

**ALASKA STATE LEGISLATURE
SENATE RESOURCES STANDING COMMITTEE**

February 1, 2019

3:30 p.m.

MEMBERS PRESENT

Senator Chris Birch, Chair
Senator John Coghill, Vice Chair
Senator Cathy Giessel
Senator Lora Reinbold (online)
Senator Scott Kawasaki
Senator Jesse Kiehl

MEMBERS ABSENT

Senator Click Bishop

COMMITTEE CALENDAR

OVERVIEW: ALASKA OIL & GAS CONSERVATION COMMISSION

- HEARD

PREVIOUS COMMITTEE ACTION

No previous action to record

WITNESS REGISTER

DAN SEAMOUNT, Commissioner
Alaska Oil and Gas Conservation Commission
Anchorage, Alaska

POSITION STATEMENT: Provided an overview of the commission.

CATHY FOERSTER, Commissioner
Alaska Oil and Gas Conservation Commission
Anchorage, Alaska

POSITION STATEMENT: Provided an overview of the commission.

ACTION NARRATIVE

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CHAIR CHRIS BIRCH called the Senate Resources Standing Committee meeting to order at 3:30 p.m. Present at the call to order were Senators Kiehl, Coghill, Giessel, Kawasaki, Reinbold (online), and Chair Birch.

OVERVIEW: Alaska Oil & Gas Conservation Commission

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CHAIR BIRCH announced that the committee will hear an overview from the Alaska Oil and Gas Conservation Commission (AOGCC). He detailed that AOGCC oversees oil and gas drilling, development and production, reservoir depletion, and metering operations. He said AOGCC is the agency that acts on behalf of the state to prevent waste, to protect correlative rights, improve ultimate recovery, and protect underground freshwater.

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DAN SEAMOUNT, Geologic Commissioner, Alaska Oil and Gas Conservation Commission (AOGCC), Anchorage, Alaska, addressed slide 2 in AOGCC's overview, "AOGCC has oversight over oil and gas projects everywhere except Denali National Park." He said AOGCC's main office is in Anchorage, a field office for the inspectors on the North Slope at Deadhorse, and inspectors' residential offices in the Kenai Peninsula for Cook Inlet inspections.

He explained that there are two basins in Alaska that are currently producing, the Cook Inlet and the Colville Basin on the North Slope. He emphasized that Alaska has over 20 basins that have oil and gas potential with little activity due to the state's remoteness. He said there are a lot of future potential in hydrocarbons for Alaska.

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He referenced slide 3 in AOGCC's overview presentation, "Quasi-judicial state regulatory agency, mainly sub-surface" as follows:

- AOGCC Mission: To protect the public interest in exploration and development of Alaska's valuable oil, gas, and geothermal resources through the application of conservation practices designed to ensure greater ultimate recovery and the protection of health, safety, fresh ground waters, and the rights of all owners to recover their share of the resource. Exception to sub-surface oversight is the proving of metering so allocation of production is fairly distributed.

- Funded by industry receipts of \$7,468,600 for FY2019. AOGCC takes no money out of the general fund. The Legislature approves the AOGCC budget and represents the people of the State of Alaska who AOGCC works for.
- Small amount from the United States Environmental Protection Agency (EPA) for managing Underground Injection Control (UIC) program: \$119,000 for FY2019. UIC takes up one third of AOGCC's budget and the commission is underfunded.
- Extremely technical, arbitrary interpretation of law regarding AOGCC decisions difficult.
- Statute (title 31), regulations, and science is very tight.
- Jurisdiction over private and public lands, adjudicate disputes between resource owners.
- Thirty-two total staff members: 3 commissioners, 2 geologists, 6 engineers, 9 field inspectors, 2 statisticians, 2 IT, 8 administrative.

