

**ALASKA STATE LEGISLATURE  
SENATE RESOURCES STANDING COMMITTEE**

February 1, 2013

3:30 p.m.

**MEMBERS PRESENT**

Senator Cathy Giessel, Chair  
Senator Fred Dyson, Vice Chair  
Senator Peter Micciche  
Senator Click Bishop  
Senator Hollis French - via teleconference  
Senator Anna Fairclough

**MEMBERS ABSENT**

Senator Lesil McGuire

**COMMITTEE CALENDAR**

PRESENTATION: PETROLEUM LEASING AND UNITIZATION

- HEARD

**PREVIOUS COMMITTEE ACTION**

No previous action to record

**WITNESS REGISTER**

BILL BARRON, Director  
Division of Oil and Gas  
Department of Natural Resources (DNR)  
Anchorage, Alaska

**POSITION STATEMENT:** Provided presentation on leasing and unitization in terms of land and resource management.

**ACTION NARRATIVE**

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**CHAIR CATHY GIESEL** called the Senate Resources Standing Committee meeting to order at 3:30 p.m. Present at the call to order were Senators Dyson, Bishop, Fairclough, and Chair Giessel.

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**SENATOR MICCICHE** joined the committee.

## Presentation: Petroleum Leasing and Unitization

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CHAIR GIESSEL invited Mr. Barron to testify on petroleum leasing and unitization.

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BILL BARRON, Director, Division of Oil and Gas, Department of Natural Resources (DNR), Anchorage, Alaska, said leasing and unitization is a fundamental piece of what the department does in terms of land and resource management.

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There are three primary management stages through the life of oil and gas exploration and development: Leasing (the oil and gas mineral rights of the state), the development phase through unitization, and the creation and management of resources through participating areas (PA).

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Leasing is the first step in the whole process. This is where the state grants exclusive rights to explore and develop the oil and gas minerals to private parties. The department has an ongoing and fairly robust five-year program of lease sales and publishes a book annually. They have three area-wide lease sales that are competitive bids. Sometimes the terms and conditions change, but typically they lease out on a tract by tract basis, the tracts being 3 miles by 3 miles. A subtle change happened last year when they decided to quarter section the primary shale area that hopefully would benefit the state.

The area-wide lease sales happen one each in spring and fall. The spring sale is for Cook Inlet and the Alaska Peninsula where the last several have been very robust, especially with Apache coming in and picking up a tremendous amount of acreage. New players like Hilcorp have also picked up some acreage.

The fall lease sale is in three primary areas bundled together into one sale: the North Slope, the North Slope Foothills and the Beaufort Sea.

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SENATOR DYSON asked if he could say something about the Alaska Peninsula sale.

MR. BARRON answered that lease sale happens every spring and there is very little interest from industry in them.

SENATOR DYSON asked if any seismic work had been done there.

MR. BARRON said if there has it's been limited.

SENATOR DYSON asked what makes him think people will bid on it.

MR. BARRON said the story he hears is the local community asked for that acreage to be put into a general lease sale. Then the state went through its best interest finding process and established the areas that would be available for sale and started the lease sale after that.

SENATOR DYSON said the feds had anticipated that would happen and asked what caused them to think that.

MR. BARRON said he had no idea. He continued explaining that the primary term is when the state expects companies to do exploration seismic and drilling activities to establish what kind of hydrocarbon potential is in the area. The primary North Slope area has lease terms of seven years with a minimum bid of \$5/acre and an annual rental rate of \$1/acre that elevates through time to no more than \$3/acre. In 2001-2004 the minimum bid went from \$5 to \$10. In 2005 the North Slope went to a 10-year term on the primary lease and back to a minimum \$5/acre bid. Soon after, depending on the geographic area, it went to seven-years or five-years and back up to \$10/acre.

In 2011, as part of the outreach program with the industry, the division asked from a lease sale perspective what the biggest problem was. They heard that the primary term is too short especially for the North Slope. So, they decided to try a 10-year lease with a \$10/acre rental for the first 7 years going up to \$250/acre after that in years 8, 9 and 10, the idea being that companies involved in oil and gas exploration do one thing very well and that is make good business calls. So they allowed them to make a business call. If they had done substantial work in that first seven years, the commissioner has the discretion to waive the higher rental rate. If they had not done sufficient work in the exploration primary phase, then they have a choice: to either relinquish the acreage and return it to the state where it would go back into the leasing program or they can pay the \$250/acre and retain that exclusive right.

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CHAIR GIESSEL asked what happened to folks in 2010 who had signed up for a 5 or 7 year lease term when they went to 10 years.

MR. BARRON answered the leases are contracts with the state and are no different than leasing an apartment where your neighbor rented for 10 years and you only rented for 5 years. They had observed that the short term leases were not allowing people enough time to do their exploration work and they were using the unitization process to try and expand their opportunities. But unitization is not about lease extension. A unitization without drilling is not good for the state and does not promote competition.

