

ELF

TRANSCRIPT OF PRESENTATION ON ELF
given by Gregg Erickson
TAX POLICY COMMITTEE MEETING - September 11, 1986

TAPE 2, SIDE 1, COUNTER #238

The ELF was established in 1977 and as Mr. Monkman told you, the ELF is a tax break. The purpose of the ELF as it was established in 1977 was to reduce the tax rate. Oil producers like the ELF. Any proposal to [increase] the ELF is [not] going to win favor with the oil producers and give them more money, allow them to keep more of the proceeds of the production of oil than they keep now.

The ELF can reduce the tax rate by a lot or it can reduce the tax rate by a little depending on one major factor. And that is the average per well productivity. If the average well in a field produces 300 B per day, that field will pay a lower tax rate under the ELF, other things being equal, than if the average per well productivity in the field is 1000 B per day. The average per well productivity is always the major factor in establishing the ELF and it needs to be kept in mind. We'll be coming back to that again later.

The ELF is always a number, and the number is always between zero and one. If you like, you can think of the ELF as a percentage that's applied to the regular nominal percentage tax rate. That's another important concept.... Right now, Alaska has a nominal percentage severance tax rate of 15% for some fields and 12.25% for some fields, and some fields change around from 15 to 12.25% because of amendments to the severance tax law that were adopted in 1981 and we'll talk about those later. That nominal tax rate gets reduced by the ELF by multiplication of this number (between zero and one, remember) times the nominal percentage rate. So, if the ELF is .5 (one-half) then the nominal tax rate is reduced by a half. So, [if] the ELF is .5 and our nominal percentage rate is 15%, the effective percentage rate is half of 15%, or 7.5%. Oil companies like the ELF, it reduces their tax rate.

I think that we can understand how this works best now by taking you to the never-never land of charts and graphs.(*). I know that it's a hard thing for some people to grasp the kind of geometric concepts we are going to be dealing with, so, Mr. Chairman, if it's alright with you, I'd be appreciative if people would interrupt me and say that they don't understand a particular concept that I'm trying to get across.

This is a picture of the Economic Limit Factor. Start out by looking at the two axes here, the two lines. The lower axis right here is...daily output per well. [It] starts out here at 50, but you can imagine it going even further down here, to zero. That means 50 B of oil per day, per well. It goes way on up here to 2500, 2800 B per day per well. The other axis on this chart is the ELF. And as I told you before, if you recall, it's a number between zero and one. [Y]ou see those numbers here, starting at 0 at the bottom, .5 in the middle and 1 at the top. If you have an oil field and the ELF is 1.0, you get no tax reduction because your nominal tax rate is multiplied times 1 which means it's not changed at all. If your ELF is .5, it's multiplied by one-half, it means you pay half of the nominal tax rate. If your ELF is 0, you pay no tax at all. Oil companies like the ELF.

You notice that fields have different average daily production, some fields have very high productivity in comparison to others. Prudhoe Bay field has, or had, because this graph was originally made about nine months ago, an average

(* Refer to charts attached to transcript.)

daily productivity as calculated for the ELF of around 2500 B per day per well. Milne Point, on the other hand, has a lower productivity and Kuparuk has a lower productivity still. If we applied the ELF in exactly the same manner to Prudhoe Bay, to Milne Point, and Kuparuk, it affects them differently. Prudhoe Bay, because it has the highest productivity, gets the least tax break. Kuparuk, because it has the lowest per well productivity, gets the biggest tax break from the ELF. And if we had a field down in this region, it would get an even bigger tax break from the ELF.

Now we say that the ELF is a function. [T]hat means it depends on the daily output per well. That means that if you know the daily output per well you can, or at least you have been able to in the past, determine what the ELF is going to be, what number between zero and one gets multiplied times that nominal tax rate to produce the effective tax rate, which is what Mr. Nelson and his oil company people are really concerned about, the effective tax rate. And it's really what the State of Alaska is concerned about too. In terms of all the factors that we're concerned about on severance taxes, it's the effective rate that people have to pay that makes the difference, not whether the nominal rate is 15% or 30% or 2%.

Now, you'll notice that this curve has a shape that puts every point out here as we move to the right along this lower axis, we also move at every point up on the fractions of the ELF axis. Except for this region down here at the bottom, we'll be coming back to this as we calculate the ELF, but that region is the economic limit region.

The framers of the legislation in 1977, that christened the ELF, that created the ELF, decided that they wanted to insure that fields of relatively low productivity such as they expected to develop among the Cook Inlet fields at that time, would not be forced to shut down before the cost of [operating] the fields exceeded the value of the oil that was being produced. And there was a problem that Milton Lipton and many others spoke to the Legislature about and they called it the premature shut-down effect. If you had too high a tax burden at these low productivity, and presumably low profitability fields,...those fields would shut down, even though they could continue to make profits if the taxes were reduced and continue to make, at least if not profits, at least enough money to bear their operating costs and to keep the jobs and keep the economic activity represented by those fields. Economist and experts and business people alike agreed that it didn't make much sense to shut a field down before the actual cost of production exceeded the value of the oil. Taxes, and royalties too, were dead weight that had to be carried by the production of those fields and so this device was created to, at least as far as the severance tax is concerned, eliminate that dead weight drag on those fields that might otherwise shut [them] down.

We'll come back to that concept so it's not necessary that everybody grasp that in its entirety. But, I'd like to stop right now while we've got this graph in front of us and ask any member of the committee, with your permission, Mr. Chairman, if they have any questions or if there's anything I've covered so far that doesn't compute.

COUNTER #377

(QUESTION from Sen. Eliason: Just a general question, the lower level of production, there, and in fact what they're paying is only 7½% or is it the 15%, is that what we're saying.)

We're saying that Prudhoe Bay, under these assumptions, which are a little bit out of date right now, is paying 83% of, in the case of Prudhoe Bay, 15%. And Tom Chester, our expert, or maybe Mr. Nelson who probably knows a lot about Prudhoe Bay too, can give you the exact number.

(QUESTION from Sen. Eliason: The question of course, or the point was, in other words, that's the 7½%, that low production field is paying 7½% rather than the 15.)

If the nominal rate on Kuparuk was 15% that would be true. However, the nominal rate on Kuparuk is, if I am correct, 12.25%. [They're] paying half of that, that's correct.

(COMMENT from George Nelson: I want to make one correction because in Prudhoe Bay we're paying, based on one, 15% simply because of the fact that for the first ten years, by the law, the factor cannot, if it calculates out above .7, it's always going to be 1. So it's July 1987 before Prudhoe Bay can really use ELF to the advantage of reducing that percent.)

Mr. Nelson is absolutely correct. The reason, and I'm sorry I gave the misrepresentation if I did, that Prudhoe Bay's actual tax rate was reflected by this calculation, because as he says, there's a special exception in the law for Prudhoe Bay which was established in the 1981 tax amendments. But, the ELF by itself works this way, and if the ELF applies, which it does not right now to Prudhoe Bay, Prudhoe Bay would be paying 83% of whatever its nominal rate would be.

(QUESTION from Rep. Grussendorf: The ELF is based on the output per well, or site. What are advantages or disadvantages if we went by field?)

The output per well was chosen, it's my opinion anyhow, that in 1977, it was chosen by the legislature as the factor to determine the ELF because they believed that that was the most readily measurable indicator of field profitability and they wanted to have lower taxes for fields that had lower profits and higher taxes for fields that had a higher profit. But they wanted to retain the concept of a severance tax, as Mr. Monkman mentioned to you. They didn't want to create an income tax here and call it a severance tax, although, they in effect got a little bit close to that perhaps at times.

They chose this one factor recognizing, I think, that there were a lot of other factors that affect profits as well. And for example, we have here Kuparuk, which may well be a more profitable field than Milne Point, and yet the Milne Point has a very small number of relatively high productivity wells, or at least was anticipated to have that situation. And Kuparuk has a relatively larger number of lower productivity wells. As a consequence, Kuparuk gets a bigger tax break than Milne Point. That shows in effect, the arbitrariness, if you will, of just using daily output per well as the indicator of relative profitability. Because if the situation I just described is true, if Kuparuk is a more profitable field than Milne Point, then this ELF factor has not produced the results that I think the framers of the legislation in 1977 wanted to produce. And it might well be that that problem is a consequence of the failure of this ELF factor to reflect total field size. [T]here are a number of factors, indeed, besides daily output per well and total field size, that could be taken account of in an ELF kind of calculation. And the framers chose daily output per well.

(QUESTION from Rep. Sund: How is the curve generated?)

We're going to take you all through that, in excruciating detail, I'm afraid.

(QUESTION from Sen. Eliason: Could also the ELF be construed as an incentive to put more wells in a field?)

Indeed, it could be. However, there are technical provisions in the law which say that you really don't look at number of wells, you look at the number of days that a well operates multiplied. So, it's really well days that are used to try to prevent the incentive, or eliminate any incentive for gold-plating or over-drilling a field. Now, I don't know that any studies have been made to indicate whether or not there is any residual incentive or not. My

suspicion is that its minor if it is. You'll see those technical provisions when we go through the actual translation of the ELF which is coming next.

(QUESTION from Bart Garber: On your graph, the figures on the bottom line, those are constants for the formula, they don't ever change?)

The figures on the bottom line change for every field, from day to day.

(QUESTION from Bart Garber: No, I understand that, what I'm saying is as far as the formula itself goes, to determine the ELF rate, the number of barrels pumped per well don't change?)

[I don't] know if I understand your question correctly. Let me rephrase it and tell me if I'm getting back to you. Does a well this year pumping at 1300/bbl per day get exactly the same ELF this year as it will five years from now if the law doesn't change?

(QUESTION from Bart Garber: No, that's not what I meant. My question is are those figures constant there. Will you always use those figures. In other words, if a well is pumping at 1300/bbl daily output per day, I'm not saying will that well remain constant, I'm saying will that figure remain constant at wherever you're at on ELF?)

Like at .7. If you'd asked me that question last year, or 13-14 months ago, I would have said yes, absolutely. But, I would have been wrong because, as Mr. Monkman mentioned, there is a provision in the law which [was never] really thought [much about], to change this production-at-the-economic-limit number. You'll see how that enters into it later on. And it's nobody's fault but my own that I would have misanswered your question, but I think there were a lot of people who would have made the same mistake a year and a half ago.

(QUESTION from Gordon Harrison: I see a question, Gregg, to follow up on, Sen. Eliason's question about the number of wells. Is well spacing regulated, the number of wells that is, by the Oil and Gas Conservation Commission?)

Yes it is. Indeed, the Alaska Oil and Gas Conservation Commission establishes regulations and when the oil companies wish to change the average spacing, they need to get permission. However, the Commission grants or withholds that permission based on generally a reference to engineering practice rather than economic analysis. Or at least that is to my understanding.

COUNTER #523

(QUESTION from Rep. Grussendorf: Gregg, that was the concept of the formula?)

We go from the general, and that can be called general, to the formula itself. Now folks, don't automatically assume that you can't figure this out. This is the formula, the ELF here equals this mathematical construction. We're going to take you through this mathematical construction and it's not nearly as complicated as it seems. The only thing that you may find unfamiliar, and I think most of you will have had some familiarity with it, is the use of the exponent. This little 'exp' in the formula means that the expression following it is, taken together, an exponent. If you recall what any...exponent says, you raise the number to a power, and if the exponent is two, that means you multiply the number by itself. So, four squared ([a four] with a little two above it) means four times four, and that's all we're doing here, but a little more complex than that because we use fractional exponents. But, that's the principle.

The formula has in it abbreviations because if you wrote the whole thing out it would just be too long. And one of those abbreviations, the first one,... ELF,... is an abbreviation [that] stands for Economic Limit Factor. The second abbreviation is PEL. It stands for Production at the Economic Limit. Now you recall the graph we showed you just a moment ago, had a zero tax rate at [an] average daily per well production of from zero to 300 B. The concept

behind that was that it would probably take about, it's a real rough and arbitrary kind of number, but nevertheless, take about 300 B a day for an average well in the average field to make its expenses. Now there's all sorts of things that vary. [O]bviously the cost of the well can vary enormously. [A]s we've discovered, the amount of money you get from the oil can vary enormously, and all these affect how many barrels you have to produce to just cover your operating expenses. Incidentally, the operating expenses in the statute were defined very, very narrowly. But, as a rough approximation...the law says you will take 300 B unless a showing is made otherwise. And up to now, everyone has calculated their ELF using 300 B, so we use it here today in our calculation. [I]t's defined in the law as times the number of wells and times the number of days the well is operating, actually defined as well days. So that the production at the economic limit for this month for this hypothetical field which is similar to Prudhoe Bay,...would be 4,869,000 B. The concept there is that if the Prudhoe Bay owners could get 4,869,000 barrels [per month], they would at least make their expenses. So we plug that number, 4,869,000, into the formula at this point, and at the bottom down here....

The second factor in the formula is the total production for the field for the month. Since we're talking about 300 B per day, and yet the tax gets paid on a monthly basis, we have to calculate in the total number of barrels in the field per the whole month. And that's just simply the monthly production, but we've also shown it here as the result of multiplying the average number of operating wells during the month times the number of days of production for the month times the average daily production per well. And in the example here, we show 541 wells, assuming each of them operated for 30 days, and the average per well productivity was 2,477 B per well, that means they actually produced forty million barrels in that month. So, they actually produced, if this example is correct, roughly 20-25 times as much oil as is necessary under this very rough calculation to meet their operating expenses that we calculated up here in this calculation.... Remember this may not actually be enough to meet their operating expenses, or maybe much more. [I]t's what the statute says you use, and I'm explaining not anything that's in the statute when I say operating expenses, but the concept. Well, actually it is in the statute elsewhere, but it's the concept here that we're talking about.

Then we have to plug in the number of well days in the exponent, and that's calculated simply as the number of operating wells during the month times the number of days each well operates. For example, in our case here,...541 wells [times] thirty days gives us [about] 16,000 well days.

Now we come to the calculation. But let me stop right here and talk about these definitions.... Does anybody have anything that they don't understand about these definitions so far?

END OF TAPE 2, SIDE 1, COUNTER #638

TAPE 2, SIDE 2, COUNTER #001

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...show us that it should be more. Up to now, it has been 300 B a day because the operators have either not come in, or if they have, have not satisfied the requirements that they satisfy.

(QUESTION from Sen. Abood: Where do the numbers (tape unintelligible) to break even?)

Three hundred. It's in the statute itself. It says "it shall be presumed to be 300/bbl per day per well, unless..." etc.

(QUESTION from Rep. Martin: Is it possible to look at this formula as a disincentive for oil production. To me, the more they produce, the more tax burden that they have. In a way, it may be worthwhile for production companies

to say let's keep it at a certain level, and therefore we know that our tax factor will be decreased.)

That's entirely possible. The formula is based, however, on the assumption that these more productive fields are more profitable. Now if that assumption doesn't hold or the higher profits are not more than enough to counterbalance the higher taxes, then your supposition could be correct.

(QUESTION from Rep. Martin: Especially at the lower price market, I can see where they want to produce as much as they want at the high prices, because they get more and more percentage of the profit. But in this flexibility we have now, what's to say that a company won't say hey, now it's our turn to pay less taxes and get more profit at the lower price market?)

Well, if I was an oil company, I [c]ould certainly say that.

Now, we have to go and plug these numbers in where...these acronyms [were]. Let's go back up and look at the formula again one more time.

* * * *

[There are] two parts to the ELF formula: the exponent, which is everything within these parentheses starting here and going over to here, and the inverse function, which is everything within these parentheses starting here and going over to here.

In calculating, let's go through the inverse function first. We plug in the PEL right here, the Production at the Economic Limit, which we calculated up here, and that's 4,800,000 some barrels. We plug in the Total Production here, and that's 40 million, and we divide 40 million into 4,800,000. Now, 4,800,000 is a lot smaller number than 40 million, so the result is less than 1. It's a fraction and in this case it's .12, a little over 1/10th. After we make this division, we plug that number in right there.

Now the formula says that you take that little fraction and subtract it from 1. So we do that here, and we get the result of .8789. Now if there was no exponent, that would be the ELF. And indeed, as you will see, as we go back over the history of the 1977 session, that as originally proposed...was all there was to the ELF, was just that calculation we just made. And if that had been the case, and the ELF applied to this particular field, then the nominal tax rate would be multiplied times .8789 to produce the effective tax rate. The effective tax rate would be 88 percent, roughly, [of] the nominal rate. But for reasons that we'll come back to later, the exponent got added.

The exponent is calculated by a constant here, which is 460 (that's a dimensionless constant, it's in the formula, it's in the statute, it's plugged into anything you do with the ELF under this current law) times the number of well days, and that's 16,230, so we plug that in right there, times the PEL, which we calculated up here as some 4,800,000. We can multiply or divide these in any order we want. And [when] we do that,...divide the 16,000 by the formula, and you get a very small number, and you multiply it by 460, it gets large enough so it's always generally over 1. And the results here, if you'd want to take a calculator and do it, multiply 460 times 16,000, and divide the results by some 4,800,000, you get this number. Let me stop right there and see if people have followed me so far.

COUNTER #59

(QUESTION from Rep. Sund: Where does the 460 come in and what's the theory behind it?)

I'd like to defer that until we get into the discussions in the free conference committee in 1977, because I think that's the easiest place to bring that in, but I'll tell you right now that it was a means of...changing the shape of this curve, and it was a means basically of pushing this curve this way. We'll get back to that.

So we've got now this inverse function which has been reduced down to .87, and if it wasn't for the exponent, that would be the ELF, and we've got this exponent. Now normally, this exponent is written just a little bit above the number to which it applies, but because the exponent is so large, we use this different notation, this 'exp'. And if you look in the statute, 43.55, you will find that formula just exactly as we've written it here. The number comes out to 1.5 and probably most of you are not familiar with raising a number to a fractional power, but you can think of it like this. Suppose this exponent was 2, that would look a lot more familiar. It would say .87 squared, with a little tiny 2 right above here and that would be the same thing as we've got written here, except with this being a 2 instead of a 1.5.

Well now what happens when you multiply, usually you think when you square a number it gets bigger, like 4 squared, raised to the second power is 16, that's a bigger number than 4. Now if the number being raised to the power is less than 1 however, you're multiplying a fraction times a fraction and when you multiply a fraction times a fraction you get a number that is smaller. And, in fact, if you multiplied, if the number here was just .8, and the exponent here was 2, you would be multiplying 8 times 8, which is 64, which would make this number here not 64, but .64. In other words, it would reduce it. And that's indeed what happens here. Because this exponent is greater than one, and so if the exponent was one, it would have no effect on this number, and if it was smaller than this number it would make it bigger. But we don't have to worry about that. Basically, if you've got a calculator, plug it in and press the exponent button and it will do it for you.

The result of raising .8789 to the 1.5 power is .82. It's higher than it would be if we were raising .8 to, squaring it, and you can see how that relationship goes, I hope. This is the one part that involves mathematics that most people probably aren't familiar with, but fortunately we have calculators now [so] we [don't] have to be familiar with it.

Does anybody have any questions about the basic calculation about the ELF.

Okay, what happens when we change some of these numbers. Well I ran through three examples here just to show you quickly the results of some adjustments to this ELF calculation. [I]n this case we've increased the exponential constant. It was 460, [and] it is 460 in the statute. What if that number were 1000. Well, we've run through here, and I won't take you through it at any length because you have in front of you the printed copy of this. I've highlighted with bold numbers every number that has changed from our previous example. This number is changed, this number is changed, and this number is changed.

The result of an increase in the exponential constant is a decrease in the tax. The exponent gets larger, you take a larger exponent and apply it to the same basic ELF and the result is a smaller number. Like raising a number to the third power instead of to the second power. So, just to go over it again, if the exponential constant is increased, the tax gets decreased, and in 1977, as you'll see, this was one of things that the free conference committee which met for almost two weeks argued and argued and argued about.

COUNTER #119

(QUESTION from Sen. Abood: Was that where your 460 came in?)

The 460 was the number that previously took the place of 1000. Yes, the answer to your question is yes.

(QUESTION from Sen. Abood: I understand that. In the free conference they argued this 1000 to 460?)

Well, 1000 wasn't one of their options, but they argued the difference between 750 and 300.

(QUESTION from Sen. Abood: This was an arbitrary figure that they were trying to work out?)

They wanted this curve, as you'll see, to look the way they wanted it to. And that number, this 1000 or 460 or 300, makes a significant difference on how that curve looks and who gets hit with a tax jab and who doesn't.

(COMMENT from Sen. Abood: So more is less.)

In this case, more is less. An increase in the exponential constant means a decrease in the tax. And you may not be surprised to learn that the Senate, in 1977, wanted a bigger exponent and the House wanted a smaller one.

(COMMENT from Sen. Abood: I wasn't there at the time.)

(QUESTION from Sen. Eliason: Do you have the names of the free conference committee members?)

I certainly do. (Pause) Let's take a look here at the results if the exponential constant is reduced. [It's] just the opposite, I've run it here from 460 down to 300. I've run through the calculations in exactly the same way. The exponent here becomes 1. And if you recall our earlier discussion, an exponent of 1 means that the number to which it is applied is unchanged. The result is an increase in the taxes you would expect. What happens if, remember there's another constant in the calculation, and that was the PEL here, the 300/bbl per day in our other calculation, here I show in Case 4, the results of changing that 300 to 400. Now this change could come about as...a consequence of the law being changed. The law currently says the production at the economic limit is assumed to be this calculation right here with 300. If they change the law to make it 400, the result would be as we'll show you here now. It could also come about as a consequence of the oil companies petitioning and the Dept. of Revenue approving a higher PEL allowance for a particular field. The result, I won't carry you all the way through this, just go down to the bottom, is in this case, a very small decrease in the tax. Basically we're saying here this is the amount of oil you get for free, and naturally that reduces the tax.

Now if this had been, the result here is reduction from .822, I believe, to .816, a very small reduction. But if this had been a much smaller field, and if this factor in the calculation right here had been smaller, the result could have been much more significant in terms of a tax reduction. But the principle [still] holds, and that is when the PEL constant is increased, the tax decreases. And that tends to be more important for the smaller fields, but it holds true for all fields. And I won't show you another example, because it's just the other way around. If the PEL constant is decreased, the tax increases.

That is how the tax is calculated and now it seems like the best way is to run this sort of backwards to show you how [the legislature got to this point] ([though] nobody really knows what went through the collective collegial bodies' minds when they make a decision like this). [W]hat was in the minds of the legislators who grappled with these problems in 1976 and 1977, [what were] some of things that they were thinking about? [T]o do that, I'd like to start with the tax law as it existed in 1977. This chart is actually from the 1977 session, and the axes here are the average barrels per day, the same axes that we had on our other chart, and the percentage tax rates, not the ELF here, this is the total percentage tax paid. So it's similar to what the ELF is but in this case we didn't have an ELF at the time and we're looking at the effective tax rate which, in the case of the '77 law, was the same as the nominal rate.

Let's focus on this scalloped curve right here. This is the law as it existed in 1977. It had been adopted in the 1973 special session. Some people call it the pipeline session. The law provided that the first 300/bbl of oil produced from a well during a day were taxed at 5%. And with what's an increasing block structure, which is very similar to the kind of structure that

you pay [on] your electric bills in most areas, except reversed. With electric bills, you usually pay less for the higher consumption, and in this case, the more you produce, the higher was your tax rate. Now those blocks produced this kind of scalloped appearance when they're applied to the average daily production and the rate that you're actually paying. For the next 700 B the rate was 6%. So you paid 5% on the first 300 B and 6% on the next 700 B, which meant that the average rate, which is what we're talking about here, never quite got up to 6%, because you always had this low price block down here. The next block, the final block, which was everything over 1000 B was taxed at 8% flat tax. So that if you've got it way, way out here, you eventually got close to 8%, and it was about 7.5% here around 3,500 B per day. That was the tax as it stood, so the effective rate, if you had 4,000 B per day of production, was about 7.6%. The top marginal block was 8%. Nobody was taxed more than 8%. If you were very, very productive in terms of average daily per well production, your tax rate was approaching 8%.

COUNTER #206

Okay, what was wrong with that? Why did the legislature want to change it? Well, I think there were two things in the minds of this special oil and gas and pipeline impact committee when they proposed what became known as House Bill 144. They wanted to reduce the tax rate for low productivity fields. This is the same kind of declining block structure under the bill that was introduced by the special committee that was formed to study this. And that bill reduced the tax rate for fields with productivities of less than about 1200-1300 B per day and increased the tax rate, substantially increased the tax rate for the high productivity fields. It was a device, a proposal that would have increased the taxes for the fields that have high average daily production and would have decreased the taxes for fields with low average daily production. Why did they want to do that? Well, clearly one thing that was in their mind and that they said in their report was that they were fearful that a 5% rate on these low blocks would cause Cook Inlet fields to shut down in some future year. They were seeing the gradual decline in productivity of the Cook Inlet fields and there was concern that that was something that they didn't want to see, they didn't want to see those jobs lost, and they didn't want to see the dead weight economic loss of shutting down a field when it was actually producing enough oil to make its cost. So they proposed that the first 100 B of oil paid absolutely no tax at all, and the next 200 B pay tax at the rate of 3% and so on, on up, so that the maximum tax rate was, if I recall correctly, 12%, it may be 12½%, I don't recall the top block. But as you can see, this was a very hefty tax increase for these more productive fields.

The Dept. of Revenue had, through 1976 and 1977, been conducting a major study of oil and gas taxes and it to this day remains a very, very useful piece of work. I have a copy with me in my briefcase back there right today in case questions come up that I can't answer, because it is even now, though somewhat out of date, a very useful document. It is primarily authored by John Messenger and his associate Tom Williams. As a result of that study and discussions within the administration and the Dept. of Law and the Dept. of Revenue, and Governor Hammond at that time, they came forward and introduced a proposed legislation that would have looked, had it been adopted, like this curve shown here. It contained an Economic Limit Factor without the exponent. Remember, in most cases, the exponent was a factor that when raised, reduces the tax.

The problem, I think, that some people saw with that was that it created too high a tax, too soon. In other words, a field here with, let's say 300/bbl of productivity would be paying tax of around 7%. That was even higher than the existing tax here and it was exactly those kinds of fields that the special oil

and gas committee was concerned with in terms of providing some tax breaks for them. Their proposal provided substantial tax breaks for every field producing less than 1300/bbl per day, that is a break in comparison with the laws that stood at that time. So there were attempts made to adjust the Economic Limit Factor...in the administration's bill. And that intent, since there were really only two factors you could adjust in that bill, one was the Production at the Economic Limit, which in their bill was 100. They said well if you don't want to lower that, let's just increase it, and so here was a, this was never introduced as a bill but was discussed as a proposal, Economic Limit Factor of 1000. Well, without the exponent, what happens is that this curve gets pushed this way, it actually gets pushed, this point gets moved to here and this curved area gets pushed down to here. That didn't produce the result that people were comfortable with either because it was felt that the result was even too big a tax break for the fields that were in this region right here. And, as well, when you gave that tax break, the result was the depression of the curve over in this region here. You couldn't avoid it if the calculation of the formula was such that if you moved this over here, this part came down as well. So, I think the desire was, and this is my guess, there was some evidence in the written record to indicate that this was what in fact was in the minds of some legislators, they wanted to give this break here, but they didn't want to give this big a break out here, and they couldn't figure out a way to do it with the Economic Limit Factor that the Dept. of Revenue had presented. And legislators kept saying, well, I'd like to use the Dept. of Revenue's formula because it's always good to get the administration's bill passed and put your amendments on the administration's ideas rather than try to do it the other way around, but they were saying, "We want a curve that incorporates the administration's formula, but one that more closely approximates what we've got here in our own bill. Can you give us an ELF factor that produces this?" And the result was the exponent because the exponent allowed you to push this part of the curve this way, to push the curve inward without pushing this part down very much, pushing this outer edge down very much.

It's interesting, some people say that these kinds of complications in law wouldn't happen if the legislature and the administration didn't have a bloated bureaucracy to dream up crazy ideas like this. And I think that's absolutely true, but it wasn't the bureaucracy that dreamed up the idea because they wanted to complicate the law, it was because the legislators and the policy makers came and said I want to accomplish a result, how do we do it? And that's how it happened that the ELF got an exponent.

COUNTER #302

The two bills that...ended up in free conference committee then had three things that they could adjust. The nominal rate, the exponential constant and the Production at the Economic Limit, and they also had a cents-per-barrel factor which I can get into if you like. I think it's probably worthwhile covering, but I think I'd like to reserve it for a little bit later.

In terms of the nominal rate, the house bill suggested 12.5% of value, the Senate wanted 11.5% of value, two different nominal rates which meant that the senate bill's curve headed up towards 11.5, never quite got to it, and the house bill was above it, was headed up towards 12.5, also never quite reaching it. The presumed Production at the Economic Limit in the house bill was 300/bbl per day and in the senate bill was 100/bbl per day, which was to say that the house bill gave a bigger tax break under the PEL, than did the senate bill. I think that reflected the greater concern in the House with the production problems that might in the future occur in Cook Inlet, or that were seen as a potential future problem in 1977.

The final factor that the free conferees were arguing about for those two weeks was the exponential constant, and the Senate wanted 750 and the House wanted 300. And to make a long story short, they compromised. In the very last minutes, as often does, it came together very quickly with a compromise which was a very small reduction in the House's proposed nominal rate from 12.5 down to 12.25, and they got to the end where they were arguing about hundredths of a percentage point, and they compromised on the House's part, or really a willingness on the Senate's part to adjust that exponential constant downward and there was some disagreement among the various oil companies as to their reactions to that and I don't think any of that disagreement ever got on the record, but it least it was said that some of the smaller oil companies operating in Cook Inlet felt that some advantage for the larger oil companies had been gained at their expense. I don't know if that's true, but that was an interesting side light on the negotiations and discussions.

COUNTER #348

There were probably ten or, there were a multitude of curves of this nature drawn and I think that's about all I can tell you about what went on in 1977 free conference. But the formula we worked through today arose out of those kinds of political compromises and I think it's the fact that the free conferees had to get in to this material as deeply as they did and as we have done today that has persuaded Gordon Harrison to ask me to go into as deeply as I have.

There are a whole lot of additional things that probably should be talked about, including the cents-per-barrel differences in 1977. The House proposed a cents-per-barrel tax...with an annual adjustment to the cents-per-barrel, based on the GNP deflator, basically based on inflation. So, had the House provision in that regard been adopted, the cents-per-barrel floor would have risen each year to keep pace with inflation and we haven't calculated what it would have been. The House proposed 93¢ per barrel, so it clearly would have been somewhere well above \$1.00 by now as a floor for the severance tax.

There's another interesting side light. The Dept. of Revenue initially proposed in 1977 and later retracted, or withdrew, a proposal to provide a royalty credit against severance tax, and it was a cute little device that would have, had it been legal, or had it been adopted, would have protected royalty revenues with a floor of sorts, in effect, using the severance tax as a means of providing a floor under royalty revenues as well. Senator Ferguson, who was around all this time, and Sen. Eliason haven't said anything about these, I hope that your memory ... accords with mine on these points.

The Senate had proposed a cents-per-barrel floor of 75¢ per barrel and had said that there would be no escalator. They compromised on that at 80¢ per barrel and that's where the 80¢ per barrel comes from that's in our law today. That's a good stopping place, I think, for the moment. There are a whole lot of other things to go into, but now is probably a good time to pause.

What comes next, if we want to go into it, Mr. Chairman, is the procedure for establishing the Production at the Economic Limit. The 1981 amendments, which of course gave us the tax system we have and which substantially changed the applicability of the ELF, as Mr. Nelson pointed out earlier, the ELF doesn't at this moment apply to Prudhoe Bay and that's because of what was done in 1981. Do you want to go on to those right now, Mr. Chairman, or do you want to pause at this point?

COUNTER #398

(QUESTION from Rep. Grussendorf: What would be your timing on that, Gregg?)

I think the 1981 amendments we could probably get through before lunch, and probably finish up this whole thing before lunch, unless you want to take an early lunch. I guess I'm getting a little hoarse, but that's alright.

(QUESTION from Rep. Grussendorf: Are there any objections to continuing?)