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CATHY FOERSTER, Commissioner, Alaska Oil and Gas Conservation Commission (AOGCC), Anchorage, Alaska, addressed the UIC program's budget and noted that AOGCC would be doing the work anyway as part of the commission's oversight, so the commission is saving the federal taxpayers money by eliminating a redundancy. The only added work is the paperwork that is required.

She referenced slide 4, "Quasi-judicial state regulatory agency, mainly sub-surface," as follows:

- Protect human safety on rigs.
- Protect fresh water:
 - Down to one-quarter mile:
 - Manage Class II UIC program.
- Prevent physical waste of energy resources:
 - 0.5 to 5.5 miles drilled depth,
 - 3 miles vertical depth deep.
- Promote greater ultimate recovery:
 - 0.5 to 5.5 miles drilled depth,
 - 3 miles vertical depth deep.
- Protect correlative rights.
- Intense inspection and enforcement.

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CHAIR BIRCH asked how a well is plugged.

COMMISSIONER FOERSTER answered that wells are plugged on a case-by-case basis. Plugging methods are determined by the well's geometry. The objective of plugging a well is to secure any hydrocarbon-bearing zone or any other zone that could produce hazardous fluid from coming to the surface or from commingling with another underground resource. Plugging can be done by cement, bridge-plugs, or a combination from total depth up to the surface. When a well is plugged, the wellhead is cutoff, the top five feet of the casing is cutoff, a marker-plate is placed on top and welded into place in case of future excavation.

CHAIR BISHOP asked if the plugging method Commissioner Foerster described would allow for access in the future.

COMMISSIONER FOERSTER answered no. She explained that the plugging method makes going back into the well cost prohibitive.

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COMMISSIONER SEAMOUNT addressed slide 5, "AOGCC primary services," as follows:

- Regulate, monitor, and inspect all subsurface activities directly related to oil and gas exploration and production including the design and integrity of wells, well control procedures and equipment, reservoir management plans, and proposed underground injection programs:
 - Hold hearings.
 - Issue pool rules and other conservation orders.
 - Approve and monitor plans for reservoir development and enhanced oil recovery.
 - Approve permits for initial drilling, re-drill, sidetrack, and remedial well operations; this includes the evaluation and approval of proposed designs for drilling fluids, well control, casing, cementing, and well completion operations.
 - Inspect drill rigs and wells to insure compliance with AOGCC regulations.
 - Witness safety valve, mechanical integrity, and blowout preventer tests.
 - Witness meter-proving, calibration, and oil quality tests.
 - Enforce well spacing rules.
 - Monitor production rates, injection well pattern, gas/oil/water ratios, and pressure maintenance efforts.

- o Monitor and evaluate gas flaring.
- o Collect and maintain all oil and gas production records.
- o Collect and maintain all well history files and well log records.
- o Administer Alaska's Underground Injection Control (UIC) program and the annular waste disposal program (protection of drinking water).

SENATOR KAWASAKI noted that Commissioner Seamount had said that AOGCC does not have enough inspectors.

COMMISSIONER FOERSTER opined that AOGCC does have enough inspectors.

COMMISSIONER SEAMOUNT explained that AOGCC has very aggressive performance measures.

COMMISSIONER FOERSTER specified that she routinely asks her inspectors if AOGCC has an adequate number of inspectors and their answer is always "yes." She said inspectors go to every rig every month or two, and frequency is increased if a rig is having a problem passing a blowout preventer (BOP) test or other concerns. She added that inspectors try to witness mechanical integrity test on injection wells with a set frequency.

COMMISSIONER SEAMOUNT added that Alaska is in a very fortunate position that the state has some very good operators. He said he did not know of any incidences where the operators have not self reported a problem.

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SENATOR KAWASAKI asked if AOGCC anticipated a need for more inspectors with the North Slope's anticipated growth.

COMMISSIONER SEAMOUNT answered that AOGCC will deal with the anticipated increase in activities when needed.

COMMISSIONER FOERSTER added that AOGCC has asked the Legislature for additional positions in the past when activity increased.

