

# Alaska Oil and Gas Association

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TESTIMONY BY THE  
ALASKA OIL AND GAS ASSOCIATION  
TO THE SENATE JUDICIARY COMMITTEE  
REGARDING SB 2001 & CSSB 2001(RES)  
ON THE TOPIC OF “GROSS vs. NET”

October 31, 2007

Mr. Chairman and Members of the Committee:

For the record, my name is Thomas K. Williams. I am Senior Royalty & Tax Counsel for BP Exploration (Alaska) Inc. and a former tax administrator in the Alaska Department of Revenue (“DOR”). I am appearing before you today to testify in my role as chair of the AOGA Tax Committee.

My present testimony pertains to the topic of “Gross vs. Net” as scheduled for consideration today.

Just to make sure AOGA understands the topic correctly, we take “gross” as referring to a production tax that is levied on the “gross value at the point of production” as defined in AS 43.55.900(12). The prior ELF-based tax was such a “gross” tax. We further understand “net” to refer to a production tax levied on the value that remains after subtracting the operating and capital costs for the oil and gas operation from the “gross value at the point of production.” The present PPT is an example of a “net” tax, with “lease expenditures” as defined in AS 43.55.165 being the costs that are deducted from the “gross value” to get the taxable “production tax value.” If you will, the “production tax value” under PPT is equivalent to a value at the rockface where the oil or gas flows into a well and is physically severed from the reservoir.

The fundamental question in the “Gross vs. Net” issue is not about which tax could generate more tax revenue for the State — if one tax will generate \$X of tax revenues, it is always possible to find the rate for the other tax that also generates \$X of tax revenues. Instead, the fundamental issue about a “gross” tax versus a “net” one should be how realistic you want your production tax to be in terms of its effects on the real world.

The universal reality about oil and gas is they are non-renewable. In other words, as we produce them, there is no new oil or gas being created to replace what we’re taking out of the ground. As a consequence of this, the more oil and gas that we remove from a reservoir and produce, the more difficult and the more expensive it becomes to produce the next barrel of oil or

cubic foot of gas from what remains in that reservoir.

There is a further and related reality for the huge resources of viscous and heavy oil that are known to exist on the North Slope. Because of the physical characteristics of the oil itself and of the reservoirs wherein it is found, the oil is physically very difficult to produce, starting with the very first barrel. Viscous oil — by which we mean oil that flows much more slowly than conventional oil, but can still be pushed through the reservoir rock into the wells by injecting water to push it — is primarily found in the West Sak formation. The West Sak rock is crumbly, and a lot of fine particles of rock are entrained with the oil as it flows into the well bores, turning them into an oily sludge. This sludge has to be removed from the oil at the surface, and then it has to be disposed of. Remember that once the oily sludge is removed from the oil, it becomes “hazardous” material for purpose of health, safety and environmental laws, so it must be handled and disposed of with the greatest care. Heavy oil — that is, oil that is too thick to be pushed through the reservoir rock by water injection — is found in the Ugnu formation, which is not far below the deep permafrost. One promising technology for producing Ugnu oil would involve getting the reservoir rock to flow like a stream of sand into the well, carrying the oil with it, and then separating the oil from that sand-like rock at the surface. The same health, safety and environmental concerns for “hazardous” material would apply to the handling and disposal of the “sand” — which translates into high production costs even as production starts.

Suppose the State rejects the validity of these facts, or doesn’t want to take them into consideration in designing its production tax. In that event, the State might levy a flat-rate tax of *X* cents per barrel or per thousand cubic feet. This would be the ultimate in simplicity to administer, with nothing to audit,<sup>1</sup> and taxpayers should be able to report and pay the tax with 100% accuracy when the tax returns and payments come due. Such a tax would also be much easier to forecast since it would depend on only one variable — namely, the volume being produced.