(QUESTION from Sen. Abood: One question, Mr. Chairman, I want to be sure it's straight. The only two fields that are affected are the Milne Point and the Kuparuk at this present time, is that correct?)

Affected by the ELF? I don't believe that's correct, but I would defer to my colleague, Tom Chester, who's probably looked into it. Cook Inlet fields, of course, are affected as well. And I think...

(QUESTION from Sen. Abood: But you were saying, if I may, Prudhoe Bay is not effected by it, but Kuparuk and Milne Point according to this graph, is affected by it?)

The Kuparuk field does have the ELF applied in calculation if its taxes, and the Milne Point field does as well, yes.

(QUESTION from Sen. Abood: So everything but Prudhoe Bay is affected by it?)

At this time, that's correct. (tape unintelligible) It appears that that would be the case, yes, unless the law is altered.

In 1981, let me back up, because there's one thing I should really say that I am not really the expert to talk, or the person to profess any expertise on, and that is the procedures under which the Production at the Economic Limit can be modified. And I am going to defer to Mr. Monkman or Ms. Vogt or Dr. Logsdon, if you want to go into more detail on those procedures. They're dealing with them on a daily basis. But the 1977 law, both versions, the House version and the Senate version, had a provision that said if the oil companies came in and could show that the costs of their production, and the bill defined costs very narrowly, although it left some ambiguities which I think may be a matter of some concern, if the oil companies could come in, or any oil company, any producer, could come in and show that its costs or the revenue from the production of the given 300 B was not enough to cover its narrowly defined costs, then the company would be entitled to, and the Dept. of Revenue was directed to grant, a higher Production at the Economic Limit. That factor, that provision was, I must say in my memory, not particularly a matter of concern to either side in the negotiations. There was concern that the language be written very tightly and of course, as usually often happens in this case, the concern of those of us who were drafting at the direction of the committee was to define those costs very narrowly. It turns out that that wasn't the problem, and as is often the case, it's the problem you don't think about is the one that comes back and grabs [you]. So, if there are further questions on that, I think I'd like to defer and have them direct it to the Dept. of Revenue, since they're in administrative hearings and are thinking a lot about it, if it's alright with Mr. Monkman.

COUNTER #458

(QUESTION from Rep. Grussendorf: Any last questions of Gregg, here on PEL?)

Let's go on to 1981 then. In 1981, I don't think we want to go through the long history of the 1981 situation, but in brief, the state had been sued with respect to the constitutionality of its oil and gas corporate income tax. And as a result of the deliberations in the 1981 session, there were attempts to settle that lawsuit legislatively, that is to remove the provisions of the petroleum corporate income tax that was passed in '78, which offended the oil companies, and thus settle the law suit. Those efforts came to naught, but there were efforts and concern on the part of the administration of Governor

Hammond to limit the state's liability by substituting another kind of tax that would not be so legally, at least would not be subject to the legal vulnerabilities that some people thought the oil and gas corporate income tax, that was then called, by shorthand, separate accounting, was supposedly vulnerable to.

The legislature decided to repeal the separate accounting tax and substitute a different tax which, it was felt, would be less subject to legal threat. The result of that change was a substantial reduction in revenue to the state. And to counterbalance that reduction, significant changes were made in the 1977 severance tax. The effect of those changes were to increase the tax rate at Prudhoe Bay from what was then about 11% up to 15%. This was done by establishing in the law, what I call in a shorthand way, the ten-year ELF trigger. And the ELF trigger says that any time a field has been in production for ten years, if that field began production before 1981, that it, the ELF goes into effect only after ten years of production. That is why Prudhoe Bay does not have the ELF applied in calculating its effective tax rate right now. Now there was also another trigger in the 1981 law and that's the .7 trigger. And I know this sounds very confusing and it is because the 1981 amendments were confusing. They were, in my opinion anyhow, kind of jury-rigged to produced the revenue result that was needed to balance the losses of revenue resulting from the change in the separate accounting to modified apportionment tax in the income tax side.

The theory behind it however, there was a theory behind those changes, and the theory behind the changes was that a field would be entitled in general (and this wasn't in the law this was sort of the theory behind it) to five years of production with a tax rate of 12.25% and that thereafter the tax rate would go up to 15%. Since Prudhoe Bay had already producing for five years in 1981, it meant that Prudhoe Bay had about five years to go without, actually in terms of the effective date about seven years to go, and with a tax rate that was not affected by the ELF. In addition, that unfortunately didn't get enough money to make up the difference, and so it was rather arbitrarily the law was designed so as to apply a 15% rate to Prudhoe Bay during the present time on the distinction that it came into production earlier and that they were going give a better tax situation to the smaller fields that were expected to come on after 1981.

COUNTER #536

So the result is that Prudhoe Bay has a calculated ELF of about .8 right now, which being above .7, doesn't trigger the .7 trigger, which if it did would cause the ELF to be applied. As a result, Prudhoe Bay pays a full 15% tax and will do so until it has been in production for ten years, which happens next year. That change means that there will be a significant reduction in the amount of severance taxes that the Prudhoe Bay field will produce for the State of Alaska.

That reduction sometimes gets caught in a kind of semantic difficulty. [I]t certainly is a reduction from the tax that is currently being paid by the oil companies on their Prudhoe Bay properties and their Prudhoe Bay production. It is not, however, a reduction from the current tax law, so I think it's useful in discussing this to remember that semantic distinction there. Usually we can say current tax and compare it with something else, in this case the word current tax can have two quite different meanings. So that is...one kind of ELF legacy, if you will, that is left over from the 1981 session: the ten years is running out and Prudhoe Bay is waiting to get its ELF.

The second legacy, and one that really works the other way, is that the five years that fields are allowed to produce at 12.25%, and this only applies to the newer fields, means that in the 1990's or late 1980's some of these newer

fields are going, actually they'll all be in the 1990's, are going to have a significant tax increase. Endicott for example, is going to be subjected to about an increase from, I don't know what the effective rates are, but it's about a 20% severance tax increase in about 1991-1993 (I don't have that sheet in front of me, but Tom Chester will talk to you later about the revenue effects of these things and show that to you) because the nominal rate changes from 12.25 to 15% in that year. Now if those fields are marginal, it's probably [not] something you want to hit with an extra tax burden at that time. That is another legacy left by the 1981 amendments.

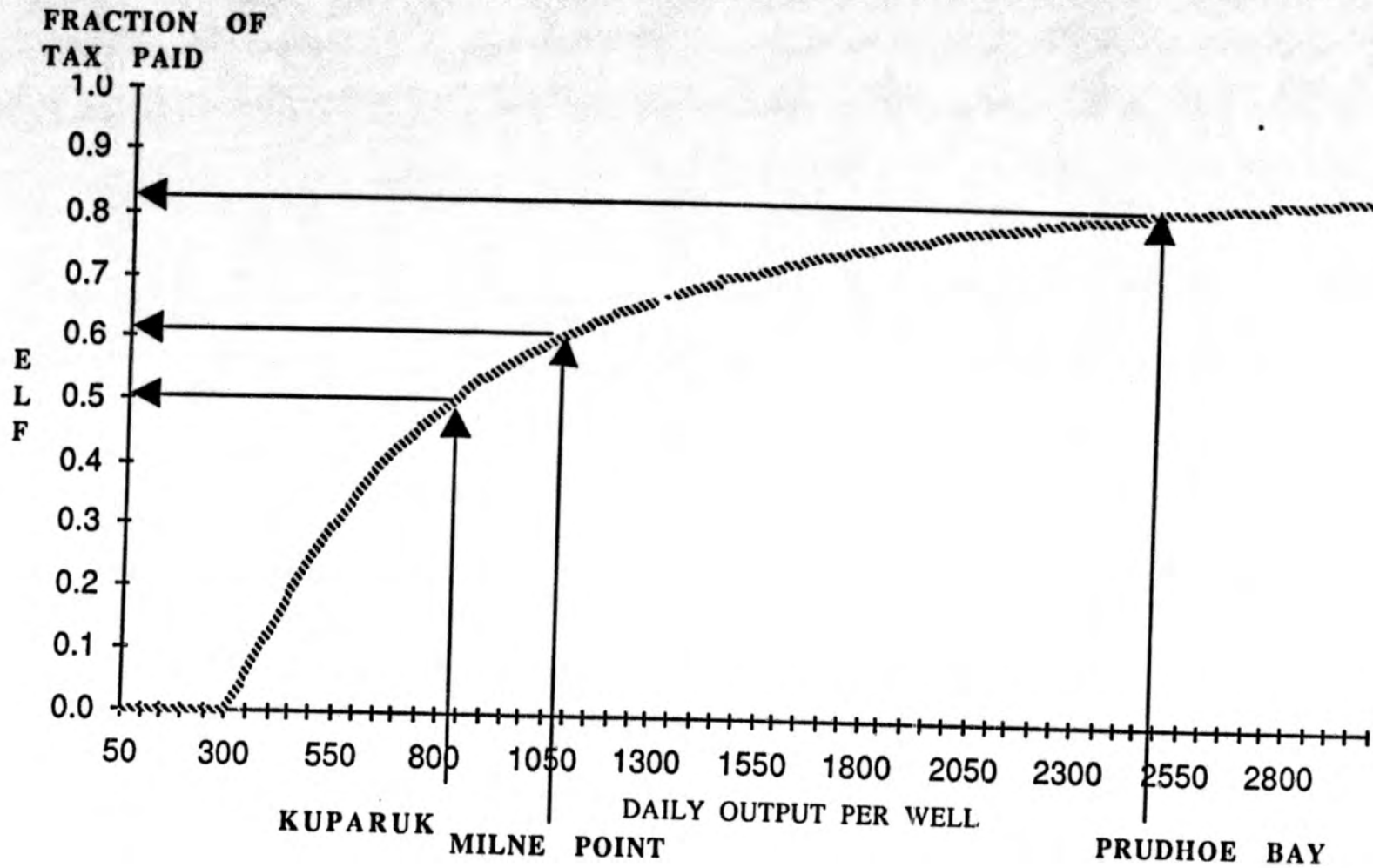
There is, of course, the legacy of the 1977 session, in what Mr. Monkman has descriptively called the "trap door in the floor." That is the application of the ELF to the cents-per-barrel which means that the tax rate could in fact fall to zero. Something that I don't think was contemplated or thought about one way or the other very much at the time the bill was drafted, although others may have a different opinion on that. So there are at least these two legacies from the 1981 amendments, and those may or may not be something you'll be interested in looking at further.

That concludes my presentation, and I am to be followed, presumably this afternoon, by my colleague, Tom Chester, who will discuss with you the revenue implications of these legacies, if you will, and the ways that those revenue implications could be altered, some of the ways that those revenue implications could be changed.

(QUESTION from Rep. Grussendorf: Before we break, do we have any questions of Gregg? When we come back, we'll be dealing with revenue effects of ELF and then the previous proposals to change ELF. Will coming back at 1:00 be acceptable with you? Let's recess until 1:00.)

END OF TAPE 2, SIDE 2, COUNTER #633

ECONOMIC LIMIT FACTOR



CASE 1

HOW THE ELF IS CALCULATED

$$\text{ELF} = (1 - [\text{PEL}/\text{TP}])\exp(460 * \text{WD}/\text{PEL})$$

PEL = (Production at the Economic Limit) =
(300 barrels per day)*
(average number of operating wells during the month)*
(number of days of production for the month).

EXAMPLE

$$\text{PEL} = 300 \text{ barrels} * 541 \text{ wells} * 30 \text{ days} = 4,869,000 \text{ barrels per month}$$

TP = (Total Production for the field for the month) =
(average number of operating wells during the month)*
(number of days of production for the month)*
(average daily production per well).

EXAMPLE

$$\text{TP} = 541 \text{ wells} * 30 \text{ days} * 2477 \text{ barrels per well} = 40,201,710 \text{ barrels per month}$$

WD = (Well Days) =
(number of operating wells during the month)*
(number of days each well operates)

EXAMPLE

$$\text{WD} = 541 \text{ wells} * 30 \text{ days} = 16,230 \text{ well days}$$

CALCULATION EXAMPLE

$$\text{ELF} = (1 - [\text{PEL} / \text{TP}])\exp(460 * \text{WD} / \text{PEL})$$

$$\text{ELF} = (1 - [4,869,000/40,201,710])\exp(460*16,230/4,869,000)$$

$$\text{ELF} = (1 - .1211) \exp (1.533)$$

$$\text{ELF} = (.8789) \exp (1.533)$$

$$\text{ELF} = .82$$

CASE 2

WHAT HAPPENS WHEN THE EXPONENTIAL CONSTANT IS INCREASED?

$$ELF = (1 - [PEL/TP])\exp(1000*WD/PEL)$$

PEL = (Production at the Economic Limit) =
(300 barrels per day)*
(average number of operating wells during the month)*
(number of days of production for the month).

EXAMPLE

$$PEL = 300 \text{ barrels} * 541 \text{ wells} * 30 \text{ days} = 4,869,000 \text{ barrels per month}$$

TP = (Total Production for the field for the month) =
(average number of operating wells during the month)*
(number of days of production for the month)*
(average daily production per well).

EXAMPLE

$$TP = 541 \text{ wells} * 30 \text{ days} * 2477 \text{ barrels per well} = 40,201,710 \text{ barrels per month}$$

WD = (Well Days) =
(number of operating wells during the month)*
(number of days each well operates)

EXAMPLE

$$WD = 541 \text{ wells} * 30 \text{ days} = 16,230 \text{ well days}$$

CALCULATION EXAMPLE

$$ELF = (1 - [PEL / TP])\exp(1000*WD / PEL)$$

$$ELF = (1 - [4,869,000/40,201,710])\exp(1000*16,230/4,869,000)$$

$$ELF = (1 - .1211) \exp (3.333)$$

$$ELF = (.8789) \exp (3.333)$$

$$ELF = .65 \quad \text{RESULT: A DECREASE IN THE TAX}$$

CASE 3

WHAT HAPPENS IF THE EXPONENTIAL CONSTANT IS REDUCED?

$$ELF = (1 - [PEL/TP])\exp(300*WD/PEL)$$

PEL = (Production at the Economic Limit) =
(300 barrels per day)*
(average number of operating wells during the month)*
(number of days of production for the month).

EXAMPLE

$$PEL = 300 \text{ barrels} * 541 \text{ wells} * 30 \text{ days} = 4,869,000 \text{ barrels per month}$$

TP = (Total Production for the field for the month) =
(average number of operating wells during the month)*
(number of days of production for the month)*
(average daily production per well).

EXAMPLE

$$TP = 541 \text{ wells} * 30 \text{ days} * 2477 \text{ barrels per well} = 40,201,710 \text{ barrels per month}$$

WD = (Well Days) =
(number of operating wells during the month)*
(number of days each well operates)

EXAMPLE

$$WD = 541 \text{ wells} * 30 \text{ days} = 16,230 \text{ well days}$$

CALCULATION EXAMPLE

$$ELF = (1 - [PEL / TP])\exp(300*WD / PEL)$$

$$ELF = (1 - [4,869,000/40,201,710])\exp(300*16,230/4,869,000)$$

$$ELF = (1 - .1211) \exp(1)$$

$$ELF = (.8789) \exp(1)$$

$$ELF = .8789 \quad \text{RESULT: AN INCREASE IN THE TAX}$$

CASE 4

WHAT HAPPENS WHEN THE PEL CONSTANT IS INCREASED?

$$ELF = (1 - [PEL/TP])\exp(460*WD/PEL)$$

PEL = (Production at the Economic Limit) =
(400 barrels per day)*
(average number of operating wells during the month)*
(number of days of production for the month).

EXAMPLE

$$PEL = 400 \text{ barrels} * 541 \text{ wells} * 30 \text{ days} = 6,492,000 \text{ barrels per month}$$

TP = (Total Production for the field for the month) =
(average number of operating wells during the month)*
(number of days of production for the month)*
(average daily production per well).

EXAMPLE

$$TP = 541 \text{ wells} * 30 \text{ days} * 2477 \text{ barrels per well} = 40,201,710 \text{ barrels per month}$$

WD = (Well Days) =
(number of operating wells during the month)*
(number of days each well operates)

EXAMPLE

$$WD = 541 \text{ wells} * 30 \text{ days} = 16,230 \text{ well days}$$

CALCULATION EXAMPLE

$$ELF = (1 - [PEL / TP])\exp(460 * WD / PEL)$$

$$ELF = (1 - [6,492,000/40,201,710])\exp(460*16,230/6,492,000)$$

$$ELF = (1 - .1615) \exp (1.150)$$

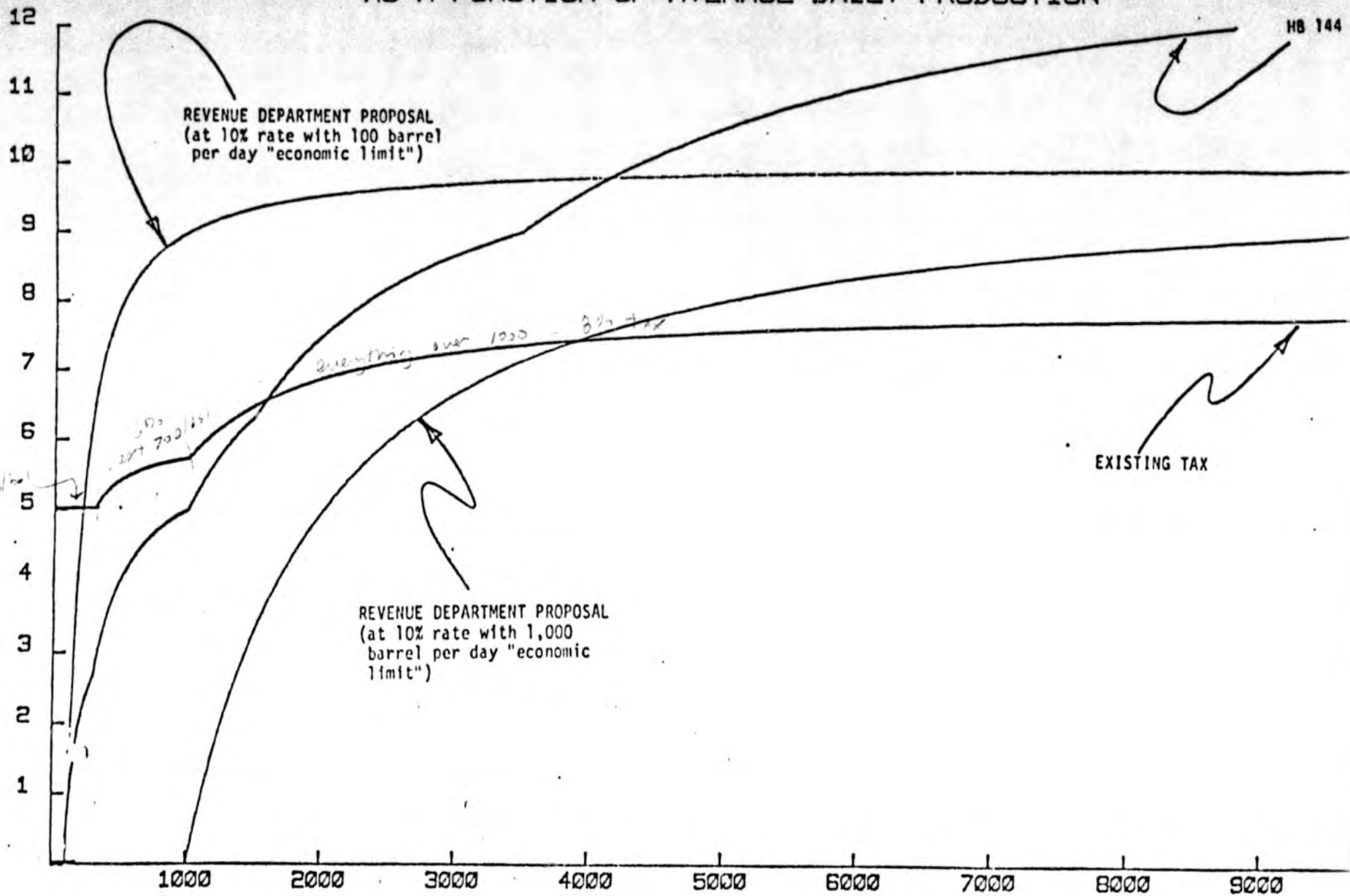
$$ELF = (.8385) \exp (1.150)$$

$$ELF = .816 \quad \text{RESULT: A DECREASE IN THE TAX}$$

EFFECTIVE SEVERANCE TAX RATE AS A FUNCTION OF AVERAGE DAILY PRODUCTION

EFFECTIVE SEVERANCE TAX RATE

(PERCENT)



AVERAGE DAILY PRODUCTION
(BARRELS PER DAY)

DOR Y=10*(X-100)/X; INTEGRAL F(X)=45114.03 .

DOR Y=10*(X-1000)/X; INTEGRAL F(X)=67665.60

LEGISLATIVE AFFAIRS AGENCY
RESEARCH DIVISION
15 February 1977

REF ID: A11111

Standard Alaska
Production Company
900 East Benson Boulevard
P.O. Box 196612
Anchorage, Alaska 99519-6612
(907) 564-5423

G.N. Nelson
President

STANDARD
ALASKA PRODUCTION

October 16, 1986

Senator Frank Ferguson
Co-Chairman
Joint Special Committee on the State's Tax Policy
P.O. Box 131
Kotzebue, Alaska 99752

Representative Ben Grussendorf
Co-Chairman
Joint Special Committee on the State's Tax Policy
Pouch V
Juneau, Alaska 99811

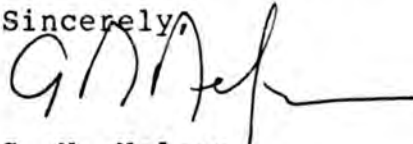
Dear Senator Ferguson and Representative Grussendorf:

Standard Alaska Production Company would like to submit the attached memorandum for the consideration of the Joint Special Committee members.

This memorandum was prepared by Mr. G. J. Abraham, Vice President Prudhoe Bay Unit Programs, and addresses Standard Alaska's concerns regarding the proposed changes to the economic limit factor under consideration by the Committee. Mr. Abraham has been involved in various aspects of Prudhoe Bay development since 1971 and currently is in charge of the geoscience and engineering activities directed to the achievement of the optimum economic recovery from the Prudhoe Bay Unit.

If you have any questions or comments on this memorandum, please contact me at Standard Alaska's offices in Anchorage.

Sincerely,



G. N. Nelson

Attachment

Office Correspondence

STANDARD
ALASKA PRODUCTION

TO: G. N. Nelson

DATE: October 16, 1986

FROM: G. J. Abraham

CC NO:

SUBJECT: Proposed Severance Tax Changes

YOUR REF:

I have some serious concerns with the proposals before the Joint Special Committee on State's Tax Policy (Committee) to alter the Economic Limit Factor (ELF). Implementation of the proposals to amend or eliminate the ELF presented by OMB at the September 11, 1986 meeting could result in decreased recovery at Prudhoe Bay and could significantly impact future exploration and production activities in Alaska.

Prudhoe Bay Development

Prudhoe Bay is a field of 10 billion barrels of recoverable liquids out of 22 billion barrels in place. Approximately five billion barrels have already been produced leaving a reserve of five billion barrels. Up to four billion barrels of that remainder could be recovered under current State tax law with the wells and facilities in place. Premised on these tax laws, over \$5 billion has been spent in the last four years on the drilling of 285 new wells and projects such as Waterflood, Gas Lift, and Enhanced Oil Recovery/Natural Gas Liquids (EOR/NGL).

Recovering the remaining one billion barrels will require additional capital investment in facilities and drilling. Many of these future investment decisions are only marginally economic. This future development and some of the expected production from the current wells and facilities is jeopardized by the proposed changes to the ELF.

Additionally, Prudhoe Bay contains 12 billion barrels unrecoverable with current technology. Some of this currently unrecoverable oil could be recovered with improved technology and major capital investment. Significant increases in taxation will curtail the research necessary to pursue these thinly margined projects and further reduce potential future State revenues.

The ELF is important in decisions to continue development within the Prudhoe Bay Unit. Consider, for example, the decision to drill additional wells at Prudhoe. Removal of the ELF benefit will in many cases make additional wells uneconomic. Four hundred or more future wells will be required to realize the additional one billion barrels referenced. Preliminary studies show that elimination of the ELF could

reduce future drilling at Prudhoe Bay by over 25%, reducing ultimate recovery and industry and State revenues. From the State's perspective, direct losses accrue in the areas of royalty, production tax, income tax and annual property taxes as well as in the secondary areas of employment and economic stimulation.

An ELF modification which involves an additional total field production factor would eliminate some projects which increase field production by raising the severance tax rate on the whole field and thus making the incremental project unattractive. From a broader perspective, selectively penalizing large fields like Prudhoe will curtail their development short of their full potential as discussed above. Further, penalizing large fields discourages unitizations which are an efficient means of managing a reservoir for maximum benefit to the industry and the State.

Alaskan Development Impact

In addition to the Prudhoe Bay impacts, tax increases could have significant adverse effects on future Alaskan oil development. Decisions to proceed with exploration and development projects are based on after-tax economics. There are three tax related factors:

- Cash to finance the project,
- Competitive after-tax returns on investment, and
- Stable business environment.

Cash to Finance the Project

Standard has invested \$12 billion on Alaskan exploration, development and transportation. This investment record for TAPS, Prudhoe Bay, Endicott, Kuparuk and Mukluk, demonstrates the company's willingness to invest in Alaska when competitive after-tax returns are projected.

The oil industry, as well as the State of Alaska, has a severely constrained cash flow. Virtually all major oil companies have significantly reduced 1986 exploration and development budgets and workforce. Standard's 1986 original capital budget for Alaskan field development has been reduced from \$923 million to \$675 million. Standard's workforce was reduced in July by 172 people.

Increasing industry taxes through changes to the ELF will further reduce the industry's ability to continue to invest in Alaska.

Competitive After-Tax Returns On Investment

The future commitment of available exploration and development funds to Alaska will depend on whether the projected returns are competitive with alternative uses of the funds. The ELF is also critical in this regard.

Modification or elimination of the ELF which increases the effective tax rate on major fields will discourage exploration. Arctic exploration involves expensive, high risk ventures such as Mukluk. These risks are taken to find major, profitable fields such as Prudhoe Bay and Kuparuk. Smaller fields are generally a by-product of these efforts. Where the taxation system reduces significantly the profitability of a major field, the high cost exploration risks will not be taken and neither large nor small additional Alaskan fields will be found.

Stable Business Environment

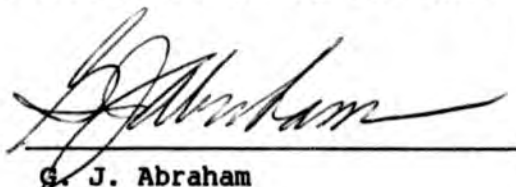
A fair and stable taxation system is a critical component in any business environment. Under the current taxation system, production taxes can be reduced by the ELF where the wellhead value closely approaches the operating costs allowing continued production. Alaska's highest in the nation production tax rate of 15% and highest in the nation production tax floor of 80¢ per barrel will be reduced for Prudhoe by about 20% after ten years of production.

The large Alaskan development expenditures outlined above were determined to be economic based on existing tax laws. Changes in these laws - which result in tax increases - send several unwelcome messages to the oil industry. One message is that the industry could expect tax increases in major fields after the major capital outlays have been made. A second message is that during hard times for the industry and the State, oil industry tax increases will be considered regardless of their impact on the industry.

It is easy to estimate the State revenues to be generated by tax increases. It is difficult to quantify the very real lost future production and the consequent losses to State revenue and the overall Alaskan economy that will be incurred as a result of the enactment of a severance tax increase.

Recommendation

In light of the adverse impacts of increased severance taxes on the Prudhoe Bay Unit and other future industry exploration and development activities, I recommend that these comments be forwarded to the Committee. Hopefully they will provide the Committee with a more balanced perspective in which to consider tax policy and the resulting longer term implications.



G. J. Abraham

MEMORANDUM

State of Alaska

TO: Vincent Wright, *VW*
Chief of Research

DATE: December 3, 1986

FILE NO.:

THRU:

TELEPHONE NO.:

SUBJECT: ELF presentation
for the Tax
Committee

FROM: Charles Logsdon, *CL*
Petroleum Economist

Per your request, enclosed is the latest draft of my presentation on the ELF for the joint Tax Committee meeting December 4, 1986. We have essentially updated the analysis prepared for the cancelled October 15, 1986 meeting using the assumptions underlying the December petroleum production revenue forecast. Unfortunately, due to the severe time constraint in preparing this updated analysis, "minor" revisions in the numbers may be necessary. As you will notice, the new input assumptions do not materially change the original analysis.

ANALYSIS OF ELF ALTERNATIVES

State of Alaska
Department of Revenue
December 4, 1986

The Effect of Four Possible Changes in the ELF on State of Alaska Severance Tax Revenues

The purpose of this brief note is to examine the effect of changing the relationship of the Economic Limit Factor (ELF) to State of Alaska Severance taxes. The ELF is a number with a value of between zero and one which is multiplied by the nominal severance tax rate or the cents per barrel tax floor to reduce the severance taxes paid as an oil or gas producing lease approaches its economic breakeven point. This analysis will specifically examine how changes in the application of the ELF and in the ELF itself impact oil revenues and production. The focus will be on the North Slope. Cook Inlet production will be considered separately since the economics of these producing fields are dominated by costs associated with the shutdown and abandonment of older low productivity oil wells located on expensive offshore production facilities.

Specifically the following four possible changes are investigated.

1. Eliminate application of the ELF to the current \$.80 per barrel tax floor.
2. Change the ELF formula to one similar to that proposed in HB545 and modified by OMB in which the exponent is modified to raise the tax rate on fields with total field productivity in excess of roughly 100,000 barrels per day and lower the tax rate on fields with production less than this amount.
3. Establish a new severance tax floor at \$1.50 not subject to the ELF and index it for inflation.
4. Eliminate the ELF entirely.

5. *Eliminate the ELF on on Production ..*

These hypothetical changes in the severance tax law are analysed using the Department of Revenue Petroleum Revenue Forecasting Simulation Model. All assumptions concerning oil prices, transportation costs, and market deliveries are the same as were used in preparing the Department's December 1986 forecast of petroleum production revenues.

The simulation model is used because it can show the changes in average expected revenues and oil production due to a change in the tax law over a wide range of price and transportation cost assumptions. Further, since it is the model used to make the official State forecast of severance tax revenues it conveniently illustrates how the current forecast would change if the severance tax law were changed.

As a general principle, any of the changes in the severance tax mentioned above will increase the average expected taxes levied on the oil producers in the State. Since higher taxes make producing oil a more costly enterprise it is likely that in some instances this higher cost will make production unprofitable. In a broad sense then, it would be nice to know the tradeoff between the increased tax revenue to the State and the reduced investment in oil production and consequently reduced tax base due to the increased cost of producing oil.

Such an investigation is possible but since so many assumptions have to be made, the results will always be subject to dispute. As a practical matter oil producing companies are not a homogenous group with respect to risk preference or financial capacity. One has only to look at the companies producing on Alaska's North Slope to appreciate this distinction i.e. Amerada Hess as compared to Exxon. It is also important to stress that the companies are the one's who make the decisions affecting production and any financial model such as the one used in this analysis can only make reasonable assumptions about the parameter values the companies themselves would choose (price, discount rate, or capital outlay). Further this analysis can only examine the relative merits of oil production in the State of Alaska, since we do not have accurate data on oil production prospects globally. Finally this analysis is done without examining the issue of budget constraints which obviously all in the oil business are facing given the current depressed price situation.

There too many unknowns for this analysis to delve in depth into the relative regional economic impact of public expenditure vs.

private expenditure in the State of Alaska so the discussion will be limited to the effect of changes in ELF on State petroleum revenues and barrels of oil and not on whether those changes make sense for the Alaskan economy.