CHAIR GIESSEL asked what happened with Pt. Thomson.

MR. BARRON said that is a unit.

SENATOR MICCICHE asked if primary acreage goes from \$57,000/year for the first 7 years up to \$1.4 million/year for years 8, 9, and 10.

MR. BARRON answered yes.

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MR. BARRON explained that the department was trying to build a relationship that is business driven. They want wells drilled to prove oil and gas, because just seismic isn't good enough.

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SENATOR MICCICHE asked if an expired lease is available immediately for another party.

MR. BARRON answered that it is put in the next lease sale all of which are competitive sealed bids that are opened before the public.

SENATOR BISHOP asked when a lease is terminated if the lessee can bid for it again at the next sale.

MR. BARRON answered yes; it's an open bid and anyone can bid.

SENATOR BISHOP asked how much information he receives from an exploration company.

MR. BARRON answered that they get a lot of seismic and well data in the course of unitization, but most of it is confidential.

The AOGCC gets some data, too, but it is held in extreme confidence. Some companies also volunteer information and ask that it be kept confidential.

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SENATOR FRENCH was attending on line.

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MR. BARRON said a lease can be extended several ways; one is by unitization through a certification procedure done by the division when it receives enough information to certify that the lease can produce in paying quantities whether it is producing or not. Two other ways to extend a lease is through actual sustained production or through actively drilling a well. If a company is actively drilling a well at the time of exploration, they don't pull its lease.

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He explained that unitization is really just a mechanism to join contiguous leased tracts of land together to form a unit; this is done to protect the interests of all parties including the state. It ensures proper reservoir management and enhances recovery of the reserves. He explained that maybe 100 years ago the industry worked like this: if you did not have a unit and were competing side-by-side with a company in the same reservoir that would be deemed a competitive reservoir because the more you can produce the less your neighbor can produce. It is a really poor and inefficient way for ultimate recovery, because it doesn't encourage people to install enhanced oil recovery. It encourages rapid depletion and massive extraction without forethought.

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MR. BARRON said "unitization" as a concept was probably developed in west Texas and Oklahoma, the purpose being to conserve the natural resource, prevent waste, and to promote the activities of all parties. They look at certain things in statutes and regulations like the environmental cost and benefit of unitization and the geologic and engineering characteristics of the reservoir, then they establish the size of a unit based on that information. In that effort, they look at prior exploration and other relative facts and figures including mitigation measures.

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The operators have to demonstrate in their application that a trapping mechanism and reservoir has been defined and the only sure of defining a reservoir is with a bit.

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He explained that if part of a lease is associated with another reservoir, they work with companies to define the reservoir through geologic means - seismic, pressure testing, et cetera - and work with the other parties to establish what the whole reservoir looks like and then build a box around it that would be deemed as the unit boundaries.

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SENATOR BISHOP asked how this model would work for shale.

MR. BARRON answered that it really doesn't, because a single well can hold the lease in a conventional sandstone or carbonate reservoir. That is why the tracts are 3 miles by 3 miles and a single well can, in theory, drain the whole tract. Shale is a whole different issue; a single well in a shale zone will never deplete an entire lease. That is exactly why the division instituted quarter-sectioning the leases in the primary shale zone. One can own up to 500,000 un-unitized shale acres and someone could come in and put one well down in every tract and prove that well will flow, have it certified, and retain that tract to the exclusion of everyone else, and never be able to fully develop the oil or gas relative to the size of that tract. So unitization for shale really doesn't work. In fact, you could argue that every well is its own unit in shale, because shale wells drilled next to each other won't even see each other. He held up a chap stick whose diameter represented the "pour throat" of shale or the area available for oil to flow through, and remarked that a conventional oil play is 10 yards in diameter. That is why unitization in shale becomes very complicated.

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He said that units can expand and contract over time explaining that sometimes the division gives a company "latitude of uncertainty" recognizing that nothing is absolutely known for sure at the time of establishing a unit. If in time that land, through geologic and engineering principles can be shown to have no part of the reservoir, that piece can be extracted, for example, or be put into a different unit.

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He said unitization is not for conducting seismic work. If you have any lease you can conduct seismic activities anywhere in the state, especially on state lands. All you have to do is get permission. You can conduct seismic operations on private inholdings as long as you get the landowner's permission. You don't need a unit to shoot seismic or to conduct activities lease by lease. And unitization doesn't work really well for single owners, because it is a contract and it is for the protection of all parties to it.

CHAIR GIESSEL asked what the benefit to having a lease is.

MR. BARRON explained that you're trying to show if a single well holds a lease, but if the lease next door doesn't have a well under production that could be lost. And that is why you would form a unit or write the agreement - between the state and the party - in such a way that says we believe this is all part of a common area for unitization.

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He said the unit expires after five years unless there is sustained production, a participating area (PA) is formed, or it has a certified well.

SENATOR MICCICHE asked if frequent lawsuits have been filed accusing a neighboring unit of extracting from their reservoir.