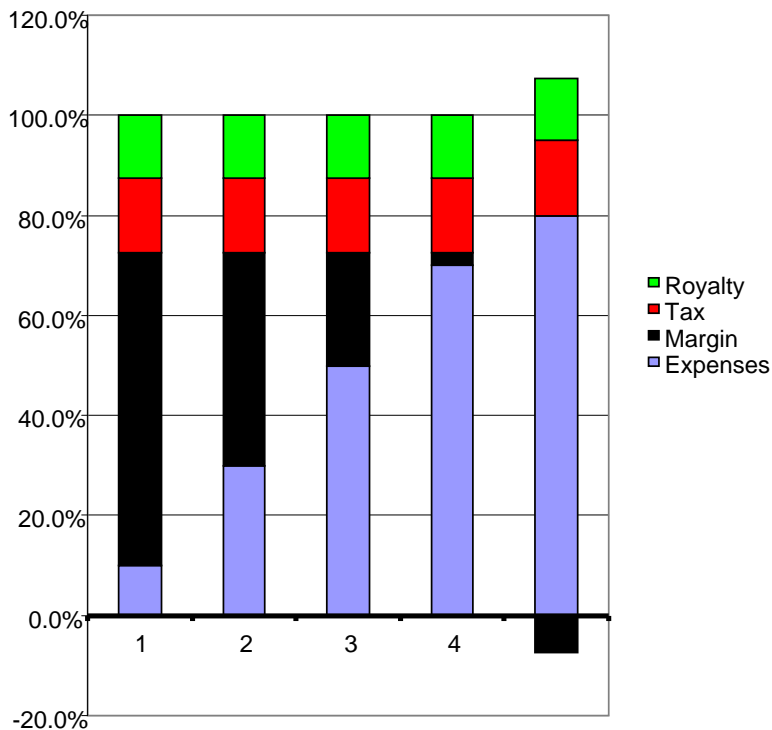
But we are not considering such a tax,<sup>2</sup> but ones imposed on the “gross” or “net” value. Below is a graph illustrating the production economics for a hypothetical field with a tax on “gross value” over the life of a “conventional” oil field. The five multi-colored vertical bars on this graph depict the economics of the field in five stages in its life. Each full bar represents the “gross value” of the oil being produced. The top (green) segment in each bar represents the State’s one-eighth royalty on that oil production. The next segment down (red) represents a flat 15% “net” tax. The bottom segments (blue) in bars 1 – 4 and the second-to-bottom one in bar 5 represent the operating costs of the field. The black segment in each bar represents what’s left for the producer — the “net” operating margin.

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<sup>1</sup> The State would want to confirm that the meters to measure the volume of oil or gas being produced are accurate. The AOGCC already does this by witnessing proving-tests of the meters’ accuracy. If DOR wanted to, it could send one of its own employees to witness these tests too, but this would not be an “audit” in any conventional sense of that term.

<sup>2</sup> The economic effects of a flat *X* cents-a-barrel tax would resemble those about to be shown for a “gross” tax.

**Effect of a “Gross Value” Tax as a Field Ages**



This graph illustrates the increase in the production costs per barrel that occurs as a field ages and its original reserves in place are increasingly depleted. Barring a catastrophic event that prematurely forces it to shut down permanently,<sup>3</sup> a field continues to produce until it starts losing money. The latter situation is illustrated in the graph by bar 5, where the producer’s margin is depicted below the zero-percent line as a negative number.

Given the enormous challenge that Alaska faces from the decline in North Slope oil production, what is of greater concern is the effects on investment as a field’s operating margin is increasingly squeezed by rising production costs per barrel. While the operating margin for the rest of the field is usually not a significant factor in the economic analysis of a new investment, the graph above can also be viewed as an illustration of the general deterioration in the quality of new investments available as a field ages. For example, drilling a hundred or so in-fill wells last year added about 70,000 barrels a day to North Slope production from what it otherwise would have been. But drilling a hundred such wells next year might only add 60,000 barrels a day, and the year after that only 50,000. As the margins for incremental investments become squeezed as the quality of available investments in a field gradually deteriorates, fewer and fewer investment opportunities will remain that are economically viable.