Eliminate the application of the ELF to the cents per barrel tax floor

This would essentially guarantee the State a minimum severance tax payment for every barrel of oil produced in the State (currently \$. 80 per barrel). Tables 1 and 2 show the change in average expected revenues and production for each of the North Slope oil fields assumed to be in production between the present and 2005. Fixing the severance tax floor would increase average expected revenues between 1987 and 2005 by \$135.42 million in nominal dollar terms or \$95.98 million discounted at 8%. The disincentive to produce created by the fixed floor results in a decrease in average expected production of over 19 million barrels of oil. One way of looking at it is that the State gains an average of roughly \$7.00 for every barrel of oil production foregone.

Prudhoe Bay production is effected the most by this change in the severance tax. This is primarily because after primary recovery Prudhoe will still have a tremendous amount of oil in the ground which may be recoverable with additional investment. On the other hand Kuparuk and some of the other more marginal fields can be seen to provide the lion's share of the average expected revenue increase. This is because these fields currently have calculated ELF's which are much lower than Prudhoe so that at prices which trigger the cents per barrel tax these fields will experience a relatively larger increase in their tax bill.

Modify the ELF Exponent to Reflect Total Field Production

This proposed change in the ELF is contained in a bill submitted in the Alaska House of Representatives in the Spring of 1986. In

Table 1

Production Impact of Fixed Severance Tax Floor = \$.80/bbl
(Millions Bbls.)

Year	Prudhoe	Kuparuk	Milne	Endicott	Lisburne	West Sak	Pt. Thomson	Seal Island	Total North Slope
1986	0	0	0	0	0	0	0	0	0
1987	0	0	0	0	-.04	0	0	0	-.04
1988	-.77	1.01	-.08	-.08	-.08	0	0	0	-2.02
1989	-.68	-.12	-.11	-.26	-.10	0	0	0	-1.27
1990	-.60	-.12	-.16	-.29	-.13	0	0	0	-1.30
1991	-.56	-.12	-.11	-.31	-.20	0	0	0	-1.30
1992	-.52	-.09	-.11	-.27	-.20	0	0	0	-1.19
1993	-.48	-.09	-.12	-.26	-.24	0	0	0	-1.19
1994	-.45	2.22	-.21	-.19	-.24	0	0	0	1.13
1995	-.40	1.42	-.22	-.11	-.23	0	0	0	.46
1996	-.50	1.18	-.17	-.04	-.26	0	0	0	.21
1997	-.34	-.73	-.11	-.01	-.31	0	0	-2.99	-4.49
1998	-.64	-.72	-.05	.02	-.44	0	0	-1.50	-3.33
1999	-.59	-.49	-.03	.05	-.25	0	0	-.03	-1.34
2000	-.42	-.38	0	.05	-.16	0	0	-.20	-1.11
2001	-.40	-.31	0	.06	-.06	0	0	-.15	-.86
2002	-.02	-.32	0	.05	-.04	-.02	0	-.03	-.38
2003	-.02	-.25	0	.03	-.03	0	0	-.09	-.36
2004	-.01	-.23	0	.03	-.02	-.03	0	-.57	-.83
2005	-.01	-.20	0	.01	-.01	-.02	0	-.02	-.25
Total	-7.41	-.36	-1.48	-1.52	-3.04	-.07	0	-5.58	-19.16

Table 2

Revenue Impact of Fixed Severance Tax Floor = \$.80/bbl
(Millions \$)

Year	Prudhoe	Kuparuk	Milne	Endicott	Lisburne	West Sak	Pt. Thomson	Seal Island	Total North Slope
1986	0	0	0	0	0	0	0	0	0
1987	.10	29.66	1.70	0	.50	0	0	0	31.96
1988	9.50	8.92	.11	1.38	.27	0	0	0	20.18
1989	5.16	5.37	0	2.66	.64	0	0	0	13.83
1990	2.74	3.83	-.03	1.51	.30	0	0	0	8.35
1991	3.35	4.37	-.02	1.45	.58	0	0	0	9.73
1992	2.21	4.14	-.03	.84	.38	0	.01	0	7.55
1993	2.71	3.53	-.03	-.01	.66	0	.02	0	6.88
1994	3.12	19.80	.13	-.05	.96	0	.07	0	24.03
1995	2.70	17.43	.10	-.02	1.02	.09	.03	0	21.35
1996	1.75	15.58	.05	.04	.87	.09	.02	0	18.10
1997	1.34	-1.42	.03	.07	.66	-.01	0	0	.67
1998	.30	-2.50	.03	.09	.34	-.02	-.01	0	-1.77
1999	-.53	-3.17	.05	.14	.22	-.02	0	0	-3.31
2000	-.13	-3.51	.07	.13	.13	-.03	-.01	0	-3.35
2001	.13	-3.76	.06	.13	.13	-.06	-.01	0	-3.38
2002	.05	-3.95	.05	.10	.07	-.13	-.01	0	-3.82
2003	.01	-4.09	.05	.08	.05	-.10	0	0	-4.00
2004	-.07	-3.97	.04	.05	.04	-.14	-.01	0	-4.06
2005	-.08	-3.68	.04	.03	.03	-.16	0	0	-3.82
Total Revenue									
Nominal	34.36	82.58	2.40	8.62	7.85	-.49	.10	0	135.42
10% disc	20.07	57.69	1.63	5.21	3.64	-.06	.05	0	88.24
8% disc	22.15	62.23	1.73	5.71	4.18	-.09	.06	0	95.98

this example the formula specification is the one used in the presentation by Dr. Tom Chester at the Tax Committee's September meeting. The formula used in HB545 raises the tax rate on fields with production in excess of roughly 80,000 barrels per day and lowers the rate for lower production rates. The modification presented by Dr. Chester changes the trigger to roughly 100,000 barrels. The purpose of this change is to increase the effective tax rate over current law for "large oil fields" while at the same time keeping severance taxes from discouraging investment in smaller oil fields. Practically speaking it effectively increases revenues to the State through the impact on the prolific Prudhoe Bay field.

Tables 3 and 4 illustrate the field by field impact on revenue and production of this change in the severance tax law. Average expected revenues through the year 2005 increase \$2270.52 million in nominal dollar terms (\$1073.67 million discounted at 8%). As might be expected because of the upside potential of the higher effective tax rate on large fields, should oil prices grow over time the large reserves of Prudhoe contribute the most to this revenue increase. Average expected production would decrease by 28.41 million barrels under this tax regime. Once again the disincentive to produce additional barrels from the large Prudhoe Bay field accounts for the largest share of estimated production decrease. However because the tax burden is lowered for some fields, West Sak and Seal Island actually show greater average expected production. This ELF alternative increases State revenues by roughly \$80 for every barrel of oil production foregone.

Establish a New Severance Tax Floor at \$1.50 Not Subject to the ELF and Index it for Inflation.

Tables 5 and 6 show the field by field effect of this alternative on average expected production and average expected revenues. Indexing the severance tax floor from a \$1.50 base results in an increase of revenues of \$1797.17 million through 2005 in nominal dollar terms (\$1195.04 discounted at 8 percent). This alternative has a devastating impact on average expected

Table 3

Production Impact of OMB Altered Exponent
(Millions Bbls.)

Year	Prudhoe	Kuparuk	Milne	Endicott	Lisburne	West Sak	Pt. Thomson	Seal Island	Total North Slope
1986	0	0	0	0	0	0	0	0	0
1987	0	0	0	0	-.01	-.01	0	0	-.02
1988	-.71	-.05	0	-.02	-.01	0	0	0	-.79
1989	-.63	-.12	0	-.04	-.01	0	0	0	-.8
1990	-.57	-.12	-.01	-.04	-.01	0	0	0	-.75
1991	-.55	-.11	-.01	-.05	-.02	0	0	0	-.74
1992	-.47	-.09	-.01	-.07	-.02	0	-.13	0	-.79
1993	-.45	.09	-.02	-.07	-.03	0	-.23	0	-.71
1994	-2	.23	-.43	-.06	-1.31	0	-.24	0	-3.81
1995	-1.73	.17	-.35	-.06	-1.09	.79	-.3	0	-2.57
1996	-2.37	.15	-.28	-.05	-.9	.72	-.31	0	-3.04
1997	-3.05	-.33	.05	-.05	-.86	.77	-.29	2.99	-.77
1998	-3.19	-.2	.04	-.04	-.68	.7	-.24	1.4	-2.21
1999	-2.72	-.21	.05	-.04	-.57	.62	-.32	-.09	-3.28
2000	-2.18	-.16	.05	-.03	-.49	.61	-.26	.01	-2.45
2001	-2.04	-.13	.06	-.02	-.39	.61	-.2	.05	-2.06
2002	-1.62	-.09	.05	-.02	-.28	.77	-.17	-.07	-1.43
2003	-1.32	-.07	.03	-.01	-.22	.81	-.09	-.03	-.9
2004	-1.06	-.09	.03	-.02	-.2	.73	-.06	.45	-.22
2005	-1.17	-.08	.02	-.01	-.15	.48	-.03	-.13	-1.07
Total	-27.83	-1.21	-.73	-.7	-7.25	7.6	-2.87	4.58	-28.41

Table 4

Revenue Impact of OMB Altered Exponent
(Millions \$)

Year	Prudhoe	Kuparuk	Milne	Endicott	Lisburne	West Sak	Pt. Thomson	Seal Island	Total North Slope
1986	0	0	0	0	0	0	0	0	0
1987	5.94	29.29	-.35	0	-3.35	0	0	0	31.53
1988	93.85	38.51	-.7	-2.18	-5.84	0	0	0	123.64
1989	106.32	49.2	-1.92	1.06	-4.8	0	0	0	149.86
1990	114.56	55.31	-2.31	1.08	-5.18	0	0	0	163.46
1991	117.43	40.61	-2.38	1.14	-1.45	0	0	0	155.35
1992	121.4	21.83	-3.43	1.26	-1.61	0	-2.76	0	136.69
1993	124.53	17.32	-4.07	1.71	2.49	0	-3.42	0	138.56
1994	124.27	14.59	-7.22	-3.66	8.69	0	-3.35	0	133.32
1995	122.99	11.42	-7.32	-2.74	6	2.56	-3.53	0	129.38
1996	121.97	5.22	-7.15	-5.63	.76	5.32	-3.83	0	116.66
1997	121.16	2.47	-4.86	-6.91	1.21	15.03	-5.19	0	122.91
1998	123.22	-2.01	-4.39	-6.67	-6.63	17.42	-5.89	-2.87	112.18
1999	123.31	-5.48	-3.66	-5.19	-13.47	20.38	-6.2	-1.7	107.99
2000	123.55	-8.42	-2.85	-3.65	-17.84	27.9	-8.1	-1.26	109.33
2001	118.02	-9.7	-1.81	-2.21	-18.53	31.67	-8.17	-2.3	106.97
2002	112.28	-7.83	-1.49	-1.19	-16.1	41.71	-8.97	-2.37	116.04
2003	106.24	-5.79	-.61	-.45	-12.2	46.2	-10.48	-3.11	119.80
2004	99.26	-4.25	-.2	-.02	-7.99	34.3	-10.51	-4.04	106.55
2005	91.89	-3.1	.17	.06	-5.27	17.56	-9.72	-1.29	90.30
Total Revenue									
Nominal	2072.19	239.19	-56.55	-34.19	-101.11	260.05	-90.12	-18.94	2270.52
10% disc	781.96	166.60	-22.23	-9.90	-28.72	56.40	-22.67	-3.96	917.48
8% disc	927.72	179.68	-26.39	-12.54	-35.58	75.37	-29.26	-5.33	1073.67

Table 5

Production Impact of Indexed Fixed Floor
(Millions Bbls.)

Year	Prudhoe	Kuparuk	Milne	Endicott	Lisburne	West Sak	Pt. Thomson	Seal Island	Total North Slope
1986	0	0	0	0	0	0	0	0	0
1987	0	0	0	0	-.21	0	0	0	-.21
1988	-15.79	-2.93	-.32	-.69	-.44	0	0	0	-20.17
1989	-14.15	-2.4	-.45	-2.18	-.61	0	0	0	-19.79
1990	-12.48	-2.4	-.49	-1.97	-.79	0	0	0	-18.13
1991	-11.77	-2.17	-.44	-1.87	-1.18	0	0	0	-17.43
1992	-10.74	-1.9	-.44	-1.84	-1.18	0	.25	0	-15.85
1993	-9.35	1.68	-.45	-1.86	-1.42	0	.43	0	-10.97
1994	-8.24	-.77	-.47	-1.34	-1.44	0	.42	0	-11.84
1995	-7.15	.04	-.51	1.09	-1.43	.06	.46	0	-7.44
1996	-7.23	.1	-.45	.82	-1.45	.03	.49	0	-7.69
1997	-6.87	-1.95	-.29	.63	-1.64	0	.5	2.99	-6.63
1998	-5.93	-1.65	-.27	.47	-1.28	-.01	.52	1.5	-6.65
1999	-5.46	-1.02	-.31	.37	-.79	-.04	.54	.03	-6.68
2000	-4.12	-.93	-.21	.36	-.57	-.04	.43	.2	-4.88
2001	-3.43	-.91	-.18	.35	-.37	-.06	.36	.15	-4.09
2002	-1.93	-.79	-.08	.08	-.23	.02	.32	.03	-2.58
2003	-1.84	-.91	-.04	-.02	-.25	.03	.27	.09	-2.67
2004	-2.12	-.94	0	-.02	-.32	.06	.2	.57	-2.57
2005	-1.88	-.67	0	-.01	-.36	.06	.16	.02	-2.68
Total	-130.48	-20.52	-5.4	-7.63	-15.36	.11	5.35	5.58	-168.95

Table 6

Revenue Impact of Fixed Indexed Floor
(Millions \$)

Year	Prudhoe	Kuparuk	Milne	Endicott	Lisburne	West Sak	Pt. Thomson	Seal Island	Total North Slope
1986	0	0	0	0	0	0	0	0	0
1987	223.91	80.84	5.87	0	2.27	0	0	0	312.89
1988	180.5	58.65	2.21	8.56	7.33	0	0	0	257.25
1989	109.65	44.29	6.21	32.07	14.94	0	0	0	207.16
1990	77.65	37.84	7.34	32.63	16.36	0	0	0	171.82
1991	76.29	36.51	7.13	34.7	26.88	0	0	0	181.51
1992	55.19	30.8	5.4	33.15	25.8	0	4.68	0	155.02
1993	43.17	24.46	5.27	23.42	29.17	0	5.72	0	131.21
1994	34.04	36.88	4.44	17.49	27.57	0	4.36	0	124.78
1995	24.57	30.63	3.56	13.49	25.57	5.28	3.4	0	106.50
1996	15.6	25.97	2.67	9.99	22.87	5.05	2.43	0	84.58
1997	10.22	6.09	2.04	7.53	20.46	5.51	0	0	51.85
1998	1.43	2.25	1.39	5.39	14.16	3.78	-.71	.07	27.76
1999	-2.09	.32	.8	3.76	10.22	2.46	-1.18	.04	14.33
2000	-1.79	-1.03	.42	2.2	7.62	.98	-.92	.04	7.52
2001	-1.61	-2.26	.02	-.1	5.84	.86	-.87	.02	1.90
2002	-2.19	-3.08	-.05	-.15	4.29	.39	-.98	.01	-1.76
2003	-5.34	-4.78	-.07	.1	2.71	.2	-.95	0	-8.13
2004	-8.9	-5.29	.03	.07	.61	.01	-.76	-.01	-14.24
2005	-8.95	-4.84	.05	.04	-.33	-.12	-.63	0	-14.78
Total Revenue									
Nominal	821.35	394.25	54.73	224.34	264.34	24.4	13.59	.17	1797.17
10% disc	562.83	247.88	30.11	117.70	117.13	7.82	7.57	.05	1091.10
8% disc	604.33	270.22	33.57	132.65	135.90	9.72	8.60	.06	1195.04

production which is reduced by nearly 170 million barrels. This impact on production is a direct result of the increased likelihood that such a tax would cause a premature shutdown in the already producing oil fields or would make additional investment uneconomic. This alternative has a most dramatic effect on Prudhoe Bay production because it significantly increases the probability that Prudhoe Bay shuts down prematurely. As will be seen, eliminating the ELF entirely results in much greater expected revenue without as severe an effect on production. This is because with the percent of value tax the State shares in the high oil price value cases and also shares the loss in the low oil price case (down to the current \$.80/bbl floor). The fixed indexed floor fails to reflect the relative change in profitability of falling oil prices. The indexed floor increases State revenue by roughly \$10 for every barrel of production foregone.

Eliminate the ELF Entirely

This alternative would remove entirely the severance tax relief given to low productive oil wells.

Tables 7 and 8 show the revenue and production effect on a field by field basis. Total average expected revenues through the year 2005 increase by \$5032.43 million, \$2111.87 million discounted at 8 percent, while average expected production falls by 84.67 million barrels. Prudhoe Bay because it dominates North Slope production over the next ten years accounts for over half of the increased revenue. Kuparuk one of North America's largest fields because its current ELF is roughly .6 accounts for the largest relative increase.

Prudhoe Bay with its large reserves accounts for a 28 million barrels of the production loss, while the West Sak field with its relatively low productive high cost wells accounts for another 21 million barrels of the average expected decline in production. Eliminating the ELF increases State revenue by roughly \$49 for every barrel of oil production foregone.

Table 7

Production Impact of Eliminating the ELF
(Millions Bbls.)

Year	Prudhoe	Kuparuk	Milne	Endicott	Lisburne	West Sak	Pt. Thomson	Seal Island	Total North Slope
1986	0	0	0	0	0	0	0	0	0
1987	0	0	0	0	-.05	0	0	0	-.05
1988	-1.1	-1.01	-.08	-.15	-.09	0	0	0	-2.43
1989	-.96	-.18	-.11	-.51	-.12	0	0	0	-1.88
1990	-.85	-.18	-.16	-.55	-.15	0	0	0	-1.89
1991	-.8	-.17	-.12	-.58	-.22	0	0	0	-1.89
1992	-.72	-.14	-.12	-.6	-.22	0	-.3	0	-2.1
1993	-.67	-.13	-.13	-.62	-.27	0	-.5	0	-2.32
1994	-1.19	-.52	-.67	-.49	-4.76	0	-.5	0	-8.13
1995	-.99	-.87	-.61	-2.49	-3.9	-1.41	-.55	0	-10.82
1996	-3.2	-.73	-.5	-1.98	-3.23	-1.71	-.57	0	-11.92
1997	-2.97	-.8	-.14	-1.56	-.48	-2.13	-.58	-2.99	-11.65
1998	-2.65	-.7	-.08	-.19	-.44	-1.97	-.6	-1.92	-8.55
1999	-1.63	-.47	-.09	-.07	-.2	-1.69	-1.75	-.64	-6.54
2000	-.79	-.39	-.08	-.16	-.09	-1.55	-1.45	-.74	-5.25
2001	-1.01	-.37	-.1	-.21	.06	-1.3	-1.23	-.69	-4.85
2002	-1.75	-.39	-.08	-.1	.19	-2.93	-.34	-.55	-5.95
2003	-2.61	-.5	-.06	-.02	.17	-2.63	-.27	-.62	-6.54
2004	-2.15	-.64	-.03	.01	.95	-2.49	-.2	-1.06	-6.51
2005	-2.04	-.58	-.05	-.08	-.06	-1.15	-.14	-.8	-4.9
Total	-28.08	-8.77	-3.21	-10.35	-13.81	-20.96	-8.98	-10.01	-104.17

Table 8

Revenue Impact of Eliminating the ELF
(Millions \$)

Year	Prudhoe	Kuparuk	Milne	Endicott	Lisburne	West Sak	Pt. Thomson	Seal Island	Total North Slope
1986	0	0	0	0	0	0	0	0	0
1987	5.76	30.42	2.03	0	.58	0	0	0	38.79
1988	100.45	38.53	1.17	3.19	.57	0	0	0	143.91
1989	114.81	49.32	3.08	13.28	7.21	0	0	0	187.7
1990	125.23	55.31	3.9	14.88	13.53	0	0	0	212.85
1991	129.21	56.02	4.01	15.87	21.39	0	0	0	226.5
1992	134.94	59.97	5.59	17.84	23.66	0	3.2	0	245.2
1993	140.42	59.92	6.48	24.57	33.16	0	4.07	0	268.62
1994	148.74	62.93	3.18	24.04	3.76	0	3.93	0	246.58
1995	148.9	59.93	2.92	9.4	13.16	10.7	4.29	0	249.3
1996	152.12	63.71	2.91	11.01	21.54	14.22	4.86	0	270.37
1997	162.67	60.9	5.07	11.81	46.78	28.35	6.7	0	322.28
1998	167.04	60.34	4.95	22.4	47.85	33.54	7.66	-2.04	341.74
1999	169.48	58.82	4.63	22.23	47.02	39.63	-6.57	3.12	338.36
2000	171.87	57.33	4.11	20.46	46.3	55.66	-2.08	4.45	358.1
2001	167.58	54.07	3.56	15.26	45.39	64.29	2.72	5.41	358.28
2002	163.87	50.23	3.11	11.19	44.26	48.56	14.08	6.66	341.96
2003	159.23	30.89	2.54	10.03	41.89	60.19	13.48	9.99	328.24
2004	154.36	19.41	1.87	7.3	37.3	72.01	13.56	11.64	317.45
2005	147.21	12.71	.32	4.91	33.15	67.92	13.51	6.47	286.2
Total Revenue									
Nominal	2663.89	940.76	65.43	259.67	528.5	495.07	83.41	45.7	5082.43
10% disc	948.54	383.01	26.18	98.23	157.56	107.91	20.72	8.45	1750.61
8% disc	1137.24	448.57	30.79	116.89	196.10	143.89	26.70	11.68	2111.87

Summary and Analysis

All four of the proposed changes in the severance tax result on average in increased State revenues. Average expected oil production, however, is lower due to the negative impact of potentially higher taxes on expected profitability.

The effect of each of these proposed changes is analysed using the Monte Carlo simulation model. This type of model evaluates many possible combinations of variables effecting oil production revenues including high prices where taxes are not so important in determining development feasibility and low prices where taxes may be an important consideration in deciding whether or not a project is viable. The output of the model is determined not only by the scenarios of the prices and costs and quantities entered as input into the model but also by the probability assigned to each scenario. The model results, in this case State petroleum production revenue by year to the year 2005, are depicted as the probability distribution of possible outcome. Another way of looking at the output is to say many possible outcomes are evaluated and this is what to expect on average will occur. The analysis of these changes in severance tax law is of course only as good as the input into this model. Department of Revenue analysts have weighted the inputs into the model which may or may not correspond to the way in which the different producing oil companies would weight them. Further the feasibility part of the model uses a hurdle rate 8% real and assumes no budget constraints and no competing global investment alternatives. Those caveats aside the results of this analysis are summarized as follows.

1. Fixing the severance tax floor at \$0.80 per barrel has the least impact on expected State revenues and has the least negative impact on expected North Slope production.

2. Eliminating the ELF entirely, generates the largest average expected increase in State revenue.
3. Increasing the fixed floor to \$1.50 and indexing it to account for inflation has the greatest negative effect on average expected production.
4. Because the real upside potential for State revenue continues to depend on the share of the value of Prudhoe Bay production taken by the State, modifying the ELF to reflect total field productivity is the most efficient alternative in terms of dollars gained for every barrel foregone (\$80 per barrel as opposed to \$7 per barrel for the fixed \$.80 per barrel ELF alternative). This is because this tax increases revenues while at the same time mitigating the negative effect on average expected production. The ranking of ELF alternatives using this type of revenue maximizing criteria is as follows.

- | | |
|--------------------------|----------|
| 1) Modified Exponent ELF | \$80/bbl |
| 2) Eliminate ELF | \$49/bbl |
| 3) Indexed Floor | \$10/bbl |
| 4) Fixed \$.80/bbl Floor | \$7/bbl |

5. The production disincentives are generally associated with development of the so called marginal fields, and enhanced recovery investment in Prudhoe Bay and Kuparuk although in some very low price cases no doubt potentially higher taxes cause even these already producing fields to be shut-in.

The above analysis says nothing about the impact of any of these hypothetical tax changes on Cook Inlet. Currently Cook Inlet production is roughly 50 thousand barrels per day. Because much of current production is from a large number of wells with average daily production less 300 barrels, the ELF under current law is zero or nearly zero for most oil producing leases. As a result FY 1986 oil severance collections are estimated to be less than \$2 million or roughly \$.12 per barrel. If a minimum tax of \$.80 per barrel were levied, assuming no fields were abandoned,

severance taxes would increase to \$12.73 million. Although there is a considerable difference in terms of well productivity and profitability among the Cook Inlet fields, given the economics of field abandonment it is likely that the bulk of production would continue even with higher taxes burden. On the other hand additional investment in further production would no doubt be much much lower than it would be under the current tax regime. It may be important to note that Cook Inlet oil production is an integral part of the regional economic base on the Kenai Peninsula. Eliminating the ELF would probably shutin Cook Inlet production. The modified exponent ELF would have no negative impact on Cook Inlet because all these fields produce much less than 100,000 bbls/day.

on Super Calc - got from
Tom Chester

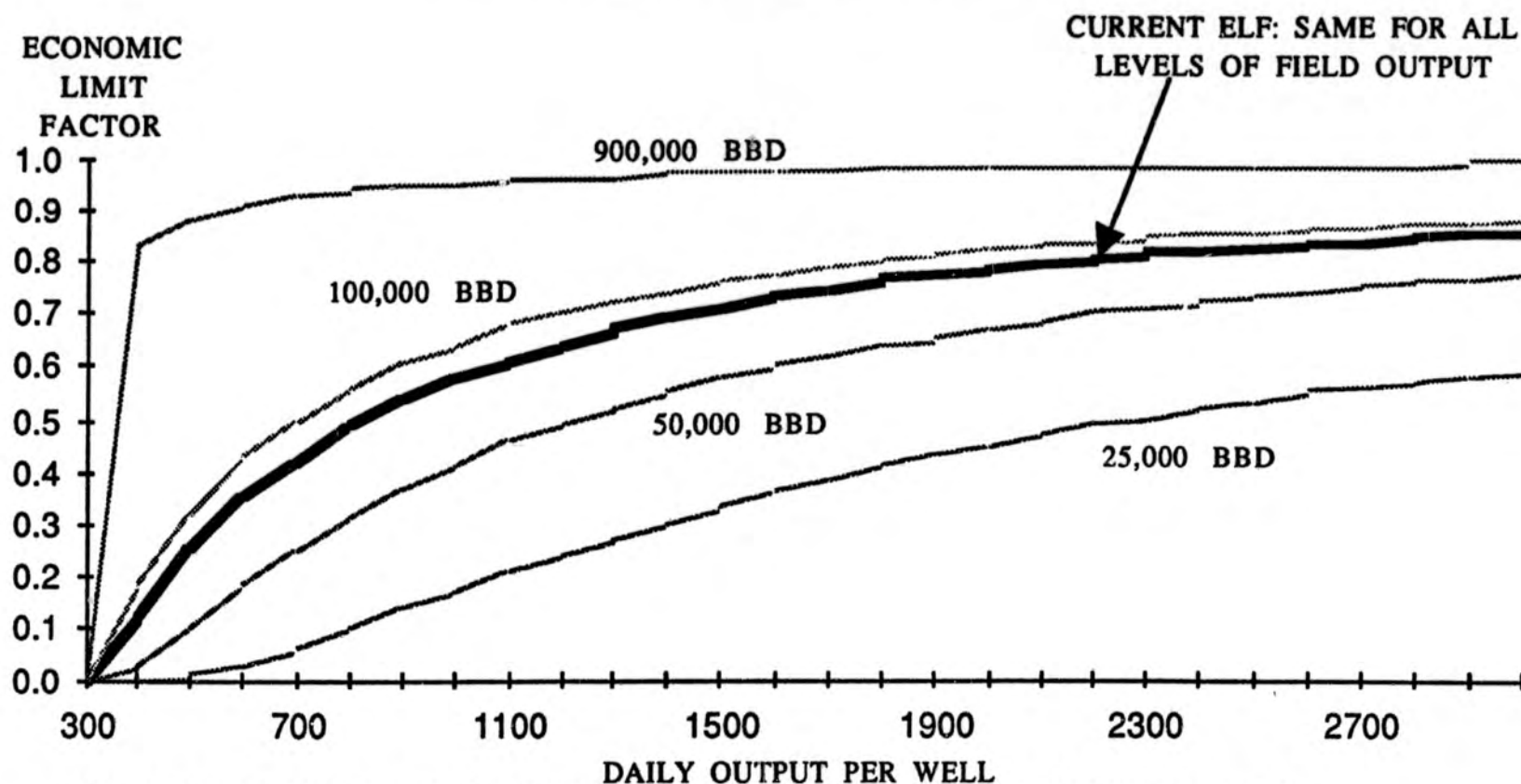
ALTERNATIVE ELF (Options 2 &4)

The existing ELF formula is based on average daily well productivity and does not take account of the average daily production of the entire field. A modification of the ELF formula that incorporates overall field production characteristics could increase the effective severance tax rate on large, productive fields such as Prudhoe Bay and Kuparuk, and reduce the effective tax rate on the small, marginal fields that most need the economic benefits of the lower tax burden.

Modification of the ELF formula to include total field productivity would improve the chances of a small, marginal field being brought into commercial production since it would result in a lower severance tax rate. These fields may have good well productivity characteristics but high costs because of the inability to spread fixed costs over a large number of producing wells (as in the case of Prudhoe Bay and Kuparuk).

One such alternate Economic Limit Factor, which reduces the effective severance tax rate at marginal fields, is presented in the accompanying material.