SENATOR KIEHL asked who sets the performance measures and how were they derived.

COMMISSIONER SEAMOUNT answered that the performance measures were set a long time ago and have been adjusted. He added that the original measures have not been changed.

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COMMISSIONER SEAMOUNT addressed slide 6, "AOGCC permits and decision /orders, 2009-2018" as follows:

- Permits to drill: 1,605.
- Drilling completed: 1,658 wells and branches.
- Well work activity reports: 8,401.
- Orders and decisions: 717:
 - Aquifer exemption,
 - Area injection,
 - Disposal,
 - Enhanced recovery,
 - Metering,
 - Pool rules,
 - Production and other topics:
 - Major orders: 59,
 - Amendments: 539,
 - Well spacing exceptions: 119.
- Special development considerations are "many."

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COMMISSIONER FOERSTER addressed slide 7, "Major issues of 2018" as follows:

- Growing inventory of old and idle wells:
 - Ensuring mechanical integrity;
 - Plugging wells with no future utility;
 - Annual review of idle wells and operators' intentions.
- Operator bankruptcies, orphan wells:
 - Liability falls back on the landowner if bankrupt operator cannot plug its wells;
 - State of Alaska is the landowner for the majority of wells;
 - CIRI exercised its contractual right to have the previous operator pay for well plugging.
- Well bonding adequacy.
- Bureau of Land Management (BLM) legacy, also known as the "Travesty Wells:"
 - Started with 126 wells to be plugged, down to approximately 40 wells that need to be addressed.
 - Wells are prioritized and nearby wells are also plugged.
 - BLM will have to go back to Congress to get more money to plug the remaining wells.

- New operators:
 - Challenges in adapting to Alaska's cold environment and AOGCC's regulations.

COMMISSIONER FOERSTER pointed out that there are trade-offs regarding idle-well plugging. She noted that if AOGCC made Arco/BP plug all their Prudhoe Bay wells that were not being used 30 years ago, present day horizontal and coil-tubing-sidetrack technologies, and multi-laterals would not have had mother-well bores to take advantage of.

SENATOR COGHILL asked Commissioner Foerster to quantify the number of idle wells.

COMMISSIONER FOERSTER replied that there are 1,300 idle wells in Alaska.

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She addressed bankruptcy impact on plugging idle wells. She said fixes for plugging bankrupt wells include:

- Decrease idle wells via annual review with producers.
- Bonding regulations were passed last year to increase the bonding to help cover the cost of plug-and-abandon (P&A) wells:
 - Regulation change is sitting on the lieutenant governor's desk, but the lieutenant governor has been advised not to sign any regulation change for its possible impact on the administration's, "We're open for business" approach.
 - The regulation will certainly hurt the, "We're open for business" approach.
- Landowner needs to put assurances in place to protect themselves:
 - The best assurance the state can put into place is the ability to go back on the prior operator.

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She addressed "Likely issues of 2019" and referenced as follows:

- All the 2018 issues.
- Aggressive exploration season:
 - 12 Conoco wells,
 - 1 Eni extended reach well,
 - 1 Great Bear well,
 - 4 Oil Search wells.

- Conoco development work at Willow and Greater Moose's Tooth.
- Unanticipated crises and challenges.

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COMMISSIONER FOERSTER addressed "Offtake allowables for North Slope major gas sales" as follows:

- [Prudhoe Bay] (PBU) offtake: 3.6 [billion cubic feet per day] (BCF/D), including fuel usage:
 - CO2 utilization study;
 - Oil acceleration study.
- Point Thomson offtake:
 - 1.1 BCF/D, including fuel usage;
 - 5 years of pilot performance demonstrating full scale cycling not viable.
- Both offtakes were granted assuming a defined window of opportunity for [master gas system] (MGS).
- Oil losses will occur. "Later is better" and "Less is better."

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SENATOR COGHILL asked what the distance is between the pilot injection well and the recovery well.