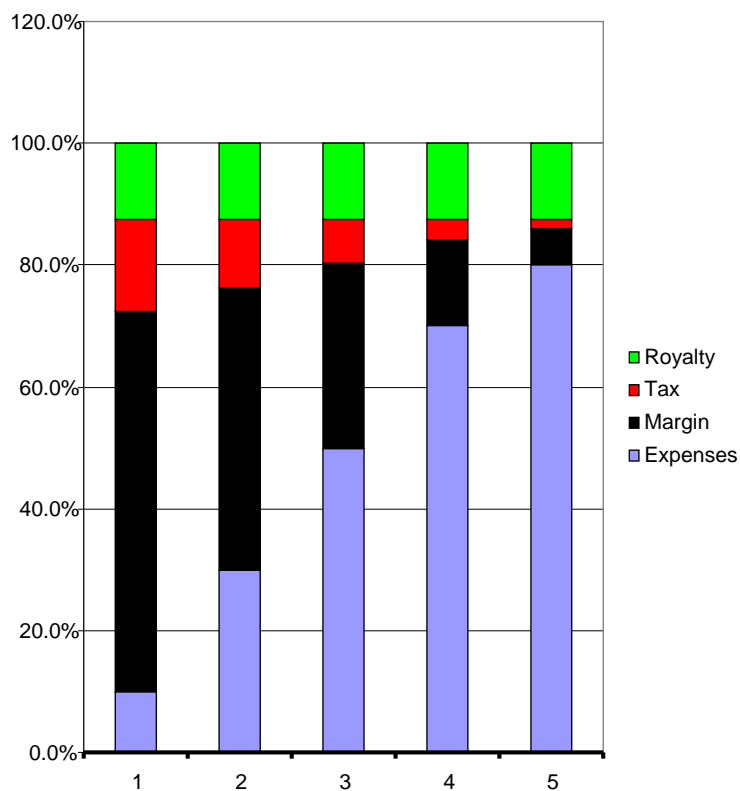
Thus, if all the North Slope investment opportunities in your portfolio resemble bar 1 in

<sup>3</sup> This has happened in Alaska. The first commercially producing oil field here, the Katalla field near the town of the same name, shut down permanently after a fire burned down its nearby refinery on Christmas Eve of 1933.

the graph, you will probably go forward with practically all the investments that you can. Bar 1 illustrates a situation not unlike Prudhoe Bay’s when it first came into production and ramped up to 1.5 million barrels a day. As the opportunities available to you look increasingly like bar 2, you would still take most of them, but probably not all. However, as your opportunity portfolio gradually starts to resemble bar 3, you would clearly start having fewer and fewer commercially viable opportunities. And if your opportunities generally look like bar 4, perhaps none of them will be made. Certainly you won’t be investing if they all look like bar 5.

Contrast this situation under a “gross” tax with what happens under a tax on “net value” tax like PPT. Here is a graph showing the same hypothetical field as before, at the same five

**Effect of a “Net Value” Tax as a Field Ages**



stages of rising production costs during its life. The “net” tax, by design, starts out in bar 1 being equal to what the “gross tax” was in bar 1 of the earlier example. But, as the field ages and you move from left to right across this graph, each bar has a smaller tax segment (red) than the bar before. Even at bar 5 representing a very late stage in the field’s life, there is still a positive operating margin, whereas the margin was a loss in bar 5 with the “gross” tax. This means that even at the bar-5 stage of its life, this hypothetical field is still operating economically. This shows that, if all other things are equal, a “net” tax allows production to continue longer than it would under a “gross” tax.

Further, if — as we did with the earlier graph — you view this one as illustrating the gradual deterioration of the portfolio of investment opportunities over a field’s life, you can see that, once again, if your investment opportunities resemble bar 1, you will probably try to make as many investments as you can. But in each succeeding column to the right, the portfolio is better than it was for the same bar in the earlier graph because of the greater margins that you anticipate to get from your investments. And if you have a better portfolio of opportunities, you are likely to make more investments at each stage of the field’s life than you would have made at the comparable stage under the “gross” tax.

The decline of North Slope is the greatest challenge facing our future and our children’s future as Alaskans. The only way to slow the decline and soften its impacts on the future is to make investments to produce more oil. As we have just shown, a “net” tax will result in more investments to produce oil than a “gross” tax will. That is the reality Alaska faces.

This is not the first Legislature to grapple with this reality, and you won’t be the last. As an industry, all we can do in this process is to explain what this reality is and what the real-world effects promise to be from the taxes and policies Alaska may choose to adopt. That choice is yours. Whatever it is, we will comply with it, we will continue to do business here, and we will continue to strive to unlock the great potential that Alaska still has before it. But we know that one choice will allow our industry to do more than the other will. We hope it is the one to be chosen.

Thank you for giving AOGA this opportunity to testify.