**THE ECONOMIC LIMIT FACTOR (ELF):
CURRENT AND ALTERNATE FOR VARIOUS LEVELS OF
WELL OUTPUT AND FIELD PRODUCTION**



NOTE: BBD FIGURES REPRESENT DAILY FIELD PRODUCTION IN BARRELS PER DAY

COMPUTING THE ALTERNATE ELF

The alternate Economic Limit Factor formula is:

$$\text{Alternate ELF} = (1 - \text{PEL}/\text{TP})\text{EXP}\{(45,500,000 * \text{WD})/(\text{PEL} * \text{TP}/\text{Days})\}$$

PEL (Production at the Economic Limit) =

(300 barrels per day)*

(average number of operating wells during the month)*

(number of days of production for the month). For example:

300 barrels * 541 wells * 30 days = 4,869,000 barrels per month at the Economic Limit

TP (Total Production for the field) =

(average number of operating wells during the month)*

(number of days of production for the month)*

(average daily production per well). For example:

541 wells * 30 days * 2477 barrels per well = 40,201,710 barrels of production per month

WD (Well Days) =

(average number of operating wells during the month)*

(number of days of production for the month). For example:

541 wells * 30 days = 16,230 well days

TP/Days =

(average number of operating wells during the month)*

(average daily production per well). For example:

541 wells * 2477 barrels per well = 1,340,057 barrels of production per day

CALCULATION EXAMPLE

Current ELF

$$(1 - 4,869,000/40,201,710)\text{EXP}\{460 * 16,230/4,869,000\} = .82$$

Alternate ELF

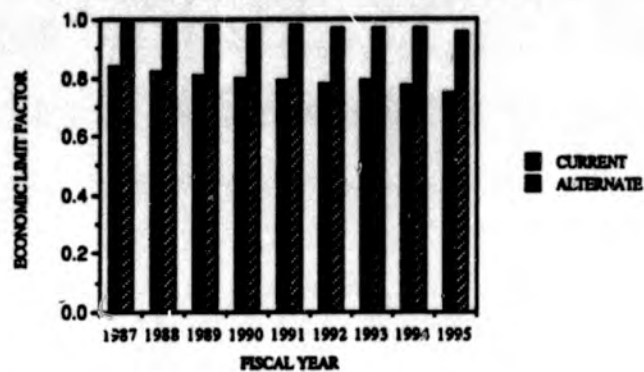
$$(1 - 4,869,000/40,201,710)\text{EXP}\{(45,500,000 * 16,230)/(4,869,000 * 1,340,057)\} = .98$$

$$= (1 - .1211)\text{EXP}(.1132)$$

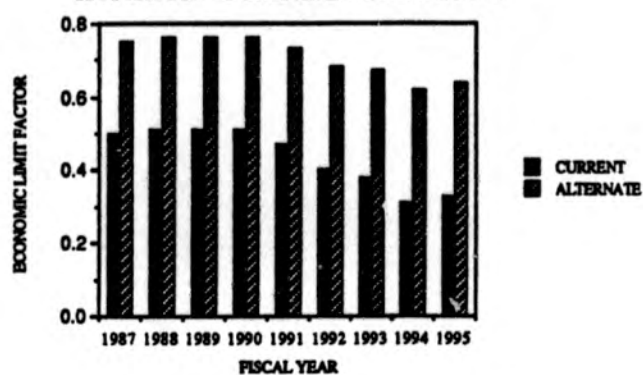
$$= (.8789)\text{EXP}(.1132)$$

$$= .98$$

PRUDHOE BAY - COMPARISON OF ELF'S



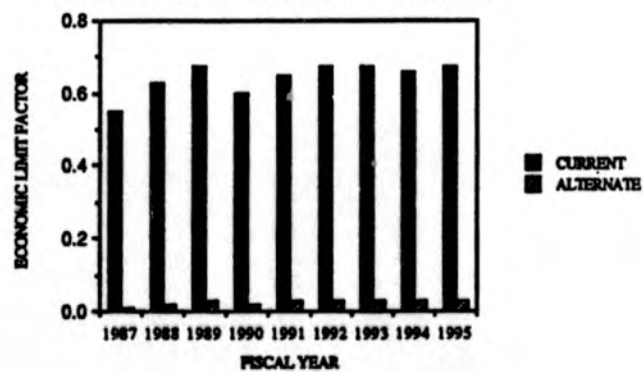
KUPARUK - COMPARISON OF ELF'S



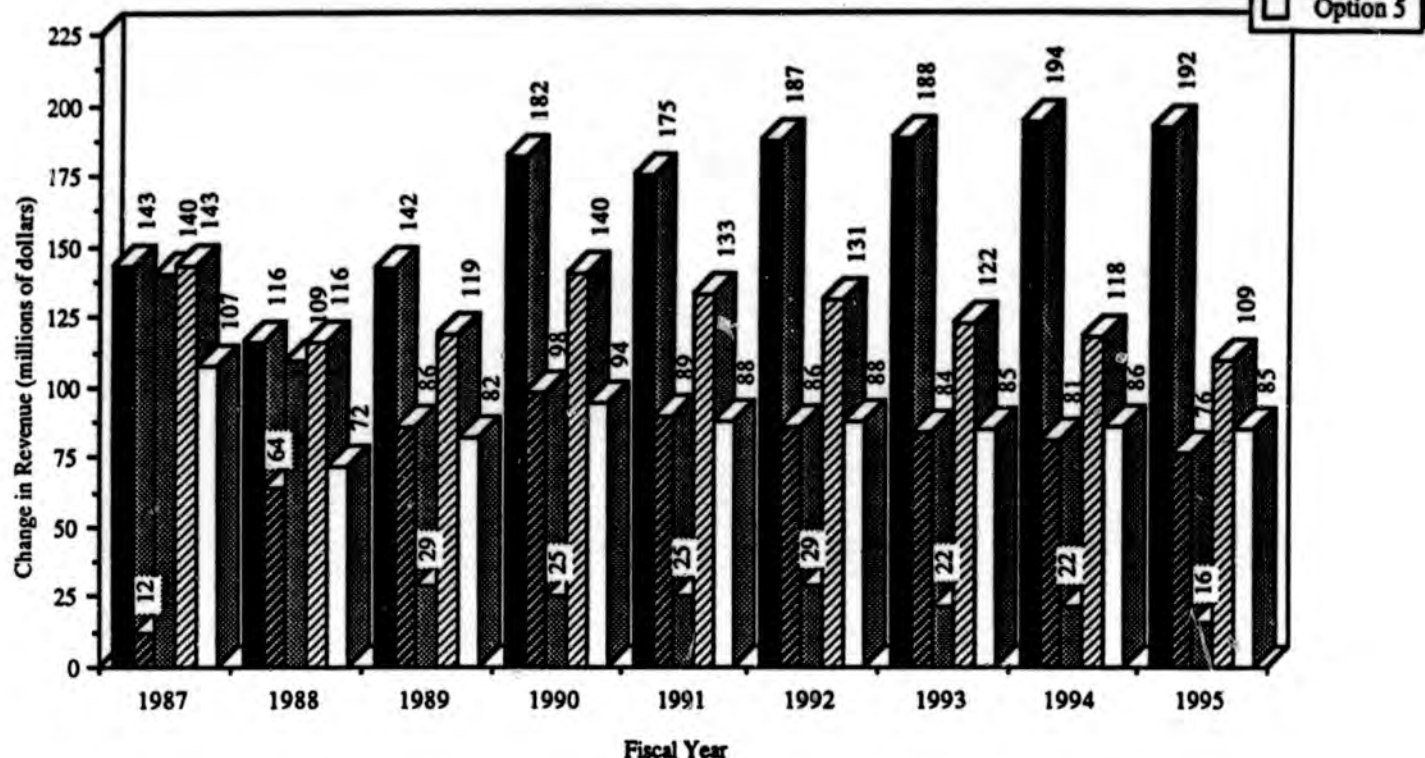
ENDICOTT - COMPARISON OF ELF'S



MILNE POINT - COMPARISON OF ELF'S



INCREASE IN GENERAL FUND REVENUE RESULTING FROM VARIOUS CHANGES IN THE ECONOMIC LIMIT FACTOR



Option 1: Repeal of the current Economic Limit Factor.

Option 2: Adoption of an Alternative Economic Limit Factor (explained below).

Option 3: Adoption of an 80 cent per barrel minimum severance tax which is not subject to the current Economic Limit Factor.

Option 4: Adoption of an 80 cent per barrel minimum severance tax which is not subject to the alternate Economic Limit Factor.

Option 5: Sets the effective Economic Limit Factor (current law) to 1 for all fields which have a computed Economic Limit Factor above .7 (seven-tenths).

The Alternative Economic Limit Factor mentioned in Options 2 and 4 is a modification of the existing Economic Limit Factor that incorporates overall field production characteristics. The inclusion of overall field production in the Economic Limit Factor increases the effective severance tax rate on large, productive fields (Prudhoe Bay and Kuparuk) and reduces the effective tax rate on the small, marginal fields (all but Prudhoe and Kuparuk). The alternative Economic Limit Factor =

$$(1 - \text{PEL}/\text{TP}) \text{EXP}\{ (45,500,000 \times \text{WD}) / (\text{PEL} \times \text{TP}/\text{Days}) \}.$$

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	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
JUNE 1986 PRICE/OUTPUT ASSUMPTIONS														
World Oil Price (30TH PERCENTILE)	11.111	12.26	13.97	14.79	15.19	15.51	15.3	15.9	16.85	16.25	17.22	18.54	19.87	21.57
Average Rate of Inflation	4.2	5.01	5.01	5.01	5.01	5.01	5.78	5.78	5.78	5.78	5.78	6.4	6.4	6.4
Compound Inflation Factor	1.042	1.094204	1.149024	1.206590	1.267040	1.330519	1.407423	1.488772	1.574823	1.665848	1.762134	1.874910	1.994904	2.122578
World/ANS Qual. & Mktng Differential	2.735	2.811	2.47	2.508	2.71	2.604	2.406	2.228	2.117	1.636	.611	-1.801	-4.339	-6.662
TransAK Pipeline Tariff(JUNE 86)	4.54	4.33	4.11	3.415	3.85	3.727	3.588	3.607	3.647	3.699	3.856	4.224	4.938	5.827
Successful Effort Mean Price (\$/bbl)	3.836	5.119	7.39	8.867	8.63	9.179	9.306	10.065	10.686	10.915	12.753	16.117	19.271	22.405
Success Ratio	1	1	.996	.9933333	.9913333	.9826667	.9746667	.9686667	.9653333	.942	.9033333	.8086667	.7413333	.6753333
ANS Netback Price PS#1 (\$/bbl)	3.836	5.119	7.36044	8.807887	8.555207	9.019897	9.070248	9.74963	10.31555	10.28193	11.52021	13.03328	14.28623	15.13084
Prudhoe Bay Prod. (MMbbl/yr)														
Prudhoe Bay Price (\$/bbl)	3.834	5.119	7.36044	8.807887	8.555207	9.019897	9.070248	9.74963	10.31555	10.28193	11.52021	13.03328	14.28623	15.13084
Wells	525.5	539.81	524.7	504.86	488.88	465.37	446.17	419.65	393.19	372.82	353.41	333.05	317.55	300.49
TOTAL DAILY OUTPUT	1493151	1358904	1213699	1147945	1041096	931506.8	823287.7	702739.7	601369.9	571808.2	521917.8	453506.8	457534.2	400000
TOTAL MONTHLY OUTPUT	45416667	41333333	36916667	34916667	31666667	28333333	28083333	24416667	21333333	21833333	18916667	16166667	13916667	12166667
TOTAL DAILY OUTPUT PER WELL	2839.229	2517.375	2313.129	2273.789	2129.553	2001.648	2069.363	1912.879	1783.794	1925.348	1759.763	1595.877	1440.826	1331.159
PEL	4733100	4836290	4722300	4534740	4399920	4188330	4015330	3776850	3538710	3355380	3180690	2997450	2857950	2704410
WELL DAYS	15777	16194.3	15741	15145.8	14666.4	13961.1	13383.1	12589.5	11795.7	11184.6	10602.3	9991.5	9526.5	9014.7
ALTERNATE ELF	.988834	.9861412	.9850416	.9817494	.9784425	.9742915	.9749718	.9687491	.9615381	.9635583	.9560980	.9431622	.9266324	.9090835
PRESUMED ELF	.8426277	.8731900	.8081591	.8049664	.7792950	.7796015	.7865083	.7698430	.7540114	.7712654	.7508217	.7266618	.6990889	.6760007
NOMINAL TAX RATE	.15	.15	.15	.15	.15	.15	.15	.15	.15	.15	.15	.15	.15	.15
EFFECTIVE TAX RATE CURRENT ELF	.15	.15	.15	.15	.15	.15	.15	.15	.15	.15	.15	.15	.15	.15
EFF. TAX CUR. ELF NO 10 YEAR LIMIT	.15	.15	.15	.15	.15	.15	.15	.15	.15	.15	.15	.15	.15	.15
EFFECTIVE TAX RATE ALTERNATIVE ELF	.15	.15	.15	.15	.15	.15	.15	.15	.15	.15	.15	.15	.15	.15
ROYALTY PERCENTAGE	.125	.125	.125	.125	.125	.125	.125	.125	.125	.125	.125	.125	.125	.125
SEVERANCE TAX CURRENT ELF	274.3939	274.3255	345.8627	389.9086	338.0651	313.7997	315.5380	288.6405	261.3423	272.6962	257.7047	241.1499	218.9102	196.0029
SEVERANCE TAX PER BARREL CUR. LAW	.5754	.6320864	.8922610	1.063508	1.016737	1.054789	1.070074	1.125853	1.166707	1.189514	1.297443	1.420618	1.498102	1.534269
SEVERANCE TAX NO ELF	381.5	347.2	427.9636	484.3787	426.6909	402.5129	401.1884	374.9342	346.6025	353.5699	343.2303	331.8599	313.1364	289.9448
CUR SEV. TAX NO ELF ON CENTS/BBL	381.5	347.2	427.9636	484.3787	426.6909	402.5129	401.1884	374.9342	346.6025	353.5699	343.2303	331.8599	313.1364	289.9448
CUR SEV TAX NO 10 YEAR LIMIT	381.5	347.2	427.9636	484.3787	426.6909	402.5129	401.1884	374.9342	346.6025	353.5699	343.2303	331.8599	313.1364	289.9448
SEVERANCE TAX PER BARREL CUR. LAW	.5754	.6320864	.8922610	1.063508	1.016737	1.054789	1.070074	1.125853	1.166707	1.189514	1.297443	1.420618	1.498102	1.534269
SEVERANCE TAX ALTERNATIVE ELF	274.3939	328.6285	420.7060	475.5385	417.4926	392.1649	391.1474	363.2172	333.2716	341.3216	328.1618	312.9977	290.1623	263.5840
SEV TAX ALT ELF NO ELF ON CENTS/BBL	381.5	347.2	427.9636	484.3787	426.6909	402.5129	401.1884	374.9342	346.6025	353.5699	343.2303	331.8599	313.1364	289.9448
CONSERVATION TAX	0	0	.4845313	.4582813	.415625	.371875	.3685938	.3204688	.28	.2865625	.2482813	.2121875	.1826563	.1596875
Gathering & Cleaning Charge	.7261	.7366066	.7945126	.8343177	.8761170	.9200105	.9661030	1.021944	1.081012	1.143495	1.209589	1.279503	1.361391	1.448520
Royalties if Taken InValue	0	0	363.5882	471.6157	364.7568	344.2452	341.3871	319.6515	295.5053	299.2838	292.5639	285.0291	269.8061	249.7024
InKind Contracts Longterm	0	0	67.86992	77.95507	68.08805	64.25922	63.72571	59.66839	55.16108	55.86640	54.61202	53.20553	50.36390	46.61120
MAPCO (18.6667% exhibit B 2003)	0	0	104.0682	117.0287	103.1913	97.17414	96.83707	90.29805	83.33803					
Tesoro (24.533% in-vr.30 '95)	0	0	59.20732	66.51228	58.65704	55.22126	55.02813	51.29389	47.32775					
Tesoro (13.867% in-value + 0.35)	0	0	40.72290	45.79445	40.37974	38.02518	37.89328	35.33450	32.61098					
Chevron (9.6% in-value + 0.30)	0	0	11.31206	12.72084	11.21674	10.56268	10.52604	9.815261	9.058718					
GVEA (2.6667% in-value + 0.30)	0	0	11.31206	12.72084	11.21674	10.56268	10.52604	9.815261	9.058718					
InKind Contracts Shortterm	0	0	283.1804	320.0113	281.5328	265.2425	264.0102	246.4101	227.4966	55.86640	54.61202	53.20553	50.36390	46.61120
One-year (26.67% bprice+.84)	0	0	111.5001	128.0685	111.8585	105.5683	104.6918	98.02625	90.62142	243.4174	237.9519	231.8236	219.4422	203.0912
Six Months	0	0	394.6806	448.0798	393.3913	370.8108	369.7021	344.4363	318.1180	299.2838	292.5639	285.0291	269.8061	249.7024
Total In-Kind Royalties	0	0	31.09234	30.46417	28.63458	26.56538	27.31495	24.78483	22.61270	0	0	0	0	0
In-Value Royalties	241	346	394.6806	448.0798	393.3913	370.8108	369.7021	344.4363	318.1180	299.2838	292.5639	285.0291	269.8061	249.7024
TOTAL ROYALTIES	241	346	394.6806	448.0798	393.3913	370.8108	369.7021	344.4363	318.1180	299.2838	292.5639	285.0291	269.8061	249.7024
(Estimated InKind Premium MM\$)	0	0	31.09234	30.46417	28.63458	26.56538	27.31495	24.78483	22.61270	0	0	0	0	0
Ruparuk River Prod. (MMbbl/yr)														
Ruparuk River Price (\$/bbl)	3.016	4.299	6.54044	7.987887	7.735207	8.199897	8.250248	8.92963	9.495552	9.46193	10.70021	12.21328	13.46623	14.31084
WELLS	282.49	283.85	283.85	283.85	275.63	275.63	253.37	253.97	220.11	220.17	196.63	178.16	160.28	144.03
TOTAL DAILY OUTPUT	235616.4	241095.9	241095.9	241095.9	210958.9	183561.6	161643.8	142465.8	128767.1	109589.0	93150.68	79452.05	65753.42	54794.52
TOTAL MONTHLY OUTPUT	7166667	7333333	7333333	7333333	6416667	5583333	4916667	4333333	3916667	3333333	2833333	2416667	2000000	1666667
TOTAL DAILY OUTPUT PER WELL	834.0700	849.3778	849.3778	849.3778	765.3699	665.9712	637.9754	560.9350	585.0126	497.7474	473.7359	445.9590	410.2410	380.4382
PEL	2542410	2554650	2554650	2554650	2480670	2480670	2280370	2285730	1980990	1981530	1769670	1603440	1442520	1296270
WELL DAYS	8474.7	8515.3	8515.3	8515.3	8268.9	7601.1	7619.1	7619.1	6603.3	6605.1	5898.9	5344.8	4808.4	4320.9
ALTERNATE ELF	.7542573	.7590596	.7590596	.7590596	.7300814	.6850998	.6695290	.6172002	.6352920	.5593600	.5322421	.4960505	.4394140	.3797921
PRESUMED ELF	.5048248	.5126822	.5126822	.5126822	.4663249	.3993200	.3775073	.3092992	.3320009	.2428235	.2147879	.1804001	.1333321	.0923158
NOMINAL TAX RATE	.1363	.15	.15	.15	.15	.15	.15	.15	.15	.15	.15	.15	.15	.15
EFFECTIVE TAX RATE CURRENT ELF	.0688076	.0769023	.0769023	.0769023	.0699487	.0598980	.0566261	.0463949	.0498001	.0364235	.0322182	.0270600	.0199998	.0138474
EFFECTIVE TAX RATE ALTERNATIVE ELF	.1028053	.1138589	.1138589	.1138589	.1095122	.1027650	.1004293	.0925800	.0952398	.0839040	.0798363	.0744076	.0659121	.0569688
ROYALTY PERCENTAGE	.125	.125	.125	.125	.125	.125	.125	.125	.125	.125	.125	.125	.125	.125
SEVERANCE TAX CURRENT ELF	30.39045	31.58123	38.72908	47.30011	36.45445	28.79411	24.11813	18.85016	19.44718	12.06229	10.25605	8.386222	5.655767	3.467930
SEVERANCE TAX PER BARREL CUR. LAW	.4038599	.4												

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Fiscal Years

1987 1988 1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000

7.7	9.4	10.8	7.5	7.5	7.3	6.6	5.9	5.3	4.7	3.7	2.8	2	1.3
4.246	5.489	7.73044	9.177887	8.925207	9.389897	9.440248	10.11963	10.68555	10.65193	11.89021	13.40328	14.65623	15.86084
22.45	22.45	22.45	19.48	17	15.52	13.98	12.61	11.24	10.2	9.21	8.25	8.05	7.92
95.89	27533.42	29589.04	20547.95	20547.95	20547.95	18082.19	16164.38	14520.55	12876.71	10136.99	7671.233	5479.452	3561.644
666.7	783333.3	900000	625000	625000	625000	550000	491666.7	441666.7	391666.7	308333.3	233333.3	166666.7	108333.3
6.6933	11.146	1317.997	1054.823	1208.703	1323.966	1293.433	1281.870	1291.864	1262.423	1100.650	929.8464	680.6773	449.7025
02050	202050	202050	175320	153000	139680	125820	113490	101160	91800	82890	74250	72450	71280
673.5	673.5	673.5	584.4	510	465.6	419.4	378.3	337.2	306	276.3	247.5	241.5	237.6
53340	.0161050	.0296386	.0105018	.0205319	.0301784	.0274614	.0264618	.0273247	.0248181	.0131235	.0049860	.0003729	.0000004
45090	.6282333	.6729916	.5986241	.6456899	.6743629	.6672248	.6644400	.6668495	.6596507	.6138804	.5502962	.4102150	.1841544
.1225	.1225	.1225	.1225	.15	.15	.15	.15	.15	.15	.15	.15	.15	.15
79274	.0769586	.0824413	.0733313	.0968535	.1011544	.1000837	.0996660	.1000274	.0989476	.0920821	.0825444	.0615323	.0277732
006534	.0019729	.0036307	.0012865	.0030798	.0045268	.0041192	.0039663	.0040967	.0037227	.0019685	.0007479	.0000559	.0000001
.1625	.1625	.1625	.1625	.1625	.1625	.1625	.1625	.1625	.1625	.1625	.1625	.1625	.1625
60712	3.956615	5.764458	4.227456	5.429747	3.966118	5.222465	4.983661	4.744350	4.148741	3.392744	2.594629	1.510567	.4687149
5.159	6.298	8.563424	7.061954	8.409218	8.847044	7.827146	7.500543	7.114574	6.289299	5.526718	4.714604	3.682379	2.531481
36072	.5025868	.6373088	.6730278	.8644373	.9498297	.9448151	1.008583	1.068848	1.053983	1.094875	1.106366	.9018312	.4305074
5.159	6.298	7.236	5.025	5.429747	3.966118	5.222465	4.983661	4.744350	4.148741	3.392744	2.594629	1.510567	.871
75180	.1014294	.2535675	.0761535	.1726370	.2669898	.2149440	.1984778	.1944039	.1560885	.0725301	.0235072	.0013733	.0000009
5.159	6.298	7.236	5.025	5.025	5.025	4.422	3.953	3.551	3.149	2.479	1.876	1.34	.871
00609	.0098406	.0123063	.0078516	.0078516	.0078516	.0069094	.0061766	.0055484	.0049203	.0038734	.0029313	.0020938	.0013609
0	0	0	0	0	0	0	0	0	0	0	0	0	0
62758	8.384448	13.56692	11.18355	10.87760	11.44394	10.12467	9.702195	9.202932	8.135412	7.148989	6.098493	4.763276	3.274553
23469	12.34106	19.33138	15.41301	16.30734	17.41006	15.34713	14.68586	13.94728	12.28415	10.56173	8.692921	6.273844	3.743268
0	9.56	31.1	30.8	30.8	30.8	30.8	23.7	21.3	16.5	12.9	10.1	7.76	5.69
2.716	3.999	6.24044	7.687887	7.435207	7.899897	7.950248	8.62963	9.195552	9.16193	10.40021	11.91328	13.16623	14.01084
1	62.36	111.46	111.46	111.46	111.46	111.46	100.02	90.52	81.56	73.18	65.81	59.56	53.78
0	26191.78	85205.48	84383.56	84383.56	84383.56	84383.56	64931.51	58356.16	45205.48	35342.47	27671.23	21260.27	15589.04
0	796666.7	2591667	2566667	2566667	2566667	2566667	1975000	1775000	1375000	1075000	841666.7	646666.7	474166.7
0	420.0093	764.4489	757.0748	757.0748	757.0748	757.0748	649.1852	644.6770	554.2604	482.9525	420.4716	356.9556	289.8669
9000	561240	1003140	1003140	1003140	1003140	1003140	900180	814680	734040	658620	592290	536040	484020
30	1870.8	3343.8	3343.8	3343.8	3343.8	3343.8	3000.6	2715.6	2446.8	2195.4	1974.3	1786.8	1613.4
0	.0008597	.4184052	.4102941	.4102941	.4102941	.4102941	.2414403	.2025989	.0772495	.0170732	.0012719	.0000034	0
0	.1464877	.4657698	.4612840	.4612840	.4612840	.4612840	.3864156	.3828616	.3027382	.2257357	.1471054	.0599538	0
0	.1225	.1225	.1225	.1225	.1225	.15	.15	.15	.15	.15	.15	.15	.15
0	.0179447	.0570568	.0563073	.0565073	.0565073	.0691924	.0579623	.0574292	.0454107	.0338603	.0220658	.0089931	0
0	.0001053	.0512546	.0502610	.0502610	.0502610	.0615441	.0362160	.0303898	.0115874	.0025610	.0001908	.0000005	0
.1438	.1438	.1438	.1438	.1438	.1438	.1438	.1438	.1438	.1438	.1438	.1438	.1438	.1438
0	.9592331	9.921946	11.45612	11.72094	14.50662	10.14990	9.630874	5.877663	3.889542	2.273253	.7866948	0	0
0	6.548218	21.30226	24.83528	24.01901	25.82016	31.44835	26.26679	23.15498	19.41500	17.23052	15.45323	13.12169	10.23866
0	.1171901	.3726158	.4344217	.4201434	.4464018	.5500984	.5001936	.5280935	.4160500	.3521547	.2628762	.1184048	0
0	.9592331	9.921946	11.45612	11.72094	14.50662	10.14990	9.630874	5.877663	3.889542	2.273253	.7866948	0	0
0	.00546292	8.912975	10.18977	9.854857	10.47077	12.90307	6.341862	5.096371	1.499798	.2941806	.0196553	.0000444	0
0	6.548218	21.30226	21.09677	21.09677	21.09677	21.09677	16.23355	14.58965	11.30184	8.835984	6.918096	5.315290	3.897422
0	.0102316	.0332848	.0329637	.0329637	.0329637	.0329637	.0253649	.0227963	.0176591	.0138062	.0108095	.0083051	.0060897
0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	5.497537	27.90837	34.04996	32.93083	34.98896	35.21197	29.41030	28.16542	21.73851	19.29260	17.30261	14.69204	11.46398
0	6.456770	37.83032	45.50667	44.01041	46.76101	49.71859	39.56019	37.79630	27.61617	23.18214	19.57586	15.47874	11.46398
5.52	7.57	13.27	18.96	28.03	27.9	33.64	35.23	34.9	34.63	34.41	26.64	20.67	16.04
3.566	4.849	7.09044	8.537887	8.285207	.749897	8.800248	9.47963	10.04555	10.01193	11.25021	12.76328	14.01623	14.86084
50.56	79.47	104.24	116.87	116.87	116.87	116.87	105.42	94.57	85.11	77.04	69.5	62.04	53.78
23.29	20739.73	36356.16	51945.21	76794.52	76438.36	92164.38	96520.55	95616.44	94876.71	94273.97	72986.30	56630.14	43945.21
50000	630833	1058333	1580000	2335833	2325000	2803333	2935833	2908333	2885833	2867500	2220000	1722500	1336667
8.261	260.97	48.7736	444.4700	657.0935	654.0460	788.6060	825.8796	907.0047	1003.243	1107.672	947.3819	814.8221	708.3366
58550	7152	938160	1051830	1051830	1051830	1051830	948780	851130	765990	693360	625500	558360	558360
528.5	2384.1	3127.2	3506.1	3506.1	3506.1	3506.1	3506.1	3162.6	2837.1	2553.3	2311.2	2085	1861.2
0	0	.0003823	.0407890	.3067284	.3027381	.4611704	.4980600	.5345489	.5719860	.6065393	.4592834	.2986760	.1546652
0	0	.0489764	.1784989	.3925590	.3902052	.4799751	.5005191	.5402073	.5799708	.6161177	.5577526	.4945901	.4297291
.1225	.1225	.1225	.1225	.1225	.15	.15	.15	.15	.15	.15	.15	.15	.15
0	0	.0059996	.0218661	.0480885	.0585308	.0719963	.0750779	.0810311	.0869956	.0924177	.0836629	.0741885	.0644594
0	0	.0000468	.0049966	.0375742	.0454107	.0691756	.0747090	.0801823	.0857979	.0909809	.0688925	.0448014	.0231998
.125	.125	.125	.125	.125	.125	.125	.125	.125	.125	.125	.125	.125	.125
0	0	.4939407	3.097194	9.771820	12.30258	18.64958	21.93936	24.87559	26.39221	31.30461	24.89072	18.80687	13.44441
3.864	5.299	10.08529	17.35133	24.89262	32.04103	38.85529	43.83322	46.0491	45.50610	50.80946	44.62681	38.02517	31.28579
0	0	.0425398	.1866904	.3984229	.5121383	.6335850	.7117104	.8140021	.8709941	1.039718	1.067813	1.039844	.9579204
1.358	3.864	5.299	9.289	13.272	19.621	23.548	24.661	24.85759	26.39221	31.30461	24.89072	18.80687	13.44441
0	0	.0038560	.7077430	7.635273	9.700041	17.91891	21.83157	24.59722	26.02885	30.81794	20.49635	11.35720	8.88823
3.864	5.299	9.289	13.272	19.621	23.548	24.661	24.59722	26.02885	30.81794	20.49635	11.35720	8.88823	11.228
50375	.0082797	.0145141	.0207375	.0306578	.0305156	.0367938	.0385328	.0381719	.0378766	.0376359	.0291375	.0226078	.0175438
0	0	0	0	0	0	0	0	0	0	0	0	0	0
16054	4.580366	11.76127	20.23479	29.02929	30.51527	37.00504	41.74592	43.82372	43.33914	48.36997	42.50172	36.21445	29.79599
16054	4.580366	12.25521	23.33199	38.00111	43.0178484								