COMMISSIONER SEAMOUNT estimated that the distance between wells is approximately four miles.

COMMISSIONER FOERSTER explained that the further apart the wells are the better the condensate-rich gas "sweep" is attained because injecting into well "radiates" rather than moving in a "straight line."

COMMISSIONER SEAMOUNT explained that geology plays a big part in injections.

COMMISSIONER FOERSTER summarized that oil losses will occur and "later is better."

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SENATOR GIESSEL asked what the pressures are at Point Thomson and the kind of equipment required for reinjecting.

COMMISSIONER FOERSTER replied that Point Thomson's pressure is around 10,000 pounds. To reinject the injection must push against the 10,000 pounds of pressure. She said the required

equipment is not common and there are only one or two other places in the world where compressors work to the capacity required at Point Thomson. She conceded that ExxonMobil is struggling to get the complicated injection equipment to perform at Point Thomson.

SENATOR GIESSEL asked about the off-take allowance that was under consideration for Point Thomson. She asked that Commissioner Foerster refresh the committee on the Point Thomson settlement. She noted that the lease went to litigation and there was a settlement that required Point Thomson to be brought into gas production at some point. She asked Commissioner Foerster to talk about the elements of the settlement that might have come into play pertaining to the off-take allowance.

COMMISSIONER FOERSTER answered that she did not consider the off-take allowance and referenced the regulations and statutes that the commission enforces.

COMMISSIONER SEAMOUNT suggested that Senator Giessel's question be directed to the Department of Natural Resources (DNR).

SENATOR COGHILL noted that ExxonMobil has been working at Point Thomson for a couple of years and noted that they "have some equipment." He asked to confirm that ExxonMobil's bore integrity has been pretty good.

COMMISSIONER FOERSTER replied that ExxonMobil has done a great job of being an operator. She noted that the wells are not cheap and not easy to drill.

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COMMISSIONER SEAMOUNT stated that Senator Coghill's question on the distance between the injector and producer is a good question and he will get back to the committee with an answer.

SENATOR COGHILL noted that the settlement must be taken into consideration as to whether the producers have been asked to do something that was practical or beyond practical.

COMMISSIONER SEAMOUNT replied that AOGCC is trying to do the same and added, "That's what the pilot project is all about."

COMMISSIONER FOERSTER noted that ExxonMobil's work in the pilot project included wells that were drilled that could be used no matter what ends up being the outcome. She added that the compressors ExxonMobil's is using are not cheap.

COMMISSIONER SEAMOUNT noted that the only place in the world that he has seen the pressures mentioned with injectors was at the Tengiz oil and gas field in Kazakhstan. He said the injection process is very complicated.

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He addressed "Alaska oil activity and production" regarding statistics on production, permitting, and numbers of wells drilled. He said he would conclude AOGCC's presentation on new development and discoveries, and possible impact on the commission's workload.

He addressed slide 11, "Alaska's average daily oil and natural gas liquids (NGL) production rate 1957-2018." He noted that the chart shows a decline from 2.2 million barrels of oil per day (BOPD) to 553,000 BOPD; however, recent activity may have stabilized production and the latest discoveries may increase production substantially.

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He addressed slide 12, "Alaska's statistics" as follows:

- Permits to drill since 1901: 9,302.
- Wells with completion dates: 8,614.
- Hydraulically fractured wells:
 - Number: 2,026;
 - Percent: 23.50.
- Oil and NGL production for November 2018, barrels per day: 553,670.
- Cumulative production totals since 1901:
 - Oil (barrels): 18,630,391,970;
 - NGL (barrels): 766,342,357;
 - Total (barrels): 19,396,734,327;
 - Gas (cubic ft): 111,273,536,534,000;
 - Includes re-injected and miscible injection gas.

He addressed slide 13, "Alaska's statistics, oil and NGL production, November 2016-2018. He summarized that there has been virtually no decline over the last two years. He said AOGCC predicts that production will increase, especially if producers explore the state's other basins.

