were even there. Today it would be a whole different process. Red Dog is complicated because it was permitted before a reclamation statute was in place. His agency has worked for four years with the company to develop one and it's almost done.

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SENATOR WAGONER said he gets a lot of statements and emails wondering about letters of credit. A lot people have the idea that if the company goes broke or leaves Alaska, that letter of credit doesn't stay with the mine. He asked him to explain how it works.

MR. FOGELS explained that the letter of credit essentially binds the bank to provide the funds to the State of Alaska should the company not be able to live up to the requirements of the reclamation plan. It's between the state and the bank and it's his job to make sure that that bank is a major financial institution that is licensed to do business in the U.S. and has the resources to cut a large check for the state.

CHAIR HUGGINS asked how long it takes the state to react to a report of difficulty for an operating mine and what is at their disposal to act.

MR. FOGELS replied that it depends on the mine and what the problem really is. No mine is perfect. It depends on what the threat to the environment is. They work with mines continuously to make course corrections to fix things. They do mine inspections as often as possible and try to get to most mines at least quarterly and more if an issue is going on. If a problem comes up, they will be on it right away. If it's an imminent threat to the environment, something has to be done right away. Stop orders can be issued, for instance.

SENATOR WIELECHOWSKI asked what if the total amount of bonds in the entire state is \$278 million and the Pebble Mine has a leakage into the Kvichack River, for instance, that causes \$1 billion worth of damage in lost fishing. Who pays for that?

MR. FOGELS answered that the bond is for the state to be able to shut down the existing operation, reclaim it and make sure the water is treated. They can only bond so much and not for a total catastrophic failure. They can't cover every possible eventuality. Typically the monitoring ring around the mine allows one to see a problem developing. It's very rare that a dam splits and everything washes downstream. Usually, there is some seepage in an unexpected place and the monitoring picks it up. They go onsite and work with the company to correct it. The idea is to watch it closely so that problems can be caught when they are very small. It wouldn't cover an incident like the

Exxon Valdez or no one would be able to afford to do business here.

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MR. FOGELS said there are two parts to a financial assurance. One is to do the dirt work and putting the place to bed in the immediate term and the other is to take care of the water treatment. At Red Dog they all believe the water will have to be treated forever. So they have a water treatment plant there that costs \$4 million/year to operate. Therefore, the state has a trust fund in place that will generate enough interest to pay for it - plus unexpected contingencies. Dams typically need them; the Kensington permit for the Slate Lake dam had \$1 million trust fund, although that won't get built now. He said, finally that financial assurance applies to all U.S. and non U.S. corporations. Foreign nations are just as liable to follow our laws as anybody else; the financial assurances don't care where the company is from.

SENATOR STEVENS asked if the mines in Canada offer the same protections as U.S. mine laws.

MR. FOGELS replied that he is comfortable with Canadian mining regulations and water quality standards; in some places they are stricter than ours. British Columbia has more mining going on and they have a lot of experience with these projects.

CHAIR HUGGINS said one reclamation project in Alberta put the same surface terrain back in place because they were reintroducing buffalo to that area. He explained that the oil sands mining in Alberta is more akin to coal mining, which is sort of strip mining where you dig your first hole, you take the coal or oil sands out, you put that dirt somewhere, then you dig the second hole and put it back into the first hole; you dig your third hole and put your dirt back in the second hole and you sort of march along. You can kind of create the land contours to be similar to what existed before.

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MR. FOGELS summarized that the bond amounts vary with long-term obligations and water treatment. The amounts are reviewed at least every five years to make sure that circumstances haven't changed. He said the reclamation plan for the Red Dog, as well, can actually offer something back to the community.

SENATOR STEVENS asked if the pit at Fort Know would be used as a lake and recreation area.

MR. FOGELS answered that the Fort Knox reclamation plan provides for a lake that will take about 70 years to fill up. If the granite rock surrounding it is determined to be safe, it could become a recreational body of water.

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He said that every mine has dams for either water supply or tailings. DNR has a mine safety engineer who certifies all dams whether they are for mining or not, and they have seismic standards as well. Financial assurance is required for them. Dams are designed to leak, he said, otherwise the water will build up within the core of the dam and destabilize it. They check on where that water goes, its quality and what happens to it when it comes out the other side of the dam. Dams have to be taken care of as long as they exist.