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Fiscal Years

	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
West Sak Sands Prod. (MMbbl/yr)	.01	.01	.01	12.03	14.75	20.03	20.42	20.44	21.04	21.28	22.37	22.31	22.59	18.47
West Sak Sands Price (\$/bbl)	2.036	3.339	5.58044	7.027887	6.775207	7.239897	7.290248	7.96963	8.535552	8.50193	9.74021	11.25328	12.50623	13.35084
WELLS	1	89.67	163.23	163.86	248.1	269.76	270.49	272.32	273.36	275.11	275.74	256.77	237.94	219.12
TOTAL DAILY OUTPUT	27.39726	27.39726	27.39726	32958.90	40410.96	54876.71	55945.21	57095.89	57443.44	58301.37	61287.67	61123.29	61890.41	50602.74
TOTAL MONTHLY OUTPUT	833.3333	833.3333	833.3333	1002500	1229167	1669167	1701667	1736667	1753333	1773333	1864167	1859167	1882500	1539167
TOTAL DAILY OUTPUT PER WELL	27.39726	3055343	1678443	201.1406	150.7309	203.4279	206.8291	209.6647	210.7173	211.9202	222.2662	238.0468	260.1093	230.9362
PER	8000	807030	1469070	1474740	2412900	2427840	2434410	2450880	2462040	2475990	2481460	2310930	2141460	1972080
WELL DAYS	30	2690.1	4896.9	4915.8	8043	8092.8	8114.7	8169.4	8206.8	8253.3	8272.2	7703.1	7138.2	6573.6
ALTERNATE ELF	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PRESUMED ELF	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NOMINAL TAX RATE	0	.1225	.1225	.1225	.1225	.1225	.13	.15	.15	.15	.15	.15	.15	.15
EFFECTIVE TAX RATE CURRENT ELF	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EFFECTIVE TAX RATE ALTERNATIVE ELF	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ROYALTY PERCENTAGE	.125	.125	.125	.125	.125	.125	.125	.125	.125	.125	.125	.125	.125	.125
SEVERANCE TAX CURRENT ELF	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SEVERANCE TAX NO ELF	.007	.007	.007	9.062218	10.71171	15.54381	19.53878	21.79893	23.57093	23.74589	28.59787	32.95172	37.08020	32.36495
SEVERANCE TAX PER BARREL CUR. LAW	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CUR. SEV. TAX NO ELF ON CENTS	.0191110	0	0	0	0	0	0	0	0	0	0	0	0	0
SEVERANCE TAX ALTERNATIVE ELF	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SEV TAX ALT ELF NO ELF ON CENTS/BBL	.007	.007	.007	8.421	10.315	14.021	14.294	14.588	14.728	14.896	15.659	15.617	15.813	12.929
CONSERVATION TAX	.0000109	.0000109	.0000109	.0131578	.0161318	.0219078	.0223344	.0227938	.0230125	.0232715	.0244672	.0244016	.0247078	.0202016
Gathering & Cleaning Charge	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ROYALTIES	.00237	.0041738	.0069756	10.56818	12.49179	18.12689	18.60836	20.76089	22.44850	22.61513	27.23606	31.38259	35.31448	30.82376
TOTAL OIL PROD REVENUES	.00237	.0041738	.0069756	10.56818	12.49179	18.12689	18.60836	20.76089	22.44850	22.61513	27.23606	31.38259	35.31448	30.82376
Unspecified Onshore Prod. (MMbbl/yr)	0	0	0	7.54	7.7	8.09	8.28	8.49	8.51	9.65	7.7	6.24	5.49	4.4
Unspecified Onshore Price (\$/bbl)	1.916	3.199	5.44044	6.887887	6.635207	7.099897	7.150248	7.82963	8.395552	8.36193	9.60021	11.11328	12.36623	13.21084
WELLS	1	1	1	33.07	33.07	33.07	33.07	33.07	33.07	33.07	33.07	33.07	33.07	33.07
TOTAL DAILY OUTPUT	0	0	0	20657.53	21095.89	22164.38	22684.93	23260.27	23315.07	24438.36	21095.89	17095.89	15041.10	12054.79
TOTAL MONTHLY OUTPUT	0	0	0	628333.3	641666.7	674166.7	690000	707500	709166.7	741666.7	641666.7	520000	457500	366666.7
TOTAL DAILY OUTPUT PER WELL	0	0	0	628.6608	637.9163	670.2263	685.9671	703.3648	705.0217	799.4665	637.9163	512.0063	441.3467	229.7026
PER	9000	9000	9000	297630	297630	297630	297630	297630	297630	297630	297630	300510	306720	472320
WELL DAYS	30	30	30	992.1	992.1	992.1	992.1	992.1	992.1	992.1	992.1	1001.7	1022.4	1574.4
ALTERNATE ELF	0	0	0	.0089830	.0113187	.0185799	.0229592	.0284536	.0290127	.0705439	.0113187	.0004751	.0000138	0
PRESUMED ELF	0	0	0	.3666111	.3774597	.4025110	.4140437	.4263119	.4274550	.4861273	.3774597	.2587303	.1744927	0
NOMINAL TAX RATE	0	0	0	.1225	.1225	.1225	.1225	.1225	.1225	.15	.15	.15	.15	.15
EFFECTIVE TAX RATE CURRENT ELF	0	0	0	.0449099	.0462388	.0493076	.0507204	.0522232	.0641182	.0729191	.0566189	.0388095	.0261739	0
EFFECTIVE TAX RATE ALTERNATIVE ELF	0	0	0	.0011004	.0013865	.0022760	.0028125	.0034856	.0043519	.0105816	.0016978	.0000713	.0000021	0
ROYALTY PERCENTAGE	.125	.125	.125	.125	.125	.125	.125	.125	.125	.125	.125	.125	.125	.125
SEVERANCE TAX CURRENT ELF	0	0	0	2.040831	2.067092	2.478121	2.627494	3.037530	4.008377	5.148529	3.662194	2.354905	1.554842	0
SEVERANCE TAX NO ELF	0	0	0	5.566747	5.476326	6.156654	6.345934	7.125135	9.377307	10.59091	9.702212	9.101777	8.910645	7.629262
SEVERANCE TAX PER BARREL CUR. LAW	0	0	0	.3093340	.3068041	.3500789	.3626631	.4088884	.5383081	.6097444	.5435538	.4313013	.3236726	0
CUR. SEV. TAX NO ELF ON CENTS/BBL	0	0	0	6.032	6.16	6.472	6.624	6.792	6.808	7.72	6.16	4.992	4.392	3.52
SEVERANCE TAX ALTERNATIVE ELF	0	0	0	.0500058	.0619849	.1143898	.1456976	.2027360	.2720609	.7471241	.1098165	.0043247	.0001228	0
SEV TAX ALT ELF NO ELF ON CENTS/BBL	0	0	0	5.278	5.39	5.663	5.796	5.943	5.957	6.755	5.39	4.368	3.843	3.08
CONSERVATION TAX	0	0	0	.0082469	.0084219	.0088484	.0090563	.0092859	.0093078	.0105547	.0084219	.006825	.0060047	.0048125
Gathering & Cleaning Charge	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ROYALTIES	0	0	0	6.491833	6.386386	7.179771	7.400507	8.309195	9.930768	10.08658	9.240202	8.668359	8.486329	7.265964
TOTAL OIL PROD REVENUES	0	0	0	8.532664	8.453479	9.657892	10.02800	11.34672	12.93915	15.23511	12.90240	10.02326	10.04117	7.265964
Seal Island Prod. (MMbbl/yr)	0	0	0	0	0	0	0	0	0	0	1.89	2.87	3.02	3.19
Seal Island Price (\$/bbl)	2.266	3.549	5.79044	7.237887	6.985207	7.449897	7.500248	8.17963	8.745552	8.71193	9.95021	11.46328	12.71623	13.56084
WELLS	1	1	1	1	1	1	1	1	1	1	20.1	56.99	61.2	61.79
TOTAL DAILY OUTPUT	0	0	0	0	0	0	0	0	0	0	5178.087	7863.014	8273.973	8739.726
TOTAL MONTHLY OUTPUT	0	0	0	0	0	0	0	0	0	0	15750	239166.7	251666.7	265833.3
TOTAL DAILY OUTPUT PER WELL	0	0	0	0	0	0	0	0	0	0	90.8599	128.4806	136.6921	141.4424
PER	9000	9000	9000	9000	9000	9000	9000	9000	9000	180900	517.10	550800	544770	556110
WELL DAYS	30	30	30	30	30	30	30	30	30	603	.09.7	1836	1815.9	1853.7
ALTERNATE ELF	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PRESUMED ELF	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NOMINAL TAX RATE	0	0	0	0	0	0	0	0	0	0	.1225	.1225	.1225	.1225
EFFECTIVE TAX RATE CURRENT ELF	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EFFECTIVE TAX RATE ALTERNATIVE ELF	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ROYALTY PERCENTAGE	.125	.125	.125	.125	.125	.125	.125	.125	.125	.125	.125	.125	.125	.125
SEVERANCE TAX CURRENT ELF	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SEVERANCE TAX NO ELF	0	0	0	0	0	0	0	0	0	0	2.015757	3.526428	4.116325	4.636834
SEVERANCE TAX PER BARREL CUR. LAW	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CUR. SEV. TAX NO ELF ON CENTS/BBL	0	0	0	0	0	0	0	0	0	0	1.323	2.009	2.114	2.233
SEVERANCE TAX ALTERNATIVE ELF	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SEV TAX ALT ELF NO ELF ON CENTS/BBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CONSERVATION TAX	0	0	0	0	0	0	0	0	0	0	.0020672	.0031391	.0033031	.0034891
Gathering & Cleaning Charge	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ROYALTIES	0	0	0	0	0	0	0	0	0	0	2.350737	4.112452	4.800379	5.407386
TOTAL OIL PROD REVENUES	0	0	0	0	0	0	0	0	0	0	2.350737	4.112452	4.800379	5.407386

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Fiscal Years

	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
276 NORTH SLOPE Prod. (MMbbl/yr)	644.23	610.54	586.18	563.83	545.78	501.32	495.74	439.16	394.05	388.76	343.97	293.96	252.53	215.09
277 AVG. NORTH SLOPE PRICE (\$/bbl)	3.728617	4.985592	7.178590	8.559714	8.292339	8.729903	8.784288	9.453817	10.00176	9.985332	11.20675	12.70178	13.93497	14.79166
278 AVG. NOMINAL TAX RATE	.1476045	.1488046	.1474113	.1463811	.1459046	.1467679	.1495407	.1494684	.13	.13	.1498489	.1497315	.1496711	.1495921
279 AVG. EFFECTIVE TAX RATE	.1368929	.1128635	.1078406	.1034602	.1002559	.0963533	.0983026	.0940369	.0924290	.0943984	.0902825	.0845542	.0786528	.0750913
280 AVG. ROYALTY PERCENTAGE	.1254482	.1258717	.1266884	.1264735	.1265763	.1267160	.1266673	.1265184	.1265206	.1262113	.1261084	.1260031	.1258747	.1257240
281 SEVERANCE TAX	307.6450	310.6226	400.7721	458.0303	402.8678	375.3126	380.6623	347.6011	324.0306	326.3256	310.2099	281.6494	247.2249	213.3839
282 SEVERANCE TAX NO ELF	143.0850	116.1296	142.6935	182.4860	175.5059	187.4168	188.4295	194.8025	192.3803	182.4666	194.6526	207.0718	213.2665	202.8138
283 SEVERANCE TAX - ALTERNATIVE ELF	319.8277	375.4936	487.2177	556.5911	492.2907	462.1182	465.1048	429.4069	400.6443	397.5397	384.8706	356.6014	320.1604	282.6901
284 SEV TAX CUR LAW NO ELF ON CENTS/BBL	448.2361	419.9212	429.9196	483.3107	427.9064	404.5308	402.7211	370.5140	340.0865	343.3002	322.6622	304.6232	269.4042	235.4337
285 SEV TAX ALT LAW NO ELF ON CENTS/BBL	430.73	426.9522	520.1403	598.6622	536.0237	506.9018	503.0789	466.2108	433.9071	431.4523	416.7581	385.3330	349.5820	309.8567
286 SEV TAX CUR LAW NO 10 YEAR LIMIT	414.7512	383.6971	482.8730	552.5004	491.4936	464.0259	466.1127	433.8948	409.2909	407.1993	395.7354	372.3594	247.2249	213.3839
287 CONSERVATION TAX	.1081719	.1246128	.6398973	.6374887	.5958715	.5472434	.5411825	.4794977	.4302432	.4245982	.3757406	.3211502	.2759286	.2350600
288 ROY. LTIES	35.84249	61.33252	484.3601	583.5907	527.0499	511.7990	507.6073	484.9965	461.4864	450.4830	449.9748	437.8966	413.2561	372.4935
289 TOTAL OIL PROD REVENUES	343.5957	372.2997	885.7721	1042.258	930.5136	887.6588	888.8108	833.0771	785.9473	777.2333	760.5604	719.8672	660.7570	586.1125
290 TOTAL OIL PROD REV. ALT. ELF	355.7783	436.9707	972.2176	1140.819	1019.936	974.4644	973.2533	914.8829	862.5610	848.4474	835.2212	794.8191	733.6925	655.4187
291														
292 REVENUE CHANGE FROM NO ELF	143.0850	116.1296	142.6935	182.4860	175.5059	187.4168	188.4295	194.8025	192.3803	182.4666	194.6526	207.0718	213.2665	202.8138
293 REVENUE CHANGE FROM ALT. ELF	12.18264	64.67104	86.44557	98.56081	89.42287	86.80555	84.44247	81.60585	76.61365	71.21412	74.66078	74.95190	72.93551	69.30616
294 REV CHANGE FOR CUR ELF NO ELF ON CE	140.5911	109.0987	29.14752	25.28041	25.03863	29.21819	22.05880	22.91295	16.05585	16.97456	12.45235	22.97376	22.17924	22.04981
295 REV CHANGE FOR ALT ELF NO ELF ON CE	143.0850	116.1296	119.3682	140.6319	133.1559	131.5891	122.4166	118.6098	109.8765	105.1267	106.5482	103.6835	102.3571	96.47276
296 REV CHANGE CUR ELF NO 10 YEAR LIMIT	107.1061	72.87450	82.10091	94.47013	88.62584	88.71325	85.65041	86.29373	85.26028	80.87367	85.52555	90.70999	0	0

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PRESENT VALUE OF CHANGES IN NET REVENUE
RESULTING FROM CHANGES IN THE SEVERANCE TAX
1988 THROUGH 2000
IN MILLIONS OF DOLLARS

1244.634
573.2188
846.3233
242.7127
552.1647

MEMORANDUM

State of Alaska

TO: Vincent Wright
Chief of Research

DATE: April 30, 1986

FILE NO:

TELEPHONE NO: 276-5364

FROM: Charles Logsdon
Petroleum Economist
Department of Revenue

CL

SUBJECT: Low Prices and the
ELF

It is commonly asserted that the state severance tax is insulated from low oil prices by the 80¢/barrel minimum tax. This tax is however also subject to the Economic Limit Factor, a calculated value which can be affected by wellhead price should the companies choose to ask for a hearing and submit cost and price data.

The ELF formula is as follows:

$$ELF = (1 - [PEL/TP]) \exp ([460 * WD]/PEL)$$

PEL = 300 barrels * wells/days unless successfully rebutted by the taxpayer

if challenged

PEL = Avg. direct operating cost / value at the point of production

Notice that as the value of oil at the point of production approaches zero the value of PEL becomes quite large i.e. it approaches infinity.

Notice further that as PEL gets larger the value of ELF gets smaller so that wellhead values near zero imply an ELF which is near zero.

The attached tables and graphs illustrate how the calculated value of ELF for Prudhoe Bay, Kuparuk, Milne Pt. and Lisburne change as wellhead value falls based on the cost assumptions used in the Pet Rev forecasting model.

The ELF formula is calculated for each producing oil field in the State. The ELF for Prudhoe Bay is currently subject (for FY 1986 and FY 1987) to a test to determine whether it is greater in value than 0.7. If it is greater than 0.7 it is set equal to 1.0. At wellhead prices below \$1.30/bbl (ca. \$7.05/bbl West Coast) the calculated ELF dips below the 0.7 mark. The ELF, and consequently severance taxes, fall to zero at wellhead price of \$1.00/bbl (ca. \$6.75/bbl West Coast).

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April 30, 1986
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The ELF for Kuparuk is currently estimated to be .5378 based on the presumed PEL equal to 300 times well days. The ELF falls below .5378 when wellhead price falls below \$3.67/bbl (ca. \$10.62/bbl West Coast), assuming all field costs paid by the State for royalties are applied against the producer's reported direct operating cost.

Obviously at prices below this trigger companies could lower their tax liability by filing for a redetermination of the ELF. The ELF falls to zero at a wellhead price of \$1.20/bbl (ca. \$8.15/bbl West Coast).

The ELF for Milne Pt. is currently estimated to be .4964 based on the presumed PEL equal to 300 times well days. The ELF falls below .4964 when wellhead price falls below \$4.86/bbl. (ca. \$13.72/bbl West Coast). The ELF falls to zero at a wellhead price of \$1.50/bbl (ca. \$10.36/bbl West Coast).

The ELF for Lisburne is currently estimated to .5712 based on the presumed PEL equal to 300 times well days. The ELF falls below .5712 when wellhead price falls below \$4.91/bbl (ca. \$10.66/bbl West Coast). The ELF falls to zero at a wellhead price of \$1.50/bbl. (ca. \$7.25/bbl West Coast).

To put these numbers into context, the current market price of ANS on the West Coast is approximately \$12.00/bbl. This plus the fact that the law specifies a producer must file for a redetermination of ELF by February 15 of the year or within 6 months of the commencement of production suggests that Milne Pt. producers could benefit from such a hearing. At current prices the State would lose roughly 30 thousand dollars a month due to reduced Milne Pt. severance taxes.

One possible solution to the State's downside revenue exposure would be to eliminate the application of the ELF to the 80¢/bbl tax floor. Given the cost assumptions used in the Pet Rev model and at current prices, this would cause Milne Pt. and a small amount of Cook Inlet production to be shut-in. Although we have not had time to examine in detail the revenue effect of fixing the 80¢/bbl floor, the State would lose roughly \$500 thousand a month at current prices (\$6.25/bbl at Pump Station #1) from the shut-in fields but gain approximately \$5 million per month from the Kuparuk operation.

Examination of Cook Inlet oil production suggests that the Swanson River Field will shut-in before the 80¢/bbl floor is reached. If prices fall below \$5.00/bbl at the field (the current price is roughly \$12.00/bbl) the 80¢/bbl fixed floor would cause the

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premature shut-in of McArthur River and Middle Ground Shoal fields. This would amount to about 35 thousand bbls. and including Swanson River represents nearly all Cook Inlet production. Obviously Cook Inlet is important to the State as a regional economic base so that the net gain in revenues would have to be examined in this light.

It might be pointed out that the price sensitivity of ELF also works on the rising price side, and that even at current low prices the actual PEL may be lower than the presumed 300 times well days. In other words, if producers used an ELF based on their actual operating costs their current severance tax liability would increase.

PRICE SENSITIVITY OF THE ECONOMIC LIMIT FACTOR FOR PRUDHOE BAY

Wellhead					Royalty		Royalty	Royalty	Royalty		Field	Field	
Price	Volume	Royalty	Total	Non-Royalty	Owner		Owner	Owner	Owner	Nominal	Cost	Cost	
(\$/BBL)	(BBL)	Share	Oper. Cost	Oper. Cost	Costs	Wells	Field	Field	Field	Tax	Excluded	Included	
			(\$1 per BBL)		(\$/70/BBL)		Cost	Cost	Cost	Rate	Effective	Effective	
							Excluded	Included	Excluded		(FY1987)	(FY1987)	
							PEL	PEL	ELF				
10.00	1500000	0.125	1500000	1312500	131250	550	272.73	248.86	0.8372	0.8379	0.15	0.15	0.15
9.00	1500000	0.125	1500000	1312500	131250	550	303.03	276.52	0.8363	0.8371	0.15	0.15	0.15
8.00	1500000	0.125	1500000	1312500	131250	550	340.91	311.08	0.8351	0.8360	0.15	0.15	0.15
7.00	1500000	0.125	1500000	1312500	131250	550	389.61	355.52	0.8336	0.8347	0.15	0.15	0.15
6.00	1500000	0.125	1500000	1312500	131250	550	454.55	414.77	0.8315	0.8328	0.15	0.15	0.15
5.00	1500000	0.125	1500000	1312500	131250	550	545.45	497.73	0.8285	0.8301	0.15	0.15	0.15
4.00	1500000	0.125	1500000	1312500	131250	550	681.82	622.16	0.8236	0.8258	0.15	0.15	0.15
3.00	1500000	0.125	1500000	1312500	131250	550	909.09	829.55	0.8145	0.8178	0.15	0.15	0.15
2.00	1500000	0.125	1500000	1312500	131250	550	1363.64	1244.32	0.7915	0.7983	0.15	0.15	0.15
1.50	1500000	0.125	1500000	1312500	131250	550	1818.18	1659.09	0.7573	0.7711	0.15	0.15	0.15
1.40	1500000	0.125	1500000	1312500	131250	550	1948.05	1777.60	0.7439	0.7611	0.15	0.15	0.15
1.30	1500000	0.125	1500000	1312500	131250	550	2097.90	1914.34	0.7250	0.7476	0.15	0.15	0.15
1.20	1500000	0.125	1500000	1312500	131250	550	2272.73	2073.86	0.6958	0.7284	0.15	0.1044	0.15
1.10	1500000	0.125	1500000	1312500	131250	550	2479.34	2262.40	0.6409	0.6979	0.15	0.0961	0.1047
1.00	1500000	0.125	1500000	1312500	131250	550	2727.27	2499.64	0	0.6374	0.15	0	0.0956
0.90	1500000	0.125	1500000	1312500	131250	550	3030.30	2765.15	0	0	0.15	0	0
0.80	1500000	0.125	1500000	1312500	131250	550	3409.09	3110.80	0	0	0.15	0	0
0.70	1500000	0.125	1500000	1312500	131250	550	3896.10	3555.19	0	0	0.15	0	0
0.60	1500000	0.125	1500000	1312500	131250	550	4545.45	4147.73	0	0	0.15	0	0
0.59	1500000	0.125	1500000	1312500	131250	550	4622.50	4218.03	0	0	0.15	0	0
0.58	1500000	0.125	1500000	1312500	131250	550	4702.19	4290.75	0	0	0.15	0	0
0.57	1500000	0.125	1500000	1312500	131250	550	4784.69	4366.03	0	0	0.15	0	0
0.56	1500000	0.125	1500000	1312500	131250	550	4870.13	4443.99	0	0	0.15	0	0
0.55	1500000	0.125	1500000	1312500	131250	550	4958.68	4524.79	0	0	0.15	0	0
0.54	1500000	0.125	1500000	1312500	131250	550	5050.51	4608.59	0	0	0.15	0	0
0.53	1500000	0.125	1500000	1312500	131250	550	5145.80	4695.54	0	0	0.15	0	0
0.52	1500000	0.125	1500000	1312500	131250	550	5244.76	4785.84	0	0	0.15	0	0
0.51	1500000	0.125	1500000	1312500	131250	550	5347.59	4879.68	0	0	0.15	0	0

PRICE SENSITIVITY OF THE ECONOMIC LIMIT FACTOR FOR KUPARUK

						Royalty	Royalty	Royalty	Royalty		Field	Field	
						Owner	Owner	Owner	Owner		Cost	Cost	
						Field	Field	Field	Field	Nominal	Excluded	Included	
Wellhead			Total	Non-Royalty	Royalty		Cost	Cost	Cost	Cost	Tax	Effective	Effective
Price	Volume	Royalty	Oper. Cost	Oper. Cost	Owner	Wells	Excluded	Included	Excluded	Included	Rate	Tax Rate	Tax Rate
(\$/BBL)	(BBL)	Share	(\$1.26/BBL)		Costs		PEL	PEL	ELF	ELF	(FY1987)	(FY1987)	(FY1987)

10.00	220000	0.125	277200	242550	11550	244	113.61	109.85	0.5797	0.5804	0.13625	0.0790	0.0791
9.00	220000	0.125	277200	242550	11550	244	126.23	122.06	0.5772	0.5780	0.13625	0.0786	0.0789
8.00	220000	0.125	277200	242550	11550	244	142.01	137.31	0.5740	0.5749	0.13625	0.0782	0.0783
7.00	220000	0.125	277200	242550	11550	244	162.30	156.93	0.5698	0.5709	0.13625	0.0776	0.0778
6.00	220000	0.125	277200	242550	11550	244	189.34	183.08	0.5640	0.5654	0.13625	0.0768	0.0770
5.00	220000	0.125	277200	242550	11550	244	227.21	219.70	0.5555	0.5573	0.13625	0.0757	0.0759
4.00	220000	0.125	277200	242550	11550	244	284.02	274.62	0.5419	0.5442	0.13625	0.0738	0.0741
3.67	220000	0.125	277200	242550	11550	244	309.55	299.32	0.5353	0.5379	0.13625	0.0729	0.0733
3.00	220000	0.125	277200	242550	11550	244	378.69	366.17	0.5160	0.5197	0.13625	0.0703	0.0708
2.00	220000	0.125	277200	242550	11550	244	568.03	549.25	0.4470	0.4553	0.13625	0.0609	0.0620
1.50	220000	0.125	277200	242550	11550	244	757.38	732.33	0.3286	0.3497	0.13625	0.0448	0.0477
1.40	220000	0.125	277200	242550	11550	244	811.48	784.64	0.2711	0.3020	0.13625	0.0369	0.0412
1.30	220000	0.125	277200	242550	11550	244	873.90	845.00	0.1600	0.2217	0.13625	0.0218	0.0302
1.20	220000	0.125	277200	242550	11550	244	946.72	915.41	0	0	0.13625	0	0
1.10	220000	0.125	277200	242550	11550	244	1032.79	998.63	0	0	0.13625	0	0
1.00	220000	0.125	277200	242550	11550	244	1136.07	1098.50	0	0	0.13625	0	0
0.90	220000	0.125	277200	242550	11550	244	1262.30	1220.55	0	0	0.13625	0	0
0.80	220000	0.125	277200	242550	11550	244	1420.08	1373.12	0	0	0.13625	0	0
0.70	220000	0.125	277200	242550	11550	244	1622.95	1569.28	0	0	0.13625	0	0
0.60	220000	0.125	277200	242550	11550	244	1893.44	1830.83	0	0	0.13625	0	0
0.59	220000	0.125	277200	242550	11550	244	1925.53	1861.86	0	0	0.13625	0	0
0.58	220000	0.125	277200	242550	11550	244	1958.73	1893.96	0	0	0.13625	0	0
0.57	220000	0.125	277200	242550	11550	244	1993.10	1927.19	0	0	0.13625	0	0
0.56	220000	0.125	277200	242550	11550	244	2028.69	1961.60	0	0	0.13625	0	0
0.55	220000	0.125	277200	242550	11550	244	2065.57	1997.27	0	0	0.13625	0	0
0.54	220000	0.125	277200	242550	11550	244	2103.83	2034.25	0	0	0.13625	0	0
0.53	220000	0.125	277200	242550	11550	244	2143.52	2072.64	0	0	0.13625	0	0
0.52	220000	0.125	277200	242550	11550	244	2184.74	2112.49	0	0	0.13625	0	0
0.51	220000	0.125	277200	242550	11550	244	2227.58	2153.92	0	0	0.13625	0	0

PRICE SENSITIVITY OF THE ECONOMIC LIMIT FACTOR FOR MILNE PT

Wellhead Price (\$/BBL)	Volume (BBL)	Royalty Share	Total Oper. Cost (\$1.78/BBL)	Non-Royalty Oper. Cost	Royalty Owner Costs (\$/.70/BBL)	Wells	PEL	ELF	Nominal Tax Rate (FY1987)	No Field Cost Effective Tax Rate (FY1987)
10.00	18000	0.2	32040	25632	0	22	145.64	0.5384	0.1225	0.0660
9.00	18000	0.2	32040	25632	0	22	161.82	0.5345	0.1225	0.0655
8.00	18000	0.2	32040	25632	0	22	182.05	0.5294	0.1225	0.0649
7.00	18000	0.2	32040	25632	0	22	208.05	0.5227	0.1225	0.0640
6.00	18000	0.2	32040	25632	0	22	242.73	0.5133	0.1225	0.0629
5.00	18000	0.2	32040	25632	0	22	291.27	0.4991	0.1225	0.0611
4.86	18000	0.2	32040	25632	0	22	299.66	0.4965	0.1225	0.0608
4.00	18000	0.2	32040	25632	0	22	364.09	0.4753	0.1225	0.0582
3.00	18000	0.2	32040	25632	0	22	485.45	0.4263	0.1225	0.0522
2.00	18000	0.2	32040	25632	0	22	728.18	0.2480	0.1225	0.0304
1.50	18000	0.2	32040	25632	0	22	970.91	0	0.1225	0
1.40	18000	0.2	32040	25632	0	22	1040.26	0	0.1225	0
1.30	18000	0.2	32040	25632	0	22	1120.28	0	0.1225	0
1.20	18000	0.2	32040	25632	0	22	1213.64	0	0.1225	0
1.10	18000	0.2	32040	25632	0	22	1323.97	0	0.1225	0
1.00	18000	0.2	32040	25632	0	22	1456.36	0	0.1225	0
0.90	18000	0.2	32040	25632	0	22	1618.18	0	0.1225	0
0.80	18000	0.2	32040	25632	0	22	1820.45	0	0.1225	0
0.70	18000	0.2	32040	25632	0	22	2080.52	0	0.1225	0
0.60	18000	0.2	32040	25632	0	22	2427.27	0	0.1225	0
0.59	18000	0.2	32040	25632	0	22	2468.41	0	0.1225	0
0.58	18000	0.2	32040	25632	0	22	2510.97	0	0.1225	0
0.57	18000	0.2	32040	25632	0	22	2555.02	0	0.1225	0
0.56	18000	0.2	32040	25632	0	22	2600.65	0	0.1225	0
0.55	18000	0.2	32040	25632	0	22	2647.93	0	0.1225	0
0.54	18000	0.2	32040	25632	0	22	2696.97	0	0.1225	0
0.53	18000	0.2	32040	25632	0	22	2747.86	0	0.1225	0
0.52	18000	0.2	32040	25632	0	22	2800.70	0	0.1225	0
0.51	18000	0.2	32040	25632	0	22	2855.61	0	0.1225	0

PRICE SENSITIVITY OF THE ECONOMIC LIMIT FACTOR FOR LISBURN

Wellhead Price (\$/BBL)	Volume (BBL)	Royalty Share	Total Oper. Cost (\$1.78/BBL)	Non-Royalty Oper. Cost	Royalty Owner Costs (\$/.70/BBL)	Wells	PEL	ELF	Nominal Tax Rate (FY1987)	No Field Cost Effective Tax Rate (FY1987)
10.00	50000	0.125	75000	65625	0	51	147.06	0.6015	0.1225	0.0737
9.00	50000	0.125	75000	65625	0	51	163.40	0.5985	0.1225	0.0733
8.00	50000	0.125	75000	65625	0	51	183.82	0.5948	0.1225	0.0729
7.00	50000	0.125	75000	65625	0	51	210.08	0.5898	0.1225	0.0722
6.00	50000	0.125	75000	65625	0	51	245.10	0.5828	0.1225	0.0714
5.00	50000	0.125	75000	65625	0	51	294.12	0.5724	0.1225	0.0701
4.91	50000	0.125	75000	65625	0	51	299.51	0.5713	0.1225	0.0700
4.00	50000	0.125	75000	65625	0	51	367.65	0.5554	0.1225	0.0680
3.00	50000	0.125	75000	65625	0	51	490.20	0.5218	0.1225	0.0639
2.00	50000	0.125	75000	65625	0	51	735.29	0.4201	0.1225	0.0515
1.50	50000	0.125	75000	65625	0	51	980.39	0	0.1225	0
1.40	50000	0.125	75000	65625	0	51	1050.42	0	0.1225	0
1.30	50000	0.125	75000	65625	0	51	1131.22	0	0.1225	0
1.20	50000	0.125	75000	65625	0	51	1225.49	0	0.1225	0
1.10	50000	0.125	75000	65625	0	51	1336.90	0	0.1225	0
1.00	50000	0.125	75000	65625	0	51	1470.59	0	0.1225	0
0.90	50000	0.125	75000	65625	0	51	1633.99	0	0.1225	0
0.80	50000	0.125	75000	65625	0	51	1838.24	0	0.1225	0
0.70	50000	0.125	75000	65625	0	51	2100.84	0	0.1225	0
0.60	50000	0.125	75000	65625	0	51	2450.98	0	0.1225	0
0.59	50000	0.125	75000	65625	0	51	2492.52	0	0.1225	0
0.58	50000	0.125	75000	65625	0	51	2535.50	0	0.1225	0
0.57	50000	0.125	75000	65625	0	51	2579.98	0	0.1225	0
0.56	50000	0.125	75000	65625	0	51	2626.05	0	0.1225	0
0.55	50000	0.125	75000	65625	0	51	2673.80	0	0.1225	0
0.54	50000	0.125	75000	65625	0	51	2723.31	0	0.1225	0
0.53	50000	0.125	75000	65625	0	51	2774.69	0	0.1225	0
0.52	50000	0.125	75000	65625	0	51	2828.05	0	0.1225	0
0.51	50000	0.125	75000	65625	0	51	2883.51	0	0.1225	0

FY87 Legislation
Prepared by Audit Division
August 28, 1986

I. Adjustments to ELF computation

Five changes are contemplated at this time. Each change has been requested as a result of problems and concerns which have been encountered when working with the ELF in the past year of declining oil prices. The fiscal impact, should the suggested changes be made to the ELF computation, are estimated based upon the June revenue forecast. These figures are as follows:

<u>FY87</u>	<u>FY88</u>	<u>FY89</u>
\$39 million	\$119 Million	\$158 Million

- A. The first change removes the ELF application to the cents-per-barrel. This establishes a floor of 80¢ per barrel originally contemplated when the production tax was instituted in 1977. Without this change, the effective tax rate can conceivably fall to zero. It is our understanding that Dick Monkman has also been working on ELF formula modifications. This change should be applied within the context of any changes he may propose.
- B. The second change would allow ANS crude to be the benchmark for determining value at the point of production. As it now stands, the cost of oil at west coast refineries is the statutory value indicator. As ANS crude has now replaced foreign oil as the predominant oil on the west coast market, it is recommended that the reference to imported foreign crude be removed.
- C. The third proposal is much more difficult to describe, but deals with the time periods which should be considered in determining value to be used in the ELF computations. The submitted draft gives the Department final authority to determine value. Language needs to be drafted to allow taxpayers to use a "pre-authorized" provisional number for value until the Department completes its audits. AS 43.55.013(e) [for oil] and AS 43.55.013(h) [for gas] require "the average monthly direct operating cost for oil or gas production operations of the lease or property shall be determined based on a period of not less than four consecutive months." There is no period of time stated to be used to establish value. This ambiguity results in the department and the taxpayer taking opposite positions.

Oil companies have taken the position that the value of crude oil one month prior to the request for the hearing should be used in the ELF computations. The Department has taken the position that

an average of several months, as is required for direct operating costs, should be used. Without a correction to the statute, the Department could be locked into the use of an unrealistic value for a period of 12 or more months depending on whether this is the first or subsequent year of production. One possible interpretation would be that legislative history was created in 1977 when it was felt that oil prices would only continue to increase. With increasing prices the State would be better off using a one month value in that it would presumably be the highest value that could be obtained. However, if prices continue to fluctuate, as they have over the past several months, the only equitable solution to all the parties, the taxpayers and the State, would be to use an average value determined over several months.