MR. BARRON answered no and that is primarily because of unitization, but historically the Lower 48 had some significant lawsuits over that issue. The end result of unitization for the state is the robust development of enhanced oil recovery (EOR) and the ability for companies not to have to worry about somebody drilling and pulling product away and it works well here.

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SENATOR DYSON asked him to explain when a field is unitized how the oil and gas throughout the area is proportioned so everybody profits equally from doing the EOR.

MR. BARRON said the point of unitization is where the state has an opportunity to flex its muscle to encourage work programs, advanced techniques and new drilling. In some cases, they have issued a unit when a well has not been drilled to a company with a lease that is about to expire (or not) who thinks it's got something worth protecting the acreage - with the requirement of a well within a certain timeframe. That gets bonded so if they

don't drill it they lose the bond and the unit expires. But most importantly the state wants the well.

Once there is a unit, the state has the opportunity to "default and cure," when it is about to expire if the company had not satisfied the terms of the unit but was diligently trying to do so. The unit could be extended for one year or a period of time with the understanding that they have to drill their well. If they don't drill it, the unit expires along with the leases and it comes back to the state for lease sale again.

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Turning to participating areas (PA), Mr. Baron said to think of three-dimensionality and sustained production. There is a separate PA for each reservoir and it is a subset of a unit. All PAs create allocation factors that are determined by the companies in very intense negotiations; some are based on the acres associated with that geologic horizon; some are based on oil in place, some are based on recoverable reserves, all of those factors or any combination. It's all about making sure each company does its very best to protect their company in terms of their allocation factors, and unless redetermination points are indicated in the unit agreement, those tract factors are set. You pay your working interest, your costs and liabilities on that, and get your revenue stream. A PA can be expanded as information becomes known, which can be fun to watch.

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MR. BARRON said PAs have to be producing. He explained that you head for the "basement" with your first well. You drill through what is like a "hefty bag that is full of balloons" and produce from the bottom up (primarily because it's easier from an operational aspect because of reservoir pressure hydraulics and well bore construction). You know the balloons are there, but you can't pull a PA because you're not producing from them. And if you come up the hole later on or are subsequently drilling new wells and hit that balloon again and begin to produce it, then you establish the PA. Again, the PAs can be expanded and contracted based upon what is contributing in paying quantities to the area.

SENATOR MICCICHE asked if "capable of producing" would be in a PA.

MR. BARRON explained that "capable of producing" is the key concept. A reservoir could have areas that don't have wells

drilled in them, but that area is still being drained by the producing wells, so it would still be within the PA.

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He said that right now the North Slope has 18 units and 38 PAs, the initial PA (IPA) having been established in Prudhoe Bay in 1977. He had an exhibit that showed when PAs were created in the four primary producing horizon layers that are all part of the total reserves at Prudhoe Bay.

CHAIR GIESSEL asked how each pocket they drill into is classified.

MR. BARRON replied, especially with coil drilling or high angle, horizontal drilling you are trying to increase the contact of a well bore to the sand base. He explained further:

They are trying to thread the needle through a thin zone to decrease pressure drop to allow more product to come through with less energy required. So, they're not necessarily hitting different pockets; they're hitting the same pocket in a horizontal manner.

Now if they're drilling and drilling directionally and they hit all of these, they probably aren't producing them all in the same well bore. Because they have to account for the fluid coming from each one of the PAs uniquely, relative to Senator Dyson's question how do you account for each one of the barrels, it has to be allocated to a PA. So, unless they have mechanical techniques or down-hole logging or down-hole metering to identify at what depth what portion of the fluid is coming from that zone, then they probably aren't producing more than one zone or PA from the well bore. Now you can have multiple well bores from a single well. I think Conoco has just announced that they are going to have an 8-legged monster out there. They're going to have 8 wells from a single well bore. That is just the beauty of fantastic drilling.

He continued that some PAs were originally established with a technology like coil tube drilling that can extract hydrocarbons from much thinner zones at the edge of the field, which would now beg the question of whether the PA can be expanded. An extension may actually bring a new player in, in theory, and he works with companies on a fairly routine basis to help them account for everyone's rights because of this.

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MR. BARRON said the state manages an effective area-wide lease sale program, the unitization process and reservoirs through the PA level contributions. They do all of it to encourage continued exploration, development and prudent sustained production.

SENATOR BISHOP asked if he knew of any other state that employs its own exploratory drill rig.

MR. BARRON responded that it wouldn't surprise him if another state would do that, but Alaska is unique in this case because most states don't own the mineral rights. In most other states, private citizens own the mineral rights. In that regard, Alaska would be one of the few states to have that opportunity to do its own exploration work.

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SENATOR FRENCH commented that the Prudhoe Bay slide was new from last year and thanked Mr. Barron for it.

MR. BARRON acknowledged that by thanking him.

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CHAIR GIESSEL found no further questions and adjourned the Senate Resources Committee meeting at 4:32 p.m.