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He addressed slide 14, "Alaska 2018: permits to drill approved by AOGCC" pie chart as follows:

- Producer-Oil, Arctic Slope: 105:
 - Note: Arctic Slope totals include wells and wellbores on state and private lands and in state waters within the Beaufort Sea;
- Service-Arctic Slope: 25;
- Producer-Oil, Cook Inlet: 22;
- Exploratory-Oil, Arctic Slope: 17;
- Producer-Gas, Cook Inlet: 2;
- Service-Cook Inlet: 2;
- Exploratory-Gas: Arctic Slope: 1;
- Exploratory-Oil: Cook Inlet: 1;
- Total: 175 wells drilled.

COMMISSIONER SEAMOUNT said 2019 will be an active exploration season.

CHAIR BIRCH asked if Doyon, Limited has been drilling in Interior Alaska.

COMMISSIONER FOERSTER answered no.

COMMISSIONER SEAMOUNT replied that Doyon is interested and noted that he would not be surprised if they do some drilling in the future. He said there is oil and gas potential in the basin that Doyon is exploring.

CHAIR BIRCH remarked that Doyon would be talking to AOGCC if they were interested in drilling.

COMMISSIONER FOERSTER replied that AOGCC has not heard from Doyon.

COMMISSIONER SEAMOUNT reiterated that he would not be surprised if AOGCC heard from Doyon.

He addressed slide 15, "Exploratory (wildcat/delineation) wells and well branches statewide, oil and gas: completed, suspended or abandoned, 2004-2018." He pointed out that ConocoPhillips has drilled most exploration wells. He said there is not much correlation between oil prices and exploratory drilling.

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He addressed slide 16, "Development and service wells and well branches statewide, oil and gas: completed, suspended or abandoned, 2003-2017." He said the graph shows that activity has

remained stable. He noted that oil production has gone up due to longer, horizontal wells and bigger fracturing jobs. He pointed out that ConocoPhillips is the "big driller" and BP runs a close second.

CHAIR BIRCH asked if AOGCC keeps track of rig counts.

COMMISSIONER SEAMOUNT answered that AOGCC keeps track of drill counts. He noted that oil and gas journals are inaccurate and misleading because they only count the wells that are being drilled at the time, not the wells that are moving from one location to another.

COMMISSIONER FOERSTER replied that AOGCC does not keep count of rigs that are "stacked," strictly what rigs are active.

COMMISSIONER SEAMOUNT said AOGCC can get the number. He noted that the number of rigs were down, but the production was holding.

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He addressed slide 17, "Workover activities, 2003-2017, statewide: conventional oil and gas only." He summarized that the graph shows that nothing stands out. Activity was shown to increase when the price of oil increased. He noted that "repairs" and "enhancements" were indicators of production. He explained that "repairs" indicated wells being put back into production and "enhancements" include perforating, acid jobs, and fracturing jobs. He said there were over 1,000 workovers in 2017. AOGCC spends a lot of time with workover applications.

He addressed slide 18, "Alaska oil and gas activity, AOGCC oversight, 1958-2018," and detailed as follows:

- Number of approved permits:
 - 1960: Swanson River, went up to 50 wells.
 - 1960-1970: Swanson River plus offshore platforms, over 100 well permits.
 - Trans-Alaska Pipeline: Up to over 300 oil wells.
 - Early 1980s: Oil boom crashed.
 - Permits rose when oil prices increased.
 - 1999 was the only correlation with oil prices, resulting in a drop in well activity.
 - Current activity: 175 wells permitted in 2018.
- Active wells:
 - Active well definition: One that AOGCC must spend money on to send an inspector on site.

- Number of "pools" that AOGCC has regulated over time:
 - 150 oil and gas pools.

COMMISSIONER FOERSTER said she defines "active well" as a well that is active, a well that is producing or injecting. She noted that Commissioner Seamount includes idle wells in his definition. She said she does see how a well can be both active and idle. She disclosed that 1,300 wells are currently idle.