- D. This change deletes the term "only royalty: in AS 43.55.013(e). Discussion of the change follows in section E.
- E. This change deletes the term "only royalty actually and currently paid" in AS 43.55.012(h). It could be argued by the oil industry that royalty paid in value should be allowed as a direct operating expense. The Department has taken the position that the words "only royalty" in AS 43.55.013(e) refer to the direct operating costs to produce the royalty oil and not the royalty paid to the State. Without this change, the direct operating expense will be increased from 12 1/2 to 20% depending on the particular taxpayer involved.

Although royalty expenses have been incurred by paying the royalty in value, the taxpayers have retained the oil for their own use or for sale to a third party. The Department has taken the position that the value of the oil retained must be credited against the royalty expense claimed resulting in a net expense of zero.

If the royalty is paid in kind, rather than in value, a separate deduction for this oil would be allowed. It makes no sense then to allow a taxpayer a deduction if the royalty is paid in value rather than in kind.

The deletion of the above language would correct this problem.

Conclusion:

We have spent considerable time identifying problems with the way the ELF is working. Additional drafting work needs to be done, especially with respect to the issue in "C" above. We will continue to work on the proposed legislation over the next few weeks.

STATE OF ALASKA 1987 LEGISLATIVE SESSION
FISCAL NOTE

Revision Date _____

REQUEST

Bill/Resolution No: _____
Title: Technical Changes to Compu-
tation of Economic Limit Factor
Sponsor: Governor
Requestor: _____
Date of Request: _____

FISCAL DETAIL

Agency Affected: Department of Revenue
BRU: Audit

Components:
Audit Division

EXPENDITURES/REVENUES: (Thousands of Dollars)

	FY 87	FY 88	FY 89	FY 90	FY 91	FY 92
<u>OPERATING</u>						
100 PERSONAL SERVICES	-	-	-	-	-	-
200 TRAVEL	-	-	-	-	-	-
300 CONTRACTUAL	-	-	-	-	-	-
400 SUPPLIES	-	-	-	-	-	-
500 EQUIPMENT	-	-	-	-	-	-
600 LANDS & STRUCTURES	-	-	-	-	-	-
700 GRANTS, CLAIMS	-	-	-	-	-	-
800 MISCELLANEOUS	-	-	-	-	-	-
<u>TOTAL OPERATING</u>	-	-	-	-	-	-
<u>CAPITAL</u>	-	-	-	-	-	-
<u>REVENUE</u>	-	-	-	-	-	-

FUNDING: (Thousands of Dollars)

GENERAL FUND	-	-	-	-	-	-
FEDERAL FUNDS	-	-	-	-	-	-
OTHER	-	-	-	-	-	-
<u>TOTAL</u>	-	-	-	-	-	-

POSITIONS:

FULL-TIME	-	-	-	-	-	-
PART-TIME	-	-	-	-	-	-
TEMPORARY	-	-	-	-	-	-

ANALYSIS: Fiscal impact has not been calculated at this time.

Prepared By: Steven E. Kettel
Division: Audit Division

Phone: 465-2343

Date: August 21, 1986

Approved by Commissioner: _____
Agency: Revenue

Date: _____

Distribution (by Agency preparing fiscal note):

Legislative Finance
Legislative Sponsor
Requestor
Office of Management and Budget
Impacted Agency(ies)

Bill Analysis
ELF Amendments
Audit Division
August 20, 1986

A. AS 43.55.011(a) is amended to read:

There is levied upon the producer of oil a tax for all oil produced from each lease or property in the state, less any oil the ownership or right to which is exempt from taxation. The tax is equal to either the percentage-of-value amount calculated under (B) of this section multiplied by the economic limit factor determined for the oil production of the lease or property under AS 43.55.013 or the cnet-per-barrel amount calculated under (C) of this section, whichever is greater.

B. AS 43.55.013(f) is amended to read:

For the purpose of calculating the economic limit, the value at the point of production of oil produced from the lease or property shall be determined on the basis of the acquisition cost C.I.F. at west coast refineries for (reported oil) ANS crude oil of like quality, minus the reasonable cost of transportation between the point of production of the oil from the lease or property and those west coast refineries. Final determination of value at the point of production will be determined by the Department upon audit of taxpayer records.

C. AS 43.55.013(i) is amended to read:

For the purpose of calculating the economic limit, the value at the point of production of gas produced from the lease or property shall be determined on the basis of the volume weighted average price paid for gas of like quality and pressure in the same field. Final determination of value at the point of production will be determined by the Department upon audit of taxpayer records.

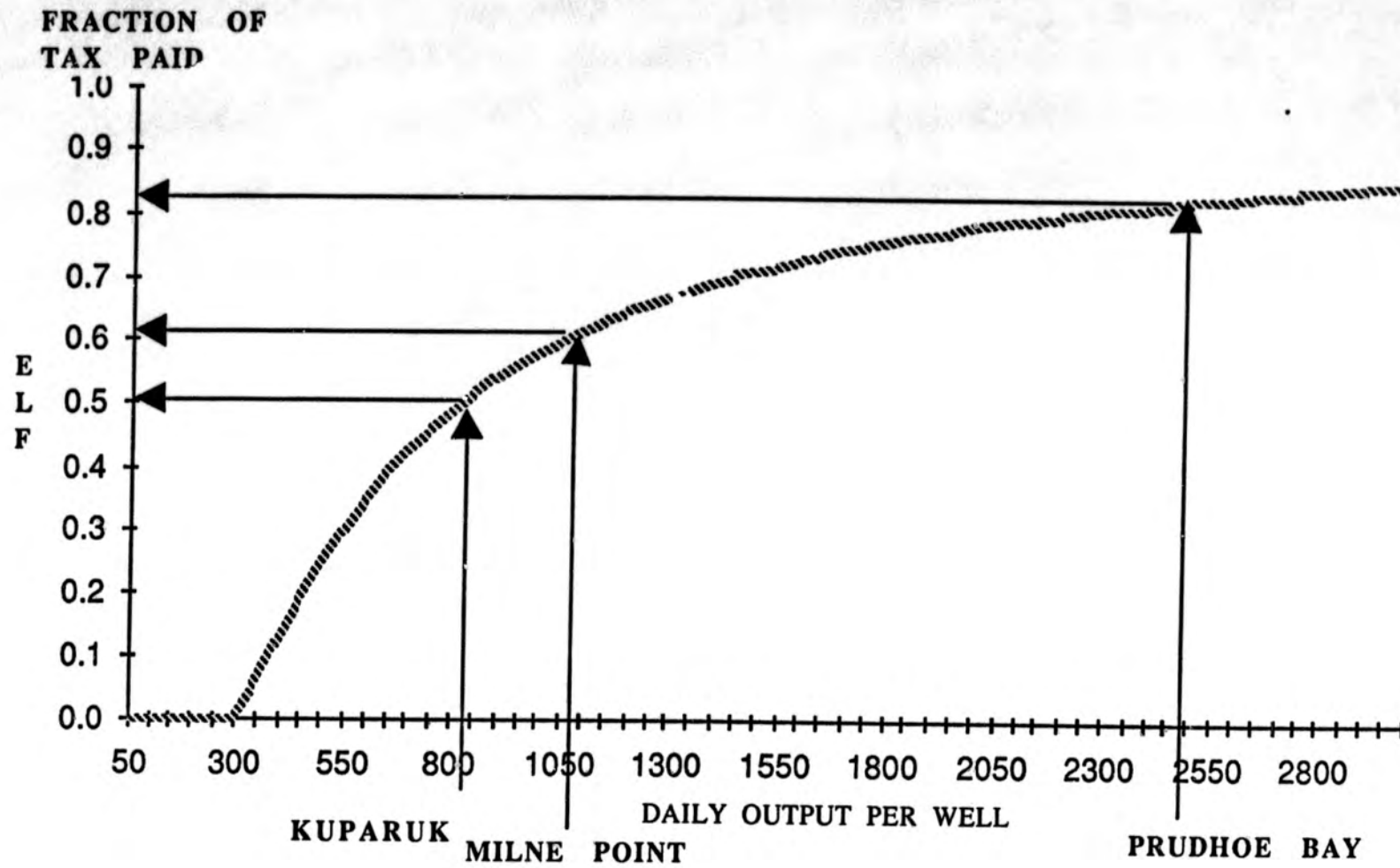
D. AS 43.55.013(e) is amended to delete:

"only royalty"

E. AS 43.55.013(h) is amended to delete:

"only royalty actually and currently paid"

ECONOMIC LIMIT FACTOR



CASE 4

WHAT HAPPENS WHEN THE PEL CONSTANT IS INCREASED?

$$ELF = (1 - [PEL/TP])\exp(460*WD/PEL)$$

PEL = (Production at the Economic Limit) =
(400 barrels per day)*
(average number of operating wells during the month)*
(number of days of production for the month).

EXAMPLE

$$PEL = 400 \text{ barrels} * 541 \text{ wells} * 30 \text{ days} = 6,492,000 \text{ barrels per month}$$

TP = (Total Production for the field for the month) =
(average number of operating wells during the month)*
(number of days of production for the month)*
(average daily production per well).

EXAMPLE

$$TP = 541 \text{ wells} * 30 \text{ days} * 2477 \text{ barrels per well} = 40,201,710 \text{ barrels per month}$$

WD = (Well Days) =
(number of operating wells during the month)*
(number of days each well operates)

EXAMPLE

$$WD = 541 \text{ wells} * 30 \text{ days} = 16,230 \text{ well days}$$

CALCULATION EXAMPLE

$$ELF = (1 - [PEL / TP])\exp(460 * WD / PEL)$$

$$ELF = (1 - [6,492,000/40,201,710])\exp(460*16,230/6,492,000)$$

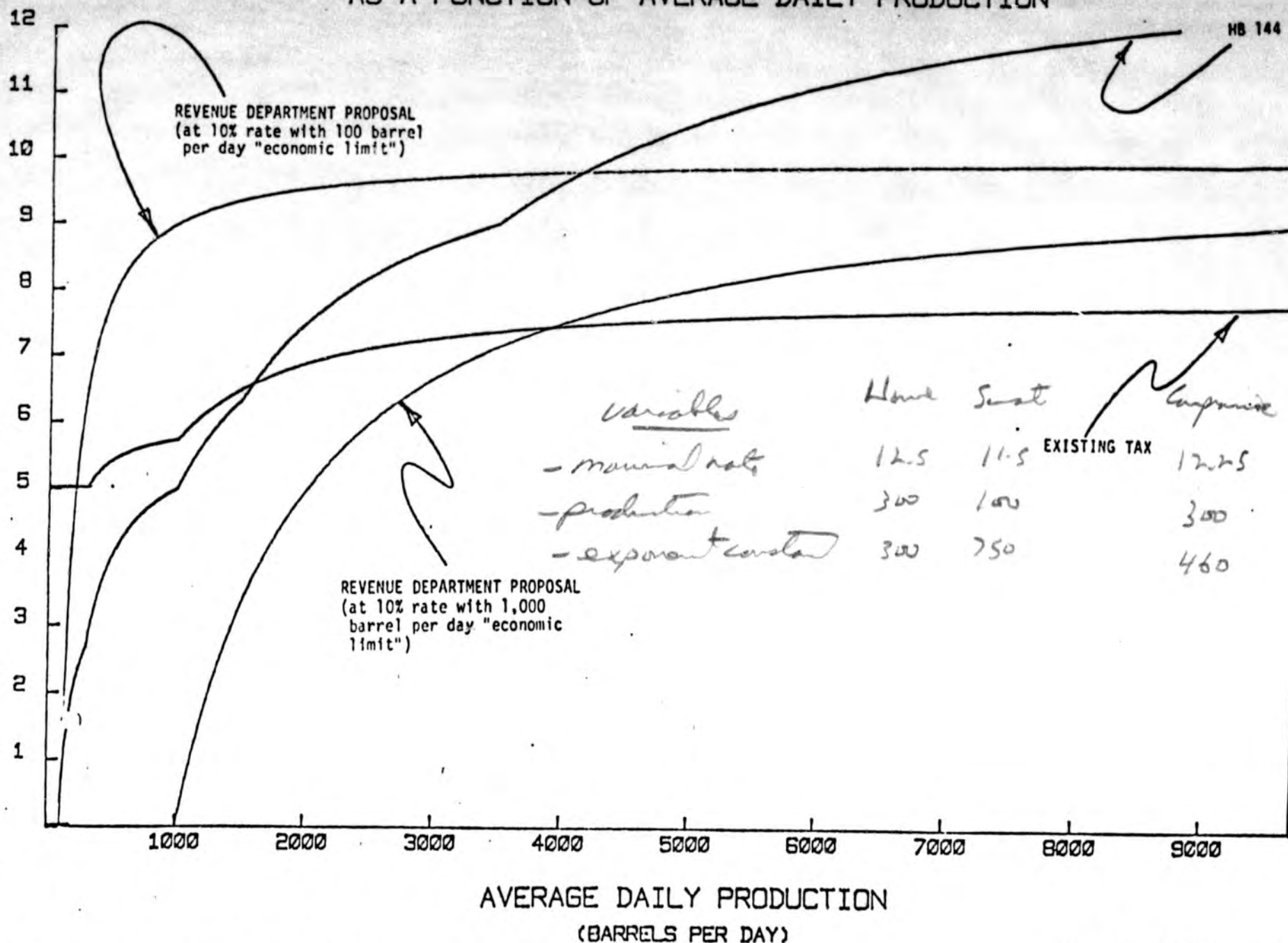
$$ELF = (1 - .1615) \exp (1.150)$$

$$ELF = (.8385) \exp (1.150)$$

$$ELF = .816 \quad \text{RESULT: A DECREASE IN THE TAX}$$

EFFECTIVE SEVERANCE TAX RATE AS A FUNCTION OF AVERAGE DAILY PRODUCTION

EFFECTIVE SEVERANCE TAX RATE
(PERCENT)



DON Y=10*(X-100)/X; INTEGRAL F(X)=65114.03

DON Y=10*(X-1000)/X; INTEGRAL F(X)=67005.60

LEGISLATIVE AFFAIRS AGENCY
RESEARCH DIVISION
15 February 1977

CASE 1

HOW THE ELF IS CALCULATED

$$ELF = (1 - [PEL/TP])\exp(460*WD/PEL)$$

PEL = (Production at the Economic Limit) =
(300 barrels per day)*
(average number of operating wells during the month)*
(number of days of production for the month).

EXAMPLE

$$PEL = 300 \text{ barrels} * 541 \text{ wells} * 30 \text{ days} = 4,869,000 \text{ barrels per month}$$

TP = (Total Production for the field for the month) =
(average number of operating wells during the month)*
(number of days of production for the month)*
(average daily production per well).

EXAMPLE

$$TP = 541 \text{ wells} * 30 \text{ days} * 2477 \text{ barrels per well} = 40,201,710 \text{ barrels per month}$$

WD = (Well Days) =
(number of operating wells during the month)*
(number of days each well operates)

EXAMPLE

$$WD = 541 \text{ wells} * 30 \text{ days} = 16,230 \text{ well days}$$

CALCULATION EXAMPLE

$$ELF = (1 - [PEL / TP])\exp(460 * WD / PEL)$$

$$ELF = (1 - [4,869,000/40,201,710])\exp(460*16,230/4,869,000)$$

$$ELF = (1 - .1211) \exp (1.533)$$

$$ELF = (.8789) \exp (1.533)$$

$$ELF = .82$$

CASE 2

WHAT HAPPENS WHEN THE EXPONENTIAL CONSTANT IS INCREASED?

$$ELF = (1 - [PEL/TP])\exp(1000*WD/PEL)$$

PEL = (Production at the Economic Limit) =
(300 barrels per day)*
(average number of operating wells during the month)*
(number of days of production for the month).

EXAMPLE

$$PEL = 300 \text{ barrels} * 541 \text{ wells} * 30 \text{ days} = 4,869,000 \text{ barrels per month}$$

TP = (Total Production for the field for the month) =
(average number of operating wells during the month)*
(number of days of production for the month)*
(average daily production per well).

EXAMPLE

$$TP = 541 \text{ wells} * 30 \text{ days} * 2477 \text{ barrels per well} = 40,201,710 \text{ barrels per month}$$

WD = (Well Days) =
(number of operating wells during the month)*
(number of days each well operates)

EXAMPLE

$$WD = 541 \text{ wells} * 30 \text{ days} = 16,230 \text{ well days}$$

CALCULATION EXAMPLE

$$ELF = (1 - [PEL / TP])\exp(1000*WD / PEL)$$

$$ELF = (1 - [4,869,000/40,201,710])\exp(1000*16,230/4,869,000)$$

$$ELF = (1 - .1211) \exp (3.333)$$

$$ELF = (.8789) \exp (3.333)$$

$$ELF = .65 \quad \text{RESULT: A DECREASE IN THE TAX}$$

CASE 3

WHAT HAPPENS IF THE EXPONENTIAL CONSTANT IS REDUCED?

$$ELF = (1 - [PEL/TP])\exp(300*WD/PEL)$$

PEL = (Production at the Economic Limit) =
(300 barrels per day)*
(average number of operating wells during the month)*
(number of days of production for the month).

EXAMPLE

$$PEL = 300 \text{ barrels} * 541 \text{ wells} * 30 \text{ days} = 4,869,000 \text{ barrels per month}$$

TP = (Total Production for the field for the month) =
(average number of operating wells during the month)*
(number of days of production for the month)*
(average daily production per well).

EXAMPLE

$$TP = 541 \text{ wells} * 30 \text{ days} * 2477 \text{ barrels per well} = 40,201,710 \text{ barrels per month}$$

WD = (Well Days) =
(number of operating wells during the month)*
(number of days each well operates)

EXAMPLE

$$WL = 541 \text{ wells} * 30 \text{ days} = 16,230 \text{ well days}$$

CALCULATION EXAMPLE

$$ELF = (1 - [PEL / TP])\exp(300*WD / PEL)$$

$$ELF = (1 - [4,869,000/40,201,710])\exp(300*16,230/4,869,000)$$

$$ELF = (1 - .1211) \exp (1)$$

$$ELF = (.8789) \exp (1)$$

$$ELF = .8789 \quad \text{RESULT: AN INCREASE IN THE TAX}$$

DRAFT OUTLINE
OMB Briefing to Joint Special Committee on Taxation:
The Economic Limit Factor and Alaska's Severance Tax

1. Introduction to presentation.
2. The ELF -- what it is and how it works.
 - A. Concept. *Erickson*
 - B. The formula.
3. Evolution of the current ELF.
 - A. Production taxation in Alaska before 1977. *Erickson*
 - B. Introduction of the ELF in 1977 session.
 - C. 1981 oil production tax changes.
4. Revenue effects of the ELF. *Chastler*
 - A. Effects compared with no ELF.
 - B. Effects of the ten-year switch that turns the Prudhoe ELF "on" in FY 88.
 - C. Effects of the trapdoor in the floor.
5. Previous proposals for changing the ELF.
 - A. Remove 10 year exemption switch.
 - B. End trapdoor by excluding cents-per-barrel from application of ELF.
 - C. End producer initiated modification of PEL.
 - D. Add field productivity to the ELF formula.

John R. Kemp
Division Manager

Conoco Inc.
3201 'C' Street, Suite 200
Anchorage, AK 99503

September 4, 1986

Joint Special Committee on State's Tax Policy
Senator Frank Ferguson, Chairman
1024 W. 6th Street, Suite 203
Anchorage, Alaska 99501

Dear Senator Ferguson:

The high drilling and production costs and the decline in the value of crude oil significantly impacts the development of new fields in Alaska. It also impacts the decision to continue operating any fields in the State. One of the cost factors, the State's oil and gas production tax, is directly controlled by the State. The modifications and revisions to the present production tax statutes may be the deciding factor for future oil and gas development in Alaska.

The present production tax is based on a monthly production rate at the economic limit OF 300 barrels/day times the number of well days. This is called the economic limit factor (ELF). The statutory presumption is that the ELF represents the producer's break-even point. It is presumed that the producer is making profit from the production of oil and gas before reaching the ELF. The ELF, however, may be rebutted. Rebutting the presumption allows a producer to establish by clear and convincing evidence that the break-even point is higher than 300 barrels for the field or unit. Successfully rebutting the ELF and establishing a new ELF results in a downward adjustment of the production tax payable by the producer.

The legislators who enacted the production tax statutes were farsighted and concerned that a rigidly structured production tax would force producers of economically marginal fields or units to shut down wells prematurely. See, e.g., Governor's transmittal letter for S.B. 238, March 11, 1977, 7th Journal, at 540-41. Prior to 1977, production tax liability was calculated on a rigid stair-step approach with incremental increased taxes based on the amount of production.

This approach was insensitive to the problems of marginal fields and the geographic variation of cost and production.

Early in 1977 after the introduction of the Senate and House production tax bills which would have continued the stair-step approach, the Alaska Department of Revenue published an in-depth comprehensive report titled "Alaska's Oil and Gas Tax Structure", a study with recommendations for improvement. See testimony of Sterling Gallagher, Commissioner of the Department of Revenue, before the House Finance Committee, April 14, 1977. In developing the presumptive ELF factor, the legislature has provided a mechanism to allow production tax relief to producers of marginally economic fields. The present production tax allows the producers to establish their actual break-even point and to be assessed production tax from the point of the field or unit's production at a profit. In essence, the producer is not forced to pay taxes while in a negative profit or loss situation. The provisions for this production tax relief are not automatic. The producer must request a formal hearing and prove by clear and convincing evidence that its break-even point is different than that presumed by the statute. The economic sensitivity in the current production tax statutes allow the States to grant relief to producers of marginally economic fields and allows the production operations to continue, rather than to shut-in during times of unprofitability.

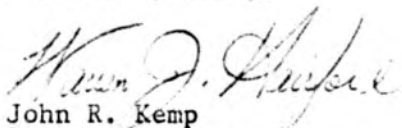
Proposals for new legislation to change the ELF provisions are now under consideration. Conoco urges the legislature to look to the future of Alaska. In the short run, the State may benefit by establishing a fixed minimum tax. It is anticipated that the minimum tax would approximate the current 80 cents per barrel resulting from the presumed ELF. A production tax at this rate could contribute to the shut-in of Milne Point Unit. Shut-ins of these types of units and the prohibitive effect of a fixed tax on the development of new fields means a reduction in the State's employment rate and a detriment to the local economy. It also means a reduction in both the State and local ad valorem taxes. Alaska's economy will stagnate.

Conoco urges the State to maintain the current tax structure. Careful and thoughtful analysis was used in the establishment of the production tax, with the ultimate goal of maximizing both income to the State and the conservation of the State's most valuable non-renewable resource. A panic-induced tampering with the existing law may produce deleterious effects in both near term and long term economic stability. In the alternative, if action on the production tax must be undertaken, Conoco strongly urges that the first 50,000 barrels per

Senator Frank Ferguson
September 4, 1986
Page 3

day of production from a unit be exempted from any proposed changes in the tax structure. This provision would maintain the original intent of maximizing resource utilization in economically vulnerable units. This type of provision will encourage the continued operation of Milne Point and other small units. It is also farsighted enough not to require yearly amendments and changes and, thus, will encourage the continued development of the oil and gas fields of Alaska.

Yours very truly,


FCR John R. Kemp
Division Manager

VV
HG/AEH
520.0

Standard Alaska
Production Company
900 East Benson Boulevard
P.O. Box 196612
Anchorage, Alaska 99519-6612
(907) 564-5423

G.N. Nelson
President

STANDARD
ALASKA PRODUCTS

September 4, 1986

Senator Frank Ferguson
Co-Chairman
Joint Special Committee on the State's Tax Policy
PO Box 131
Kotzebue, Alaska 99752

Dear Senator Ferguson:

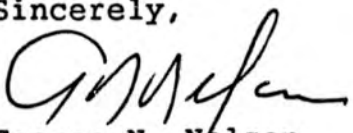
I recently received the enclosed paper on the Economic Limit Factor prepared by Tom Williams and I thought it would be of interest to you and perhaps other members of the Special Committee. The paper presents an overview of the ELF, explains how it functions and why it was originally written into Alaska's statutes.

Tom prepared the paper at the request of the Alaska Oil and Gas Association Tax Committee. I must emphasize, however, that it is not an official AOGA position paper and should not be taken as such.

A copy of this paper is being also sent to Rep. Grussendorf and I leave it to your discretion to distribute it to other committee members.

I look forward to seeing you on September 11.

Sincerely,



George N. Nelson

cc: Rep. Ben Grussendorf w/enclosure

THE ECONOMIC LIMIT FACTOR
IN ALASKA'S OIL AND GAS PROPERTIES
PRODUCTION TAX

By Thomas K. Williams

September 1986

About the Author

Thomas K. Williams may rightfully lay claim to being the "father of the ELF" since he was the one who first proposed the idea of an economic limit factor for the production tax in late 1976, when he was Director of Petroleum Revenue for the Alaska Department of Revenue. As director, he had immediate responsibility for administering the state's oil and gas tax laws, and he drafted many of the regulations that are still in effect for those taxes. Mr. Williams was director from September 1975 until April 1979, when he became Commissioner of Revenue for the remainder of Governor Hammond's second term. Prior to joining Revenue Mr. Williams was an Assistant Attorney General for the state, specializing in oil and gas matters. He is currently Vice President and General Counsel of Cook Inlet Region, Inc. Mr. Williams received bachelor's and master's degrees in history from Princeton and Harvard, respectively, and earned his law degree at Stanford. He has lived in Alaska since 1973.

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WHAT IS THE ELF?

The Economic Limit Factor, or ELF, is a mathematical formula that changes the rate of tax on oil and gas production under Alaska's Oil and Gas Properties Production Tax (the "Production Tax"), AS 43.55. Without the ELF, these rates would be the nominal rates set out in the statute -- 15 percent 1/ of the value of taxable oil production 2/ (12.25% during the first five years of production from a lease or property 3/) or \$0.80 per barrel, 4/ whichever is greater. 5/ The \$0.80 cents-per-barrel amount is for oil having an API gravity of 27 degrees, and it is increased or decreased by half a cent for each degree above or below 27 degrees, respectively, in the API gravity of the actual oil produced. 6/ This adjustment to the cents-per-barrel amount

-
- 1/ AS 43.55.011(b) (15 percent rate for oil produced after June 30, 1981).
 - 2/ AS 43.55.011(a) excludes "any oil the ownership or right to which is exempt from taxation". Such exempt oil almost invariably is state or federal royalty oil.
 - 3/ AS 43.55.011(b) ("for a lease or property coming into commercial production after June 30, 1981, the percentage-of-value amount equals 12.25 percent of the gross value . . . of taxable oil produced from the lease or property in the first five years after the start of commercial production and equals 15 percent . . . thereafter").
 - 4/ AS 43.55.011(c). This statute also specifies a cents-per-barrel rate of \$0.60 for "taxable old crude oil", referring to "old oil" under former federal oil price controls. With the expiration of those controls, there is no longer any current production to which the \$0.60 rate applies.
 - 5/ AS 43.55.011(a) requires payment of the Production Tax on the basis of the greater amount, with the percentage-of-value amount deemed to be the greater if both amounts happen to be equal. It used to be necessary to establish which amount was being used when both amounts were equal because former AS 43.55.011(d) (repealed by § 18, ch. 116, SLA 1981) called for certain payments into the Alaska Native Fund when the Production Tax was paid on the cents-per-barrel basis.
 - 6/ AS 43.55.012(b).

for API gravity is made before the ELF is applied. 7/ For taxable gas, the nominal tax rate is greater of ten percent of its value or \$0.064 per thousand cubic feet (Mcf) 8/ before applying the ELF.

The ELF ranges in value from zero to one, although the way the formula is set up, it could approach, but never actually reach, one. However, by statute, if the calculated value of the ELF under the formula is greater than 0.7 for oil during the first ten years of production from a lease or property, then the ELF is defined to have a value of one; 9/ after ten years of production, the ELF equals its calculated amount under the formula, whether it is above or below 0.7. 10/ There is no corresponding rule changing the value of the ELF for gas from its calculated value under the gas ELF formula. 11/

The actual tax rate for taxable production from a lease or property equals the nominal tax rate multiplied by the ELF for that lease or property. Thus for instance, with oil, as the ELF varies from one down to zero, the effective

7/ Under AS 43.55.011(a) "[t]he tax is equal to either the percentage-of-value amount calculated under (b) of this section or the cents-per-barrel amount calculated under (c) of this section, whichever is greater, multiplied by the economic limit factor". AS 43.44.011(c) states "[t]he cents-per-barrel amount equals . . . \$0.80 per barrel . . . as adjusted by AS 43.55.012 [providing for the API gravity adjustment]". Thus, the API gravity adjustment applies in determining the cents-per-barrel amount under "(c) of this section", and then, if that amount is greater than the percentage-of-value amount, it is multiplied by the ELF.

8/ AS 43.55.016. The reference in AS 43.55.016(c) to an "adjust[ment] by AS 43.55.012" in the \$0.064 cents-per-Mcf rate refers to provisions in AS 43.55.012 that have since been repealed. AS 43.55.012(b), the only portion of AS 43.55.012 currently remaining in effect, is applicable only to oil. The reference to AS 43.55.012 is therefore an artifact from prior versions of the statute and no longer has any application; the cents-per-Mcf rate is uniformly \$0.064 per Mcf (before applying the ELF).

9/ AS 43.55.013(b)(3).

10/ AS 43.55.013(b)(4).

11/ AS 43.55.013(c).

rate of tax can range between something at or very near its nominal rate of 15 percent (or \$0.80 per barrel, if greater), down to zero. 12/

12/ The cents-per-barrel and cents-per-Mcf rates represent, in effect, floors on the prices used for Production Tax purposes. If prices drop below these floor levels, the cents-per-barrel or cents-per-Mcf rate kicks in. However, neither of these represents any sort of floor on the actual amount of tax collected. As explained below, the purpose of the ELF is to scale down the burden of the Production Tax so that the tax does not cause the cessation of production before the property would otherwise reach its economic limit (break even point). If the amount of production needed to break even equals the amount currently being produced, the ELF makes the tax zero whether the tax is calculated on a percentage-of-value basis or on the cents-per-barrel (or cents-per-Mcf) basis.

HOW THE ELF WORKS: THE BASIC THEME

The ELF depends primarily on two things. One is the volume of production needed to "break even" so that the gross value of the production just equals the total direct operating costs (as defined in the statute) for producing that oil or gas. The other is the volume of production actually produced during the month in question.

These two factors have a determinative role in the changing economics of an oil and gas property during its productive life, and the ELF attempts to recognize the economics and set the effective tax rate at appropriate levels throughout that productive life. In general the cost of producing an additional barrel of oil or an Mcf of gas starts off relatively low and increases with time, until eventually the cost of getting the next barrel or Mcf gets so high that it is no longer profitable to continue producing. This point at which operations cease to be profitable is called the economic limit.

The ELF, which gets its name (Economic Limit Factor) from this concept of an economic limit, takes an approximation of how much production is needed to break even at the economic limit, 13/ and then compares that production rate

13/ The statute makes an approximation of the operating costs at the economic limit by specifically listing certain types of operating costs that one would reasonably expect to continue being incurred right up until the economic limit is reached. Such costs are "royalty, production supplies, purchased fuel, routine maintenance, and wages and benefits of employees working on the production operations." AS 43.55.013(e) (oil); AS 43.55.013(h) (gas). Other current costs are specifically excluded from the calculation of the operating costs at the economic limit because one would reasonably expect them to have been discontinued or no longer incurred by the time the economic limit is reached. These excluded costs are capital expenditures, tangible or intangible drilling expenses, costs of well workovers, and costs of replacement or repairs other than routine maintenance. All of these are excluded because they represent expenses or capital investments that a reasonable person would have discontinued making once the property got close enough to its economic limit that the additional cost or investment no longer promised to pay for itself. Amortization and depreciation are excluded because all past capital investments ordinarily should be fully amortized or depreciated before

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at the economic limit (PEL) to the volume actually being produced. This ratio is an indicator of the profitability of the lease or property. The smaller PEL is in proportion to the total production (TP) currently being produced, the more profitable the lease or property is and, theoretically, the better it can bear a greater "slice off the top" for the Production Tax. Hence the ELF approaches one (and the effective tax rate approaches its maximum possible rate) when the property is most profitable, but later as the property becomes more and more expensive to operate and less and less profitable, the ELF decreases and scales down the tax rate, until finally both the ELF and the tax are zero when the economic limit is reached.