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Title 41 permits are issued by DNR's Office of Habitat Management and Permitting that will soon be moved to the DF&G. Essentially, permits are required for any work in fish bearing waters. Monitoring is the key, he said; every mine has to have a net around it that monitors every aspect of the environment so that problems can be caught as they develop rather than waiting for a disaster to happen. Monitoring ground water in particular is essential in discovering problems early.

MR. FOGELS said that the agency is audited, as well, by third-party experts. The audit is put out to bid and is done by some big environmental engineering firm like HDR Golder that sends in a team of 15 people. They will spend close to a year auditing every aspect of the mine and the agencies.

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He summarized that eight agencies are involved in the permitting process: the Division of Mining, Land and Water, the Division of Habitat, the Office of Project Management and Permitting, the newly created Division of Coastal and Oceans Management to do the coastal zone reviews, DEC's three main divisions of water, air quality and environmental health are all involved, and the Department of Fish and Game, even though they may not have authorizations to issue, is still involved to provide information.

The DEC large mine permitting team comes from the statute that named DNR as the lead player in the coordination of large mining projects in the state. There is a companion statute to the

duties of the commissioner that puts DNR as lead for all resource development projects, but this is the one specific to mining. They created a team back in the Fort Knox permitting days and the same core group of people has been working on these mines close to 20 years now and have accumulated a lot of expertise. He urged the legislators to use them as their experts and to ask them technical advice on any particular component. If something comes up that they don't have expertise on, like geochemistry, they'll hire it out. The team is involved from pre permitting to post closure and also conducts the inspections after the permitting.

Another important point, he said, is that all of the agencies' costs are billed back to the project applicant. They have MOUs with every mining company they are working with and these companies are billed every six months for all state agency time incurred by a particular project. He has \$1.2 million to \$1.3 million in MOUs that run his budget and the budgets of all the other agency people.

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SENATOR WIELECHOWSKI asked how Alaska's tax structure on mining compares to other jurisdictions'.

MR. FOGELS answered that he was in the midst of trying to put that information together for a current piece of legislation. Some states have higher tax rates and some have lower. The payback to the state is increasing now. Mining is different than oil and gas; it's very capital intensive in the beginning.

SENATOR WAGONER said the tax amount depends on whose land the mine is on. He said the Pebble is on state land and that land was set aside by the state for mining. He asked what royalties the state would receive on that land.

MR. FOGELS answered the state would receive a 3 percent royalty on net profits, a mining license tax of 7 percent and a corporate income tax of 9 percent.

SENATOR WAGONER remarked that the oil companies pay 25 percent on net profits and mines pay 3 percent and this mine is now projected to produce \$500 billion. He wondered if 3 percent was a fair and equitable share for the state to receive from this sector.

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SENATOR STEVENS said he keeps hearing from one person he has great respect for that for the Pebble mine the one issue he has the most trouble understanding how it will end up is the dam. Experts say that is a critical issue. Yet Mr. Fogels showed them a slide that implied that it's a fairly benign thing. He asked if a catastrophic earthquake damage to the dam would be benign or could it damage the Bristol Bay resource below it.

MR. FOGELS answered that you can't answer that question until you see what the mining company proposes to build. "It is technically possible to build anything given enough money." The dams on the Pebble site are going to be a huge concern. Some of the areas where dams are proposed have many hundreds of feet of glacial till or overburden on top of bedrock. It's always best to build a dam and key it into bedrock. If you can't reach bedrock, you have to have some kind of permeable material between the dam and the bedrock which is a conduit for seepage. He explained:

You can place grout curtains, which are slots full of concrete and other materials, pretty deep now with technology. It's very spendy and, again, that technology is improving by the day. So, by the time that Pebble - maybe they submit their permits - I don't know when - they may have some solution to really show that they can drop a grout curtain to bedrock and seal it up.... As regulators, we're going to be looking at that very carefully.

He speculated that maybe the tailings could be split apart to where 80 percent of them are very benign and 20 percent are reactive. A tailings facility could be designed where the reactive tailings are far enough back, like one mile behind the dam, to where even if it cracked wide open, they wouldn't escape. But, without seeing the actual designs, he couldn't tell it that would actually work or not. But the concepts are there.

CHAIR HUGGINS thanked him very much for his presentation and adjourned the meeting at [5:06:23 PM](#).