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COMMISSIONER SEAMOUNT addressed slide 19, "Announced Alaska North Slope discoveries." He said there have been some huge announcements made for the following:

- Pikka;
- Smith Bay: could be well over 10 billion barrels;
- Moose's Tooth: currently has two pads and will be making about 100,000 barrels per day.
- Willow: has 300 million barrels reported.
- Great Bear: currently in risky exploration phase.

He addressed slide 20, "Major recent Brookian discoveries" that addressed the Smith Bay, Willow, and Pikka/Horseshoe discoveries. He said the total expected production per day is 420,000 barrels. He said if the Moose's Tooth discovery is added, the total is approximately 500,000 barrels per day. He said producers have said they will get Smith Bay and Pikka going by 2024 or 2025, a timeline target that he finds hard to believe.

He addressed slide 21, "Development timeline for North Slope oil fields" that shows discovery to regular production. He pointed out that the average time from discovery to regular production is nine and a half years. He noted that Smith Bay and Pikka are saying discovery to regular production will take five to six years.

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He addressed slide 22, "Cook Inlet exploration, exploration immaturity" as follows:

- Cook Inlet is similar in size to Lower 48 basins.
- Cook Inlet's 14,000 square mile area is the same as the San Juan Basin, located in New Mexico and Colorado.

- Cook Inlet has less than 400 exploratory wells and less than 1,400 total wells versus more than 28,000 wells in the San Juan Basin with more discoveries occurring.
- United States Geological Survey (USGS) has said that only two to four percent of the oil generated in Cook Inlet has ever been identified.
- Additional oil in Cook Inlet is in zones below the present producing zones and has migrated up. Only 53 wells have been drilled into the "pre-Tertiary" formation. He said the best potential is in the "Jurassic" formation. He opined that there could be another 140 billion barrels of oil in Cook Inlet.

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COMMISSIONER SEAMOUNT summarized that he got his start in the San Joaquin Basin of California in the 1970s which are oil fields discovered in 1900 where wells were down to one-half acre spacing. He said he came to Alaska and noted that due to technology, Prudhoe Bay's spacing was two miles. He revealed that with current technology, drilling is out five to seven miles and remarked that Prudhoe Bay could be developed with only five pads, a technological advancement that could have positive implications on developing the Arctic National Wildlife Refuge (ANWR).

SENATOR GIESSEL asked if AOGCC has jurisdiction over pipelines. She referenced a situation where ultra-cold temperatures caused gas in a pipeline to become hydrates.

COMMISSIONER SEAMOUNT answered no. He explained that AOGCC has jurisdiction over "waste" if something happens before the gas is metered and "everyone gets their fair share." He said afterwards the gas belongs to somebody and another department or entity has jurisdiction.

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SENATOR GIESSEL asked how often gas pipelines freezes up.

COMMISSIONER FOERSTER answered that she has never heard of gas pipelines freezing.

COMMISSIONER SEAMOUNT noted that he was aware of "gathering lines" and not "transmission lines" freezing up in Wyoming when temperatures reached 40 below.

COMMISSIONER FOERSTER queried why a freeze-up would occur when temperatures are a lot colder in Prudhoe Bay.

CHAIR BIRCH said many were looking forward to the lease sale in ANWR and the coastal plain. He said if all goes well with the lease sale in ANWR, what will AOGCC's role be.

COMMISSIONER FOERSTER answered that AOGCC has regulatory authority for all wells drilled within Alaska, whether on state land, private land, or federal land.

CHAIR BIRCH noted that Senator Reinbold was online during the presentation.

SENATOR REINBOLD thanked the commissioners for an excellent presentation.

CHAIR BIRCH thanked Commissioner Foerster and Commissioner Seamount for their presentation.

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There being no further business to come before the committee, Chair Birch adjourned the Senate Resources Standing Committee meeting at 4:52 p.m.