An example will illustrate exactly how this occurs. In its simplest form, the ELF is one minus the ratio of PEL to TP. Put into algebraic terms, the formula for the ELF is:

$$ELF = 1 - [PEL/TP],$$

where PEL is the production rate needed to cover the projected direct operating costs at the economic limit, and TP is total current production. This is the present formula

(footnote continued from previous page)

the property reaches its economic limit. Taxes are excluded because (a) the ELF would have reduced the Production Tax to zero when the property reaches the economic limit and (b) ad valorem taxes, even on a replacement-cost basis of assessment, should reflect the fact that there is no remaining economic life for the assets and hence they would be fully depreciated for assessment purposes at the economic limit (the third tax, the conservation tax of one eighth of a cent per barrel, AS 43.57, is disregarded as having a minimal effect). Insurance and overhead are excluded because they were not considered to be sufficiently "direct" in nature. The costs of terminating production operations and shutting down the property are excluded because they are not costs of production, but costs of ceasing production; if anything, the financial advantage (due to the time value of money) to be gained by deferring the termination costs might be enough in itself to induce an operator to continue producing a property even after it reaches what would ordinarily be its economic limit (i.e., after its production revenue started falling short of the direct operating expenses for continuing that production). The statute also allows the Department of Revenue to adopt regulations that include additional direct operating costs that are not specifically set out in the statute; the Department has adopted no regulation including any such additional types of cost.

for the gas ELF 14/ (formerly, when there were still federal oil price controls, it was also the formula for "old oil" production 15/).

Suppose there is a gas-producing property for which the PEL is determined to be 150,000 Mcf per month. Suppose further that initial production from this property is 500,000 Mcf per month. The ELF will be:

$$\begin{aligned} \text{ELF} &= 1 - [\text{PEL}/\text{TP}] \\ &= 1 - [150,000/500,000] \\ &= 1 - [0.300000] \\ &= 0.700000 \end{aligned}$$

The effective rate of tax will be seven percent of the value of the gas (0.700000 times the nominal rate of 10% equals 7%) or \$0.0448 per Mcf (0.700000 times the nominal rate of \$0.064 equals \$0.0448), whichever is more.

Now suppose the property continues producing at 500,000 Mcf per month for five years, and then, starting in year six and each year thereafter, the rate of monthly production drops by 70,000 Mcf. The following table shows what the ELF and the effective tax rates will be during the life of this property:

Year	Production Rate	ELF	Effective Tax Rate	
			% of Value	\$ per Mcf
1 - 5	500,000	0.700000	7.00000%	\$0.044800
6	430,000	0.651163	6.51163	0.041674
7	360,000	0.583333	5.83333	0.037333
8	290,000	0.482759	4.82759	0.030897
9	220,000	0.318182	3.18182	0.020364
10	150,000	0.000000	-0-	-0-

14/ Id. ("The economic limit factor for gas production of a lease or property equals one minus the ratio of the monthly production rate at the economic limit to the production during the month for which the tax is to be paid").

15/ Former AS 43.55.013(a), repealed by § 18, ch. 116, SLA 1981 ("The economic limit factor for old crude oil production of a lease or property equals one minus the ratio of the monthly production at the economic limit to the production during the month for which the tax is to be paid").

As one can see from this table, when current production starts to decline, the ELF starts falling off too, but at a somewhat slower rate. For example, between Years 5 and 6 production in this illustration falls from 500,000 to 430,000 Mcf, a drop of 14 percent (the drop of 70,000 is 14% of 500,000), but the ELF drops from 0.700000 to 0.651163, a decline of only 6.9767 percent (the change of 0.048837 in the ELF between Year 5 and Year 6 is 6.9767% of 0.700000). However, as the table clearly shows, the ELF eventually does fall off fast enough to get to zero when the economic limit is reached.

What this means in practical terms is that the ELF operates to keep the effective tax rate from initially falling off quite as rapidly as does the profitability of the property measured by the ratio of current production to production at the economic limit. Thus the State's Production Tax collections are higher than they would be if the ELF scaled the tax rate down in direct proportion to the property's profitability.

There is one other thing that this illustration reveals about the ELF, and that is why the effective tax rate cannot ever equal the nominal rates set out in the statute (except of course where there is a special statutory rule making the ELF one if its computed value under the formula is greater than 0.7). The reason is that the ELF itself can approach, but never quite reach, the value of one. For the ELF to equal one, the ratio of production at the economic limit to current production must be zero. 16/ In mathematical terms,

16/ In the "complex" explanation of the ELF, the effects of the exponent in the oil ELF are explained. With the exponent, there is theoretically a second way for the ELF to equal one, and that is if the exponent is zero and the number to which the exponent is to be applied is not equal to zero. However, since the exponent is, in effect, the ratio of 460 barrels a day per well to the actual average daily production rate per well during the month in question, the exponent cannot be zero unless actual production were infinite (this is because 460 divided by any finite number, no matter how huge, will yield a number greater than zero; otherwise, if zero were the quotient, one would be able to reverse the process and multiply that huge but finite number by that quotient (zero) and get back to 460, but zero times any finite number is always zero). Since an infinite production rate is one of the two possible conditions that are described in the "simple" version of the ELF as making the ELF exactly equal to one, there is no practical difference between the "simple" and "complex" versions as to why the ELF is always less than one in the physical world.

if $1 = ELF$, then $1 = 1 - [PEL/TP]$.

Clearly, $[PEL/TP]$ must equal zero for this equation to be true, since if any number other than zero is subtracted from one, the result will not equal one. Thus,

$$PEL/TP = 0, \text{ or}$$

multiplying both sides of this last equation by TP,

$$PEL = 0 \times TP.$$

There is no finite number for TP which will, when multiplied by zero, yield a value for PEL other than zero. This is because zero times any finite number is always zero. And so, if the ELF is to equal one, either current production (TP) is infinite (which is possible in mathematics, but not in the physical world) or PEL equals zero (again, a practical impossibility, since no field would have costs of production equal to zero, especially at its economic limit).

Thus, the larger current production becomes in proportion to PEL, the closer the ELF comes to a value of one, but it never reaches one under the formula in the real world.

REASONS FOR THE ELF

The ELF operates to reduce the effective rate of the Production Tax as an oil and gas property nears its economic limit; i.e., the point where the income (gross value) from producing a barrel or Mcf of production from that property is just enough to cover the costs of producing that barrel or Mcf. At the end, when the property actually reaches its economic limit, the ELF makes the tax rate zero. Why has this ELF feature been included in the Production Tax?

The reasons for the ELF are both historical and economic. Prior to the enactment of the ELF in 1977, Alaska had a "stair stepped" Production Tax on oil in which the tax depended on the average daily rate of production per well. The first 300 barrels a day per well were taxed at five percent of their gross value, the next 700 barrels a day were taxed at six percent, and average daily production in excess of 1,000 barrels a day per well was taxed at eight percent. ^{17/} In addition, there were three similarly "stair

^{17/} Former AS 43.55.010, repealed by § 9, ch. 136, SLA 1977. The three-tiered "stair step" tax (enacted in ch. 4, FSSLA 1973) replaced an earlier four-tier version, in which the four "stair steps" for percentage-of-value had been enacted first (ch. 247, SLA 1970), with the cents-per-barrel rates added later (ch. 101, SLA 1972). The four "steps" in the original progressive tax rate structure were 0 - 300 barrels a day per well (3% rate), 301 - 1,000 barrels a day per well (5% rate), 1,001 - 2,500 barrels a day per well (6% rate), and 2,500+ barrels a day per well (8% rate). When the cents-per-barrel rates were added to the Production Tax in 1972, they were coupled with a credit for royalty payments to the State, the intent and effect of which was to set a floor on combined state revenues from royalty and Production Tax, corresponding to a "wellhead" price of \$2.65 a barrel (which would have dropped to \$2.50 on July 1, 1980 if the law had remained in effect). If prices dropped under that floor, the "lost" royalty income would be made up by the corresponding reduction in the royalty credit against the cents-per-barrel rates. See ch. 101, SLA 1972; 1972 House J. 915-916 (Governor Egan's transmittal letter for House Bill 817, introducing the royalty credit concept; the House Finance Committee took the substance of HB 817 and incorporated it into a House Committee Substitute for a Senate Bill, SB 168, that had already passed the Senate; the version that became chapter 101 of the 1972 Session Laws was the Second Free Conference Committee

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stepped" cents-per-barrel rates -- \$0.16875 on the first 300 barrels a day, \$0.2025 on the next 700, and \$0.27 on anything over 1,000 barrels a day. 18/ These cents-per-barrel rates were for oil having an API gravity of 27 degrees, and they were increased or decreased by two percent for each degree of API gravity that the actual oil production was over or below 27 degrees. The actual tax to be paid was the higher of the two, percentage-of-value or cents-per-barrel. 19/ The cents-per-barrel amount would be greater when the "wellhead" price 20/ fell below \$3.375; for higher

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Substitute for SB 168, SFCCS HCS SB 168). Litigation over this and other enactments of the 1972 Legislature quickly ensued -- Amerada-Hess Corp., et al., v. State (Superior Ct. No. 72-2719 Civil), ARCO Pipe Line Co. v. Herbert (Superior Ct. No. 72-2798 Civil), Mobil Pipe Line Co. v. State (Superior Ct. No. 72-2720 Civil), consolidated. Legislation enacted by the 1973 Special Session, including repeal of the royalty credit provisions, made part of the litigation moot and allowed the remainder to be settled.

18/ Former AS 43.55.015(a), repealed by § 9, ch. 136, SLA 1977. Actually, the base cents-per-barrel rates (before any adjustment for API gravity) were not constant, but changed from month to month based on monthly changes in the Wholesale Price Index for crude petroleum from the Index for the month of December 1973. See former AS 43.55.015(c); Union Oil Co. of Cal. v. Dept. of Revenue, 560 P.2d 21 (Alaska 1977) (upholding the Department's regulation, former 15 AAC 05.694, which made the December 1973 Index the base Index). This monthly adjustment to the cents-per-barrel rates, in turn, meant that the effective floor price for the Production Tax revenue (i.e., the price at which the cents-per-barrel tax became greater than the percentage-of-value tax) also varied from month to month, depending on the Index.

19/ Former AS 43.55.010(e).

20/ The issue of what is the "wellhead" for royalty and Production Tax purposes has itself been hotly disputed. In Alaska when oil emerges from the ground at the "Christmas tree" atop the well casing, it is cleaned and dehydrated and separated from associated and dissolved gases before it is in a marketable condition. After it has gone through the surface equipment to make it marketable, it is then metered and either sold or

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prices, the percentage-of-value amount would be the greater. ^{21/} Thus, the cents-per-barrel rates, in effect, established a floor price for the value of the oil for Production Tax purposes, regardless of how low the actual "wellhead" price might fall.

To illustrate how the "stair step" tax worked, suppose a property had 10 wells and produced 450,000 barrels of 27-degree API gravity, valued at \$10 apiece during a 30-day month. The tax would be calculated as follows:

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transported away from the property through some common carrier pipeline. In a number of other states, the "wellhead" price is effective at the outlet of the tank gauge or custody transfer meter at which it is first measured in a marketable condition. In Cook Inlet and on the North Slope, it may be miles between the Christmas tree and the custody transfer meter, and the separators and dehydrators represent significant expenditures. If the incidence of the tax or the royalty is at the custody transfer meters, none of the costs incurred upstream from that point for the gathering lines, separators and dehydrators and associated equipment would be deducted in determining the price or value for purposes of paying the tax or royalty. Conversely, if the incidence of the tax or royalty is at the Christmas tree, then all those costs are deducted in determining the price or value on which the tax or royalty is computed and paid. The phrase "wellhead price," while commonly used, can therefore be misleading or at least ambiguous in the Alaskan context, since it is unclear whether it refers to the price at the custody transfer meter or a price further upstream, perhaps as far as the Christmas tree. The Production Tax is based on the "gross value at the point of production", which is specifically defined to be the point of measurement (as opposed to the Christmas tree); see AS 43.55.140(6), 15 AAC 55.210(6).

- ^{21/} Five percent of \$3.375 equals \$0.16875, which is exactly what the cents-per-barrel rate was for the first "stair step." Six percent of \$3.375 is \$0.2025, the same as the rate for the second "step," while eight percent of it is \$0.27, the rate for the third. By 1977 the escalation in the cents-per-barrel rates due to the Wholesale price Index (see note 16, above) had raised the effective floor from its original \$3.375 to approximately \$6.10.

0 - 300 bbl/day "stair step": 10 wells, times 300 barrels per well a day, times 30 days, equals 90,000 barrels in this "stair step" of the 450,000 total taxable barrels produced. Five percent of 90,000 barrels at \$10 each equals \$45,000. 90,000 barrels times the cents-per-barrel rate of \$0.16875 22/ equals \$15,187.50.

301 - 1,000 bbl/day "stair step": 10 wells, times 700 barrels per well a day, times 30 days, equals 210,000 barrels in this "stair step", of the remaining 360,000 barrels that didn't fall into the first "step". Six percent of 210,000 at \$10 each equals \$126,000, while 210,000 times the \$0.2025 cents-per-barrel rate equals \$42,525.

1,000+ bbl/day "stair step": 450,000 total barrels, minus the 90,000 barrels falling in the first "stair step" and the 210,000 barrels falling in the second, leaves 150,000 barrels to fall in this top "step." Eight percent of 150,000 at \$10 a barrel is \$120,000, and at \$0.27 a barrel the cents-per-barrel amount is \$40,500.

The total percentage-of-value amount would be \$45,000 plus \$126,000 plus \$120,000, or \$291,000. This is greater than the cents-per-barrel amount of \$98,212.50 (\$15,187.50 + \$42,525 + \$40,500), so the actual tax would be paid on the percentage-of-value basis. The effective rate of tax in this example would be 6.47 percent (\$291,000 total tax, divided by a total value of \$4,500,000 for the 450,000 barrels, equals 0.0647).

After this tax system was enacted in October 1973 (ch. 4, FSSLA 1973), factors affecting the Alaska oil and gas market changed dramatically. The Arab oil embargo of the United States in early 1974 caused oil prices, which had doubled since the previous May, to redouble. Construction of TAPS finally began in 1974, but costs for constructing

22/ For simplicity, the example uses the original rates set out in the statute. In actual practice, those rates would first have been adjusted for changes in the crude oil Wholesale Price Index (WPI). One might also note that, by having 27 degree API gravity oil in the example, the example does not show how to make the API gravity adjustment of two percent in the WPI-escalated cents-per-barrel rates per degree above or below 27 degrees would be made. For an example illustrating all these aspects of the former tax, see Alaska Department of Revenue, Alaska's Oil and Gas Tax Structure: A Study with Recommendations for Improvement (February 1977) (the "1977 Tax Study"), pp. II-6 to II-10.

that project continued to skyrocket over all earlier projections. The federal government imposed a complex system of price controls on crude oil and refined products, with a big question mark deliberately left in the system as to how Prudhoe Bay oil would fit into it all once that field came into production.

Uncertain as to what all these changes might mean in terms of the profitability of Prudhoe Bay and the appropriate level and type of state taxation, the Alaska Legislature in 1975 retained Tanzer Economic Associates, Inc. to conduct an economic analysis of Prudhoe Bay, its profits, and the effects of state taxation policy on those profits. In January 1976 Tanzer's results were released. ^{23/} The "Tanzer Report" concluded that Alaska could significantly increase the overall level of its tax burden on Prudhoe Bay and still provide a sufficient degree of profitability to reward the oil companies there for investing in the development of the field.

A flurry of legislative proposals to increase oil taxes immediately followed, ranging from "excess profit" taxes to a "separate accounting" income tax, with higher Production Tax rates as an option somewhere in between. In the face of misgivings by the Department of Revenue about some of the proposals and the lack of a clear legislative consensus about which proposal(s) to adopt, Governor Hammond prevailed upon the Legislature to give the Department a year to make a comprehensive study of Alaska's then current tax structure and make recommendations in early 1977 about any changes that should be made. ^{24/} Because of strong support in the Senate for a "separate accounting" income tax ^{25/} and be-

^{23/} Tanzer Economic Associates, Alaska's Prudhoe Bay Oil: Profitability and Taxation Potential (January 9, 1976).

^{24/} The 1976 Legislature, through a Committee Substitute for Senate Concurrent Resolution 101 (CS SCR 101), resolved that the Legislative Council, through its Interim Committee on Oil and Gas Leasing and Taxation Policy, was to cooperate with the Administration in making a comprehensive and definitive study of Alaska's oil and gas leasing and taxation policies, with recommendations for improvement.

^{25/} "Separate accounting" is one of two basic ways of determining how much of a multistate business's taxable income is attributable to its activities in a particular state for purposes of that state's income tax. It attempts to isolate the in-state activities from the rest of the business and see how much income results

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cause of criticism of the state income tax as early as 1973, 26/ the Department of Revenue and the Legislative Council engaged Professors Jerome M. Ziefman and Kenneth G. Ainsworth to make a special study of the income tax. 27/

The Department's report -- Alaska's Oil and Gas Tax Structure: A Study with Recommendations for Improvement (February 1977) (the "1977 Tax Study") 28/ -- was transmitted to the Governor on February 11, 1977. Besides incorporating the criticisms and recommendations of Professors Ziefman and Ainsworth about the income tax, the 1977 Tax Study examined the Production Tax, the state ad valorem tax on pipelines and production and exploration equipment and facilities, and the reserves tax. In its review of the Production Tax, the 1977 Tax Study noted:

. . . Typically production taxes do not reflect the expenses incurred to obtain the production. The tax is either some specified percentage of the gross value of the production or a flat fee of so

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from the in-state activities. The other way is "apportionment," in which a slice of the business's total income is attributed to its in-state activities on the basis of a prescribed formula. Of the consultants advising the Legislature in the mid-1970s, perhaps the most respected was Milton Lipton of Walter J. Levy & Associates. He and Dr. Michael Tanzer of Tanzer Economic Associates, Inc. were preeminent advocates of separate accounting as the way to reform the state income tax and even Alaska's oil and gas tax structure in general.

26/ Milton Lipton, "Testimony at the Joint Hearings of Proposed Oil and Gas Legislation before the House and Senate resources Committees" (March 23, 1973 transcript), p. 7.

27/ Ziefman and Ainsworth, The Taxation of the Petroleum Industry under Alaska's Corporate Income Tax (January 9, 1977).

28/ The principal draftsmen of the 1977 Tax Study were John R. Messenger, then Deputy Commissioner of Revenue (Taxation), and Thomas K. Williams, then Director of the Department's Petroleum Revenue Division. Important editorial review and suggestions were made by Dr. David L. T. Knudson, Petroleum Economist in the Petroleum Revenue Division. Revenue Commissioner Sterling Gallagher closely supervised the preparation of the report.

many cents per unit of production. Since it is not based on net proceeds of the production operation, the production tax simply represents another cost of doing business to the producer. 29/

. . . .

Once a discovery has been made and production begins, however, the production tax (and the landowner's royalty) can have a more significant impact on the economics of the production operation and the associated decisions. As operating costs rise during the life of the field, the profit margin shrinks. At some point the total production costs overtake the value of the oil or gas produced, and production can then be continued only by operating at a loss. As one of the costs of doing business, the production tax contributes to the total costs and tends to hasten the time when this break-even point (called the economic limit) is reached. 30/

Besides this negative economic effect of production and severance taxes in general, the 1977 Tax Study drew attention to a particular problem with the "stair step" tax as it applied to areas of Alaska where the operating costs differed greatly from each other:

The current State oil production tax contains a "stair step" feature which is intended to alleviate the adverse impact that a production tax can have on an oil well operating close to its true economic limit. . . . The "stair step" feature of the existing oil production tax schedule is an attempt to reduce the tax rate as production falls closer to the true economic limit. The tax rate declines from 8% to 6% to 5% as individual well output falls. Unfortunately, the current "stair steps" appear to be sized incorrectly.

Economic factors governing production operations vary widely in the State of Alaska. Some areas in the State are located close to the refinery market and have low operating costs. In these areas wellhead values are high. As a consequence, the true economic limit (measured in barrels per day) for these properties can be quite low: 50 to 75 barrels a day per well, or even lower, in some cases in Cook Inlet.

29/ 1977 Tax Study, p. V-19.

30/ Id., p. V-21.

Other crude oil wells in Alaska are not located close to refinery markets and could have extremely high operating costs. The netback value in the field for these isolated areas is lower than in Cook Inlet and the operating and capital costs can be much higher than in Cook Inlet. Accordingly, the true economic limit (measured in barrels per day) for these producing properties can be quite high. Depending on the property, this limit might range from 300 to perhaps 1000 barrels per day [per well]. There is, then, a rather wide range of values which can be generated regarding the minimum production level at which Alaska crude oil wells can be operated.

From this perspective, an economic flaw in the existing or any other "stair step" production tax schedule becomes obvious. By establishing a fixed schedule of "stair stepped" tax rates, the State crude oil production tax is based on the faulty assumption that production economics are similar in Cook Inlet, Prudhoe Bay, and everywhere else in Alaska. 31/

To take care of these problems, the 1977 Tax Study made the following recommendation to replace the "stair steps" with the ELF: 32/

The Department of Revenue recommends perfecting the "stair step" approach as a means of eliminating effects of the production tax on the economics of oil production operations. The key to doing so is not found by creating a series of "steps" and rates that succeed in this for any one area of the State, such as Cook Inlet. As explained in Chapter V, a well producing 1000 bar-

31/ Id., pp. V-28 to V-30.

32/ The original idea for an economic limit was by the then Director of the Petroleum Revenue Division of the Alaska Department of Revenue, Thomas K. Williams, in response to criticism, particularly by Milton Lipton, about the adverse economic effects of the Production Tax on properties as they near their economic limit. The precise formula for the ELF proposed in the 1977 Tax Study (and still the formula for the gas ELF) was developed jointly by Mr. Williams and Dr. David L. T. Knudson, Petroleum Economist in that division. The exponent for the oil ELF and the number 460 appearing in the exponent were features added during the legislative process as the result of work by Alan Latham, who was working for the Legislature.

rels a day may be quite a money maker in Cook Inlet but be mediocre or even marginal in other areas of the state such as the Interior or North Slope. Consequently the "stair steps" that succeed for the Inlet won't eliminate the economic effects of the tax elsewhere. Conversely, "stair steps" designed to eliminate those effects [for] production on the North Slope would give too much away to production in the Inlet.

To eliminate this difficulty, the Department of Revenue recommends an Economic Limit Factor (ELF), based on the ratio of the rate at the true economic limit to the current production rate, as a mechanism for scaling down the tax rate as the production declines toward the economic limit. This would be done by multiplying a basic tax rate times the difference between unity (the number, one) and the ratio of rate at limit to current rate.

. . . .

If the tax law conclusively sets the rate at the economic limit at some specific rate like 200 barrels a day per well, the ELF becomes simply one more economically rigid structure like the present "stair steps." It would not respond to the great regional differences in economic scale for production operations in Alaska. But the great advantage of the ELF over any specific set of "stair steps" is that it can be tied to the actual economic condition of a property anywhere in the state (emphasis in original) 33/

This was the first public proposal to adopt the ELF as a replacement for the "stair steps" in the Production Tax. Instead of a series of discrete "steps" in production rates at which tax rates changed, the ELF represented in effect a smooth curve, a series of an infinite number of "steps" each infinitesimally small. But beyond simply smoothing the "steps" into a continuous curve, the ELF had the additional advantage of allowing the whole curve itself to be shifted, to reflect the rate of production needed for that particular property to cover its basic operating costs at the economic limit. It could reflect the fact that in remote areas of Alaska like Prudhoe Bay, the rate of production needed merely to break even would be very much greater than the rates needed to break even in the more accessible areas like Cook Inlet and the Kenai Peninsula. Thus, the adverse economic

33/ 1977 Tax Study, pp. VI-17 and VI-19.

effects on the economic life of an oil and gas property were no longer a necessary evil of a tax based on gross production value as the Production Tax is.

Governor Hammond acted on this recommendation by introducing Senate Bill 238 to the 1977 Session of the Legislature. 34/ After much legislative wrangling, an amended version of this bill (FCCS HCS CSSB 238) finally passed, and the ELF became part of the Production Tax. 35/

34/ See 1977 Senate Journal, pp. 540-541 (Governor's transmittal letter).

35/ Ch. 136, SLA 1977.

HOW THE ELF WORKS: VARIATIONS ON THE THEME

A. Introduction to the Exponent. The ELF formula for gas production (and formerly for "old oil" under now expired federal oil price controls) is simple and straightforward in its operation. It is merely one minus the ratio of production at the economic limit (PEL) to current production (TP), or to put it into mathematical symbols:

$$\text{ELF} = 1 - [\text{PEL}/\text{TP}]$$

As current production (TP) declines toward the "break even" rate (PEL), the ratio of PEL to TP gets larger and larger, eventually equaling one when TP has declined to the point that it equals PEL. At that point, the ELF becomes $1 - 1$, or zero. The tax is then also zero.

This same formula is at the root of the ELF for oil, except that there is, in addition, an exponent that is applied to it. (For a review of how exponents work and what fractional exponents mean, see Appendix A.)

The exponent in the oil ELF is a fraction whose numerator is 460 times the number of "well days" in the month when the oil was produced, and whose denominator is the monthly production rate at the economic limit. The number of well days is simply the sum for all wells of the number of days each of them was operated during the month. If 10 wells were each operated for 30 days during a month and two others were operated for 25 days each, then the number of well days is 350 (10 times 30, plus two times 25).

Depending on what PEL is, the exponent may be greater than, equal to, or less than one. If it is greater than one, the exponent is a "net power function" -- that is, the effect of raising to a power equal to the numerator of the exponent outweighs the effect of taking the a root equal to the denominator of the fraction. Conversely, if it is less than one, the exponent is a "net root function" and the effect of taking the root outweighs that of raising to the power.

As set out in the "simple" explanation of the ELF, the value of one minus the ratio of PEL to TP is always less than one and can range all the way down to zero. For numbers between zero and one, the effect of a "net power function" is to make the result smaller than the starting number. For example, 0.9 squared is 0.81; 0.01 to the fifth power is 0.000000001; 0.5 to the "1.000001"-th power is 0.499999653. Conversely, the effect of a "net root function" on this range of numbers is to produce a larger number: the square root of 0.81 (0.81 raised to the "one half"-th power) is 0.9; the fifth root (the "1/5"-th or

"0.2"-th power) of 0.0000000001 is 0.01; and 0.5 to the "0.999999"-th power is 0.500000347.

The value of PEL therefore has an important but subtle effect on the exponent. If PEL corresponds to more than 460 barrels a day per well, the exponent becomes a "net root function" and makes the value of the ELF larger than the starting number to which the exponent is applied. On the other hand, if PEL is less than 460 barrels times the number of well days, the exponent is a "net power function" and makes the final value of the ELF less than the number to which the exponent is applied.

B. The PEL Presumption: To Rebut or Not to Rebut?
PEL appears twice in the oil ELF formula -- once in the exponent and once in the calculation of the number to which the exponent is applied:

$$\text{ELF} = (1 - [\text{PEL}/\text{TP}])^{([460 \times \text{WD}]/\text{PEL})}$$

For oil there is a rebuttable presumption that PEL equals 300 barrels times the number of well days in the particular month. 36/ The presumption may be rebutted only once a year, and if it is rebutted, the value that is demonstrated to be the proper PEL must be used for that entire calendar year. 37/ If the presumption is not rebutted, then the formula for the ELF is, in effect, the following:

$$\text{ELF} = (1 - ([300 \times \text{WD}]/\text{TP}))^{(460/300)}$$

The decision to rebut the presumption or not, presents some subtle trade-offs that must be carefully considered before proceeding. On the one hand, if the presumption is not rebutted, then the exponent is a "net power function," which produces a result that is smaller than the number to which the exponent is applied. On the other hand, if the presumption is rebutted and shown to be greater than 300 barrels per well day, then the ratio of PEL to current production will be made greater, leaving a smaller number to which the exponent is applied. If the demonstrated PEL is still less than 460 barrels per well day, the exponent will remain a "net power function" although, as the value for PEL approaches 460 barrels per well day, the effectiveness of the exponent in reducing the number to which it is applied will diminish. The effects of rebutting the PEL -- that is, the reduction in the difference between one and the ratio of PEL to current production (that difference being the number

36/ AS 43.55.013(d).

37/ Id.

to which the exponent will be applied), and the "net power function" nature of the exponent -- will both be working in the same direction and reduce the ELF.

If PEL equals 460 barrels per well day, the exponent becomes exactly equal to one and has no effect at all on the number to which it is applied. The effect of rebutting the presumption is then simply the reduction in the difference between one and the ratio of PEL to current production, which will still yield a lower ELF than if the presumption were not rebutted.

Beyond 460 barrels per well day, the demonstrated PEL will turn the exponent into a "net root function," which will tend to offset the advantage to be gained by reducing the difference between one and the ratio of PEL to current production. Although that advantage always outweighs the offsetting effect of the exponent (in other words, it is always worth rebutting the presumption if possible, because doing so reduces the final value of the ELF), the extent to which this happens depends on how what the current average daily production per well is. The higher the production rate, the smaller the net effect is from rebutting the presumption.

The following table illustrates this for four cases: Case 1 has current average production of 500 barrels a day per well; in Case 2 it is 1,000 barrels a day per well; in Case 3, 5,000 barrels a day per well; and in Case 4, 10,000 barrels a day per well, corresponding roughly to the expectations in early 1977 for what would be the situation with the Prudhoe Bay field by the beginning of 1978. 38/

38/ The throughput capacity of TAPS represents a physical constraint on the rate of production from North Slope fields. TAPS had been planned to start up in three phases: the first at a throughput of 600,000 barrels a day; the second and 1.2 million barrels a day; and the third at 1.5+ million. Until the third phase was implemented, TAPS's throughput capacity represented the upper limit at which the Prudhoe Bay field could be produced (Phase 3 would be at or above the maximum efficient rate for Prudhoe Bay of 1.5 million barrels a day). By early 1977 the first two phases had been "telescoped" together, so that TAPS was expected to be at 1.2 million barrels a day by the end of the year. That was, of course, before the fire and explosion at Pump Station 8 while the pipeline was being filled. However, for purposes of analyzing the ELF, the assumptions used by the Legislature and the Administration reflected the planned 1.2 million-barrel-a-day rate of production from the field into TAPS, with approximately 120 producing wells.

PEL	Case 1 (TP=500) ELF	Case 2 (TP=1,000) ELF	Case 3 (TP=5,000) ELF	Case 4 (TP=10,000) ELF
300	0.245372	0.578740	0.909486	0.954370
400	0.157103	0.555743	0.908565	0.954140
450	0.095012	0.542741	0.908095	0.954023
460	0.080000	0.540000	0.908000	0.054000
470	0.063701	0.537208	0.907905	0.953977
500	-0-	0.528509	0.907618	0.953906
600	---	0.495351	0.906644	0.953670
700	---	0.453309	0.905641	0.953430
800	---	0.396362	0.904608	0.953187
900	---	0.308240	0.903544	0.952940
1000	---	-0-	0.902446	0.952690
2000	---	---	0.889149	0.949972

As the table shows, the effect of raising PEL by 100 barrels per well day from its presumed level of 300 is greatest in Case 1, dropping the ELF from 0.245372 to 0.157103. This reduction of 0.088269 in the ELF represents a tax reduction of 35.974 percent as the result of rebutting the presumption (0.088269 is 35.974 percent of the 0.245372 value of the ELF in Case 1 if the presumption is not rebutted). The reduction from similarly raising the PEL from its presumed rate steadily drops off as the rate of current daily production per well gets larger: the ELF is reduced by 0.022997 for the 1,000 barrel-a-day Case 2 (corresponding to a tax reduction of 3.974 percent); by 0.000921 for the 5,000 barrel-a-day Case 3 (tax reduction of 0.101 percent), and by a mere 0.000230 for Case 4 (tax reduction of 0.024 percent), the case approximating Prudhoe Bay as expected after the completion of TAPS start up. In fact, in the Prudhoe-type case, even showing a PEL of 1,000 barrels a day per well (which is about what PEL was then expected to be if the Prudhoe Bay producers had rebutted the presumption) would only reduce the ELF by 0.001680 from its value with the presumed PEL. Rebuttal of the presumption thus represented a potential tax reduction of only 0.176 of one percent.

The decision to rebut or not rebut the presumed PEL is thus seen to have a rule of diminishing returns, the larger the average of current daily production per well becomes. With a property with extremely productive wells, the potential advantage from rebutting the presumption may simply be too small to be worth the effort even though the property is in a high operating cost area of the state.

C. The ELF's Incentive to Continue Development Drilling in "Mature" Fields. Recent (1986) proposals to modify the ELF so that the presumed PEL is on a field-wide or

reservoir-wide basis instead of a per-well basis have overlooked the incentive that the present ELF offers for producers to continue development drilling in mature fields that are already producing at their maximum efficient rate (MER). This incentive is best illustrated by examining a particular example, rather than trying to describe it abstractly.

Suppose there is a field that is producing at its MER, which is 1,500,000 barrels a day, or 45,000,000 barrels in a 30-day month. Since this is the MER for the field, the 45,000,000 barrel figure will not change if another development well is drilled. Suppose further that there are already 500 producing wells in the field and that the presumption for PEL is unrebutted. What happens to the tax burden if the 501st development well is drilled?

Since the presumption for PEL is in effect, PEL can be replaced in the ELF formula by the expression $[300 \times WD]$. Thus the formula becomes:

$$ELF = \{1 - ([300 \times WD]/TP)^{([460 \times WD]/[300 \times WD])}\}$$

Given how WD is in both the numerator and denominator of the exponent, it cancels itself out and the exponent can be simplified to 460/300. With 500 wells all operating every day in a 30-day month, the number of well days is 15,000. Using the simplified exponent and filling in the variables with the appropriate numerical values from this example, the ELF becomes:

$$\begin{aligned} ELF &= \{1 - ([300 \times 15,000]/45,000,000)^{(460/300)}\} \\ &= \{1 - (4,500,000/45,000,000)^{(460/300)}\} \\ &= \{1 - (0.1)^{(460/300)}\} \\ &= 0.850822 \end{aligned}$$

Now if the 501st well is drilled, the number of well days will become 15,030, and the new ELF will be:

$$\begin{aligned} ELF &= \{1 - ([300 \times 15,030]/45,000,000)^{(460/300)}\} \\ &= \{1 - (4,509,000/45,000,000)^{(460/300)}\} \\ &= \{1 - 0.100200\} \end{aligned}$$

$$= 0.850532$$

While the difference in the ELF seems small -- a reduction of 0.000290 in the value of the ELF, or 0.034 percent -- its dollars-and-cents effect is not insignificant. If the field is still in its first ten years of production, the nominal tax rate is 15 percent. If it costs \$7.00 a barrel to get the oil to market, where it fetches \$15.00, the "wellhead" value is \$8.00. Assuming a one-eighth governmental royalty interest that is exempt from the Production Tax, the annual tax burden on this field with 500 wells would be:

$$\text{Tax} = (1,500,000 \text{ B/D}) \times (365 \text{ days}) \times (1 - 1/8 \text{ tax exempt share}) \times (\$8.00/\text{Bbl}) \times (15\%) \times (\text{ELF of } 0.850822)$$

$$= \$489,116,297$$

Now with 501 wells the tax becomes:

$$\text{Tax} = (1,500,000 \text{ B/D}) \times (365 \text{ days}) \times (1 - 1/8 \text{ tax exempt share}) \times (\$8.00/\text{Bbl}) \times (15\%) \times (\text{ELF of } 0.850532)$$

$$= \$488,949,583$$

In this example, drilling the 501st well results an annual savings of \$166,714 ^{39/} in the Production Tax. One must remember that the decision to drill each additional development well is a decision that must be made on its own merits. Past expenditures in developing the field may or may not have been good investments, but they are in any event irrelevant to the decision to spend additional money for further development. In contrast, a savings in the future Production Tax burden that will result from the drilling of an additional development well is definitely a factor to be weighed in the decision to drill that additional well or not, and it is one that helps tip the balance in favor of drilling it. Other favorable factors affecting the decision will be the ability to sustain production at the MER for a longer period of time if additional wells are drilled, and the likelihood that the amount of production ultimately

^{39/} It should be apparent from the calculation that the exact amount of tax savings to be realized from drilling an additional development well is also dependent on other factors as well, particularly the "wellhead" price. If in the example the market price had been \$25 instead of \$15, the tax savings would have been considerably greater -- \$375,106. Conversely, lower prices would have meant smaller tax savings.

recovered from the reservoir will be greater with more wells, both of which benefit the state as well as the taxpayer.

As this example shows, if the presumption regarding PEL has not been rebutted, all of the incentive provided under the present ELF is due to the fact that the presumed PEL is based on well days, which in turn depends on the number of development wells in operation. ^{40/} In other words, the only difference between the calculation of the ELF for 500 wells and the one for 501 wells is in the fact that there are 15,000 well days in the first and 15,030 in the second.

- ^{40/} It is a slightly different story if the presumption has been rebutted and PEL is established as a fixed number of barrels per month. There is still an incentive to drill the 501st well, but this time it is due to the fact that the well-days factor still appears in the numerator of the exponent even though it is no longer a factor in PEL (the denominator of the exponent). To illustrate how the ELF provides a drilling incentive when the presumption has been rebutted, let us start with the same figures as in the example in the main text and suppose PEL has been shown to be 9,000,000 barrels per month. With 500 wells the ELF is:

$$\begin{aligned} \text{ELF} &= \{1 - 9,000,000 / (45,000,000)^{(460 \times 15,000) / 9,000,000}\} \\ &= \{1 - 0.200000\}^{6,900,000 / 9,000,000} \\ &= 0.842757 \end{aligned}$$

With 501 wells the ELF becomes:

$$\begin{aligned} \text{ELF} &= \{1 - 9,000,000 / (45,000,000)^{(460 \times 15,030) / 9,000,000}\} \\ &= \{1 - 0.200000\}^{6,913,800 / 9,000,000} \\ &= 0.842469 \end{aligned}$$

In this example the difference in the ELF between having 500 producing wells and 501 is 0.000288. It is coincidental that this figure comes out so close to the difference in the ELF from drilling the 501st well in the example in the main text with the unrebutted presumption about PEL. The point being made here is that, if the presumption is rebutted, the present ELF still provides an incentive to drill another well.

APPENDIX A

A Review of How Exponents Work

Exponents can be sorted into two kinds: whole numbered exponents (1, 2, 3 etc.) and fractional exponents ($1/2$, $1/3$, $2/3$ etc.). The whole numbered exponents are the easiest to understand. Basically, a whole numbered exponent states how many times a particular number is to be multiplied by itself. For example,

$$4^3 = 4 \times 4 \times 4, \text{ and}$$

$$6^7 = 6 \times 6 \times 6 \times 6 \times 6 \times 6 \times 6.$$

Whole number exponents are often called "powers" -- in the two examples above, the first is four to the third power, the second is six to the seventh power.

Now suppose we want to multiply two numbers together, each of which is some power of the same number. What happens? Suppose we want to take four to the third power and multiply it by four to the second power. We already know that four to the third power is four times four times four, and four to the second power similarly is four times four. Thus,

$$\begin{aligned} 4^3 \times 4^2 &= (4 \times 4 \times 4) \times (4 \times 4) \\ &= 4 \times 4 \times 4 \times 4 \times 4 \\ &= 4^5 \end{aligned}$$

Notice that the exponent, 5, in the last line equals the sum of the two exponents, 3 and 2, of the numbers being multiplied together. One may draw from this example the following generalization: if a number, A, to the N-th power is multiplied by A to the M-th power, the product is A to the "N plus M"-th power, or

$$A^N \times A^M = A^{(N + M)}$$

(Remember, though, that it must always be the same base number that is being taken to the different powers and mul-

tiplied together, for this generalization to be true. A to the N-th power times B to the M-th power does not equal A times B taken to the "N plus M"-th power, nor does it equal just A to the "N plus M"-th power or B to the "N plus M"-th power. As a generalized statement, A to the N-th power times B to the M-th power equals A to the N-th power times B to the M-th power, and that's as simple as the statement can be made and still be a generalized statement. In limited kinds of cases it can be made into a simpler statement, but only when there are special values for A and B or special values for M and N, or both.)

Exponents have a similar property when division is involved instead of multiplication. Suppose we wish to divide five to fifth power by five to the third power (the third power of a number is called its "cube"; five to the third power is "five cubed"). The following shows what happens:

$$\begin{array}{r}
 5 \\
 5 \\
 \hline
 3 \\
 5
 \end{array}
 = \frac{5 \times 5 \times 5 \times 5 \times 5}{5 \times 5 \times 5}$$

$$= \frac{5 \times 5 \times 5 \times 5 \times 5}{5 \times 5 \times 5}$$

$$= 5^2$$

Note that the exponent of the answer equals the difference between the exponent in the dividend (five to the fifth) and that in the divisor (five cubed). The generalization to be drawn from this example is that, when different powers of the same number are divided into each other, the exponent in the result equals the difference between those powers:

$$\frac{A^N}{A^M} = A^{(N - M)}$$

This generalized equation gives meaning to two special cases: the numbers one and zero when used as exponents. If N equals M plus one, then:

$$\frac{A^1}{A^1} = A^{(1 - 1)}$$

$$= \frac{A^N}{A^M}$$

$$= \frac{A^{(M+1)}}{A^M}$$

$$= \frac{A^M \times A}{A^M}$$

$$= A$$

Thus, any number to the first power equals that number. (The preceding demonstration does not apply when A equals zero, because it would involve dividing by zero; however, the generalization still applies in the case of zero, so that zero to the first power is zero.)

Now, to get the zero-th power, N and M must be equal, and then the following happens:

$$A^0 = A^{(N-M)}$$

$$= \frac{A^N}{A^M}$$

$$= \frac{A^N}{A^N}$$

$$= 1$$

Therefore, any number (except zero itself) raised to the zero-th power equals one.

Now, what happens if a number being raised to some power is itself the power of another number? For example, four is two to the second power (the second power of a number is its "square"; two to the second power is "two squared"). What is four cubed if it is converted into powers of two?

$$\begin{aligned}
 4^3 &= 4 \times 4 \times 4 \\
 &= (2^2) \times (2^2) \times (2^2) \\
 &= (2 \times 2) \times (2 \times 2) \times (2 \times 2) \\
 &= 2 \times 2 \times 2 \times 2 \times 2 \times 2 \\
 &= 2^6
 \end{aligned}$$

In other words,

$$\left[\begin{matrix} 2 \\ 2 \end{matrix} \right]^3 = 2^6$$

Notice that the exponent 6 in the answer equals 2 times 3. Once again this example gives rise to a generalization: if the quantity, A to the N-th power, is itself raised to the M-th power, the result equals A to the "N times M"-th power:

$$\left[\begin{matrix} N \\ A \end{matrix} \right]^M = A^{(N \times M)}$$

When a number is raised to the N-th power, we are asking what the product is of multiplying one by that number N times. The N-th root of a number works the other direction. For a given number, it asks what number, when raised to the N-th power, will yield that given number. Thus, two is the cube root of eight, because two cubed (i.e., two times two times two) equals eight.

To show the N-th root of a number (call it A), the exponent is the fraction 1/N. The reason for having 1/N as the exponent to show the N-th root of a number is as follows: Let R stand for the N-th root of A. then by definition R to the N-th power equals A, or in mathematical terms:

$$R^N = A$$

Now let X stand for the exponent applied to A that is to be used to signify the N-th root of A; In other words, A to the X-th power equals the N-th root of A, which is R. In mathematical terms again, this is:

$$\begin{matrix} X \\ A \end{matrix} = R$$

Substituting A to the X-th power in the second equation above gives the following:

$$R^N = \left[\begin{matrix} X \\ A \end{matrix} \right]^N = A$$

Just a little bit above we showed that if the N-th power of a number is itself taken to the M-th power, the result equals that base number taken to the "N times M"-th power. Hence,

$$\left[\begin{matrix} X \\ A \end{matrix} \right]^N = A^{(X \times N)} = A^1 = A$$

Since A to the "X times N"-th power equals A to the first power, then the exponents, although expressed differently, must be equal. So, X times N equals one. Therefore, X equals one divided by N, or 1/N. Since R, the N-th root of A, equals A to the X-th power, and since X equals 1/N, then R equals A to the "1/N"-th power. Q.E.D.

It is now but a simple step to understand what fractional exponents do. If the exponent is a fraction, M/N, it simply means that the N-th root of the base number is found and then that root is raised to the M-th power, or alternatively, that the base number is first raised to the M-th power and then the N-th root is taken. In mathematical terms:

$$\begin{aligned} A^{(M/N)} &= A^{[(1/N) \times M]} \\ &= \left[A^{(1/N)} \right]^M \end{aligned}$$

or

$$\begin{aligned} A^{(M/N)} &= A^{[M \times (1/N)]} \\ &= \left[A^M \right]^{(1/N)} \end{aligned}$$

It does not matter which is done first, taking the N-th root or raising to the M-th power, as a brief example will show. Suppose we want to take eight to the two-thirds power. The cube root of eight is two, which when squared equals four. Now, reversing the order between taking the root and raising

to the power, the square of eight is 64; the cube root of 64 is four. Both ways, the answer is four.

Fractional exponents expressed in decimal terms are no different from any other fractional exponent. Thus,

$$A^{0.125}$$

is simply the 125th power of the 1,000th root (or equivalently, the 1,000th root of the 125th power) of A. If, as here, the fraction can be simplified (0.125 equals 1/8), there is no change in the result if the simpler fraction is substituted (nor would there be if a less simple form of the same fraction were substituted for a simple one). The 125th power of the 1,000th root of A is exactly equal to the eighth root of A:

$$A^{0.125} = A^{(1/8)}$$

TRANSCRIPT OF UNITARY TAX REPORT
from Alaska News Nightly 2/4/87
by Jay Baltezore

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Two weeks ago Governor Steve Cowper proposed that Alaska repeal its unitary tax formula as a way to attract foreign and multinational corporations. Under the existing tax system, the state has to take a corporation's total structure into account instead of just what it does in Alaska. The tax is calculated by determining a companies' earnings in the state and multiplying that number by whatever percentage that is of its total earnings worldwide.

The governor says having to report worldwide earnings discourages companies from doing business here. Many economists agree, both in Alaska and elsewhere. Across the country, states are looking at repealing their unitary taxes as they compete more and more aggressively for overseas investors. Jay Baltezore reports:

"What the unitary tax, I believe, to the companies out there in the international marketplace, is that it gives them essentially a choice, and its sort of a timing choice. They'll look at Alaska, and they'll look at coal or fish or timber or something else, and they'll say, "Okay, how much do I really need that particular commodity, that item, that resource?"

Dan Dixon has been one of Alaska's most vocal advocates for a change in the state's corporate tax structure. Dixon is the Director of International Trade for the Alaska Department of Commerce and Economic Development. His job: to lobby foreign corporations to invest in the state. Dixon is but one of a growing number of private and public officials who are taking this view of corporate tax and it seems this ground swell of support has come none too soon.

Alaska remains one of only three states that hasn't repealed unitary tax. So this latest move is hardly on the forefront of change. In among those who are clamoring for new legislation, only a few would say unitary tax has been bad for the state. After all, Alaska's economy in the recent past has been controlled by large multinational firms in one major industry: oil. And because they have been required to report worldwide activities as part of Alaska's tax system, the companies have been prevented from assigning most of their business costs to Alaska to avoid paying tax on their production or sales. But all that's changed now. The price of oil has taken a steep drop and the move to diversify the state's economy is gaining momentum. And the way to attract firms, particularly large multinational corporations, say officials, is to provide a tax incentive which doesn't penalize them for doing business elsewhere.

"The states that have passed the unitary tax, like Florida for example, when they did that I think they lost a big IBM plant that was going to be built there. IBM said "forget it, you're not going to take taxes on our worldwide operations just because we have one plant in Florida."

That's Roger Miller, an economist with the Center for Policy Studies at Clemson University. He's also completed a study for the National Science Foundation on why companies locate in particular areas. Florida eventually

repealed its unitary tax and regained the support of IBM. So did California just this last year after several Japanese firms balked at further expansion there under the unitary system. California officials admit they will lose tax money as a result of the change, about \$30 million next year and escalating to about \$200 million in 1990 and 1991. But they claim it will eventually be made up to added property, sales, income, and payroll taxes by incoming firms. Of course, it's fair to say Alaska is hardly in the same league as California. Yet, many observers believe the two states are trying to accomplish the same ends: attract foreign investors, particularly those from the far east.

Frank Danner is the Senior Accountant for the Anchorage office of Peat Marwick Mitchell & Co. and chairs the Alaska Korea Business Council. He says diversifying Alaska's economy won't happen overnight, but the state needs some incentives to get the process moving. "We get enough money from the oil industry. We get, from the oil industry's standpoint, too much money from them anyway. We're not going to, by repealing the unitary, we're not going to increase substantially revenues and develop mines that are not economic, and where there is no world market for the products. There's not going to be a panacea. But it does send signals that the Orientals are very interested in. They've commented on them when I've had trips over there regarding the tax structure and the potential for change."

Several states which have repealed their unitary tax have opted for a system known as the water's edge tax. Although it can take several forms, water's edge is generally viewed as a domestic unitary tax whereby a company's U.S. sales, assets and payroll are calculated with in-state figures. It tends to give some advantage to a company which has only limited U.S. investments. Another alternative is separate accounting which takes into account only in-state sales and expenses, or in the case of oil and gas firms, in-state production. Alaska repealed separate accounting in 1981 in the wake of litigation by oil companies who questioned its constitutionality. The State Supreme Court has since ruled that separate accounting is legal but the state has not chosen to reenact it.

Tax attorney, Harold Snow, says in repealing unitary tax, the state has to take some care in choosing a system to replace it. Snow is a tax partner with the Anchorage office of Robertson, Monagle, and Eastaugh and he says Alaska should tailor its tax system to fit the type of companies it wants to attract. "I think that for most of your industrial concerns, separate accounting is more favorable than the unitary tax, and so I guess the thing that the state would look at basically is how does separate accounting versus unitary accounting impact the businesses that it is trying to get here. I think the state would be foolish to try to do it on a real broad, rushed spectrum, because you're not going to get a new silicon valley up here. It's never going to work, so you have to target what is practical, pragmatic for the state and take a look at it that way."

So far, the Cowper Administration has done little beyond suggesting a change in the tax system. Officials with the Office of Management and Budget say they plan to investigate the matter later this month. In addition, some tax analysts from California have been invited here to share information on that state's program with Alaska revenue authorities. But whatever shape the Cowper plan may take, it's certain to gain the close scrutiny of Alaska's oil

and gas industry. The industry doesn't like tax changes and it's adjusted to more than a half dozen since statehood. Last year, the industry mounted a major publicity drive to discourage a move back to separate accounting and it's assumed it will also oppose a Cowper plan to delay imposition of the new economic limit factor due to take effect this summer. Although oil industry officials have been reluctant to publicly criticize Cowper's proposal to drop the unitary tax, one company person complained that it isn't responsible for the Cowper Administration to penalize oil companies to attract Mitsubishi. And it appears that whatever system is imposed to replace the unitary tax, one or more oil firms will pay more state tax.

Dan Dixon, of the Department of Commerce and Economic Development admits he may soon be locking horns with the oil giants over unitary tax. But he insists the change is needed, with or without the support of the industry. "My hope would be that when we sit down at the table, that if they are on the other side of the table, it's only because there aren't enough chairs on the side that I'm on or the governor is on. We would hope that they would, if there is a move on the part of the legislature or the governor to change that particular act, that particular tax structure with respect to the unitary tax, that they would work with us in developing a system that would cause them the least heartburn possible."

Ironically, this move away from the unitary tax comes at a time when some key lawmakers are reappraising the value of separate accounting. A report released last year by the Alaska Department of Revenue suggested the state would lose money if it reimposed that tax system because it's sensitive to low prices, even those in the current market. However, several legislators now say those figures are misleading and that the state could boost its revenues with separate accounting down to a price of \$11 per barrel of oil.

For APRN in Fairbanks, this is Jay Baltezure.

ARCO Alaska, Inc.
Post Office Box 100360
Anchorage, Alaska 99510
Telephone 907 265 6511



Harold C. Heinze
President

December 2, 1986

Senator Frank Ferguson
Chairman
Joint Special Committee on State Tax Policy
1024 W. 6th Avenue, Suite 203
Anchorage, Alaska 99501

Dear Senator Ferguson:

The Joint Special Committee on State Tax Policy's recent meetings have focused in large measure on the Economic Limit Factor and its applications to the North Slope oil fields. While the presentations made to the Special Committee addressed impact on state revenues in detail, we would like to present a producers' perspective of ELF and its impact on future oil production.

The ELF statute as enacted is recognition of the simple economic fact that as production declines in a well, the cost of producing a barrel increases. As a result, ELF is a mechanism to help ensure that oil field development is not prematurely terminated and serves as an incentive to further invest in fields such as Kuparuk, Lisburne and even Prudhoe Bay to maximize total production and extend the life of the field. In short, ELF is one mechanism the State has provided to produce more oil, provide more jobs and to continue jobs longer than would be the case with a flat severance tax rate.

We do not concur with the statements made at the hearings that ELF was a tax break not contemplated by the legislature. To the contrary, we believe the legislature knew full well the ramifications of the scheduled tax impact when it enacted ELF and created a sophisticated mechanism that provided severance tax income to the State without those taxes causing premature abandonment of production.

Today, ELF is an important consideration in ARCO Alaska's investment decisions on the North Slope. Perhaps even more important in our considerations is

Senator Frank Ferguson
Page 2

the issue as to whether or not we as an industry can plan on a stable share of revenue to be provided as taxes for the privilege for operating in this great state. To us, a stable tax policy in Alaska is the single most important contribution the legislature can make to provide a business environment which is conducive to continued petroleum exploration, development and operations.

Thank you for considering my comments. I would be happy to meet with you or other committee members to discuss these issues further at your convenience.

Very truly yours,

Harold C. Heinze
Harold C. Heinze

/pfm

REPRESENTATIVE
BEN GRUSSENDORF

P.O. Box 928
SITKA, ALASKA 99835
(907) 747-8458

RULES COMMITTEE
LEGISLATIVE COUNCIL

DISTRICT 3
ELFIN COVE
PELICAN
PORT ALEXANDER
SITKA
TENAKEE

Alaska State Legislature



House of Representatives
SPEAKER OF THE HOUSE

WHILE IN JUNEAU
P.O. Box V
JUNEAU, ALASKA 99811
(907) 465-3824
(907) 465-3720

October 14, 1986

To: Rep. Ben Grussendorf

From: *Mary* Mary Halloran
Special Assistant

This paper outlines the policy issues inherent in discussion of Alaska's severance tax. These issues have been repeatedly identified since the first major discussions of the production tax in the 1970's.

1. Should the State set a floor for the severance tax, i.e. a minimum tax per barrel produced?
2. If the State sets a floor for the severance tax, should the floor be indexed for inflation?
3. Recognizing that the severance tax can impact the economic limit (breakeven point) of field production, does the State, as a matter of policy, desire to extend field production life?
4. If the State desires to extend field production by an economic limit factor, is the existing formula working to extend production on marginal fields?
5. If the existing ELF does not function as it should in terms of policy objectives, how should it be changed?
6. Should the ELF (existing or altered) be applied to the severance tax floor?
7. If the ELF is applied to the severance tax floor, should royalty barrels be exempted from the ELF?

Currently the Tax Policy Committee has before it eight alternatives suggested by the Department of Revenue and OMB:

1. Establish an 80¢ floor in the severance tax to which the existing ELF does not apply.
2. Establish an 80¢ floor in the severance tax to which the existing ELF does not apply and change the ELF formula so that the PEL is set without discretion at 300 barrels, eliminating the exponent.
3. Establish a \$1.50 floor in the severance tax to which the existing ELF does not apply and add an inflation index to the floor.
4. Eliminate the ELF on all fields.
5. Establish an alternative ELF which measures total field productivity rather than individual well productivity.
6. Establish an alternative ELF (field-based applicability) and establish a severance tax floor to which the alternative ELF does not apply.
7. Postpone the scheduled application of the existing ELF to Prudhoe Bay only.
8. Retain the current statute.

STATE OF ALASKA

DEPARTMENT OF REVENUE

BILL SHEFFIELD, GOVERNOR

STATE OFFICE BUILDING
P.O. BOX 5A
JUNEAU, ALASKA 99811

October 10, 1986

The Honorable Ben Grussendorf
Speaker of the House
P.O. Box 928
Sitka, Alaska 99835

At a recent meeting of the Special Joint Committee for State's Tax Policy, you requested this Division provide you with a basic explanation of the tax issues involved in the majority of our cases currently in appeal status. The following discussion covers the five major taxes on the petroleum industry.

AS 43.55 - Oil and Gas Properties Production Tax
AS 38.05 - Royalties

Royalty audits (with the exception of Net Profit Share Lease audits) have been tentatively curtailed pending the outcome of the Amerada Hess litigation. In prior audits, however, the value basis used for the purpose of calculating the standard royalty was, with minor exceptions, virtually identical to that used for production tax. The audit issues listed below, therefore, pertain to both. It should be noted that royalties are the responsibility of the Department of Natural Resources, and royalty audits performed by the Department of Revenue result in recommendations only and not assessments per se. (Statutory and regulatory references relate to production taxes; royalty provisions are included in the lease contract.)

Gross value:

Issues relating to the value of the production at its sales delivery point or, in the case of producers that refine their own, at the gate to the refinery. Specific issues include calculation of the full consideration received in the sale and the prevailing value of the production in a particular sales market. [AS 43.55 and 15 AAC 55.150-172]

Transportation costs:

Issues relating to the cost of transporting oil or gas from its point of production to the sales delivery point or gate to the refinery. Examples are issues relating to pipeline tariffs, canal tolls and tanker costs, including depreciation and rate of return. [AS 43.55.150 and 15 AAC 55.180-200]

AS 38.05 - Royalties: Net Profit Share Lease (NPSL)

For purposes of a NPSL the State of Alaska is a joint venturer with the leaseholder(s). NPSL audits are, therefore, joint venture audits, with issues relating primarily to the pricing of goods and services charged to a particular lease. As with other royalty audits performed on behalf of the Department of Natural Resources, results are in the form of a recommendation. [11 AAC 83.201-295]

AS 43.20 - Alaska Net Income Tax

Internal Revenue Code:

Issues relating to those sections of the Internal Revenue Code that have been adopted by the State of Alaska. [AS 43.20.021]

Unitary vs separate accounting:

Issues relating to worldwide combination, primarily involving the determination of members of the unitary group.
[AS 43.20.031(i) and 15 AAC 20.300-320]

Business income vs non-business income:

Issues relating to the differentiation of non-business income under the Multistate Tax Compact. Specific issues involve certain interest and dividend income and income arising from the sale of certain investments. [AS 43.19.010 and 15 AAC 19.011-091]

Apportionment factors:

Issues relating to the calculation of the property, payroll and sales factors under the Multistate Tax Compact. Specific issues include both the determination of whose property, payroll and sales to include (unitary type issues) as well as what type of property, payroll and sales qualifies.
[AS 43.19.010 and 15 AAC 19.141-302]

.072 issues:

Issues relating to modifications to the Multistate Tax Compact specified in AS 43.20.072 to be used by taxpayers engaged in oil or gas production or pipeline transportation in the State. Specific issues include the classification of business entities and activities into petroleum and non-petroleum business categories, the handling of Outer Continental Shelf properties, and various adjustments made to intangible drilling and development costs and depletion and depreciation deductions. [AS 43.20.072 and 15 AAC 20.410-590]

AS 43.21 - Alaska Oil and Gas Corporate Income Tax

The gross value and transportation cost calculations used for the AS 43.21 income tax are, with minor exceptions, virtually identical to those used for royalty and production tax purposes. The related audit issues are therefore identical.

Gross value:

Issues relating to the value of the production at its sales delivery point or, in the case of producers that refine their own, at the gate to the refinery. Specific issues include calculation of the full consideration received in the sale and the prevailing value of the production in a particular sales market. [AS 43.21.020 and 15 AAC 21.120-125]

Transportation costs:

Issues relating to the cost of transporting oil or gas from its point of production to the sales delivery point or gate to the refinery. Examples are issues relating to pipeline tariffs, canal tolls and tanker costs, including depreciation and rate of return. [AS 43.21.020 and 15 AAC 21.128-130]

Production expenses:

Issues relating to the calculation of certain deductible expenses pertinent to Alaskan production including royalties, production taxes, windfall profits tax, direct operating costs and certain exploration costs; the amortization of capitalized costs such as those for acquisition and development (includes the issue of oil and gas reserves calculation); and a pro rata deduction for uncapitalized interest and overhead expense. [AS 43.21.020 and 15 AAC 21.200-290]

Pipeline income:

Issues relating to taxable income from oil and gas pipelines in the State. The issue of the deductibility of uncapitalized interest on capital borrowed to acquire, construct, or enlarge the facilities of a pipeline is included in this category
[AS 43.21.030 and 15 AAC 21.300-450]

Apportionable income:

Issues involving taxable income that is not related to oil and gas production or pipeline transportation. Specific issues are similar to the first four categories listed under AS 43.20. [AS 43.21.040 and 15 AAC 21.500-550]

The Honorable Ben Grussendorf
Page 4
October 10, 1986

AS 43.56 - Oil and Gas Exploration, Production and Pipeline
Transportation Property Taxes

Taxable property:

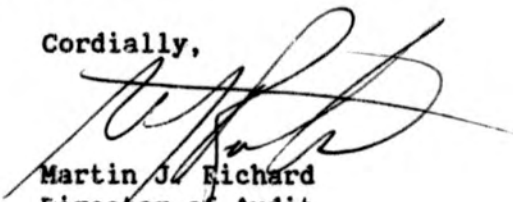
Issues relating to the taxability of certain property.
[AS 43.56 and 15 AAC 56.]

Valuation of taxable property:

Issues relating to the assessed valuation of the pertinent
property. [AS 43.56 and 15 AAC 56.]

Thank you for the opportunity to share with you the major issues
facing the Department at this time.

Cordially,



Martin J. Richard
Director of Audit
(907) 465-2320

MJR:GBC:sp

86-140

STATE OF ALASKA

DEPARTMENT OF REVENUE

BILL SHEFFIELD, GOVERNOR

STATE OFFICE BUILDING
P.O. BOX SA
JUNEAU, ALASKA 99811

October 9, 1986

The Honorable Ben Grussendorf
Speaker of the House
P.O. Box 928
Sitka, Alaska 99835

OCT 10 1986

RE: Division of Audit Full Staffing Requirements

Dear Mr. Speaker:

At a recent meeting of the Special Joint Committee for State's Tax Policy, you requested this Division provide you with an analysis of the costs and anticipated revenues associated with funding an increase in the State's tax audit force. At the present time, given the States' fiscal crisis, it is imperative that the size of this agency's audit force be increased. Unfortunately, during the past two legislative sessions, the Audit Division has taken substantial cuts to its operating budget. In FY 85, the combined budgets for the Petroleum Revenue Division and Audit Division budgets were \$5 million. By FY 87, as recently revised, the budget stood at roughly \$4.2 million. To reach the Governor's first 15% cut, this Division was required to withhold funding of six auditor positions.

Consequently, the first step toward returning this agency to adequate funding is to restore our budget to the amount authorized by the legislature for FY 87 (\$566,100). This Division is long overdue for an increased appropriation to raise the number of audits we conduct and consequently increase revenues through additional assessments. Prior statistical results of our operations support this conclusion.

In FY 86 alone, this Division assessed nearly \$230 million, representing audits of 1,379 returns. Of these amounts, \$220 million was assessed on audits of only 201 oil and gas type tax returns. While these results represent significant revenues to the State, they also comprise only a small portion of the 733 oil and gas tax returns which are currently under audit, or are backlogged awaiting audit. With each passing month an additional 21 production tax returns are filed and placed in pending status awaiting an available auditor.

In addition to the difficulty we face in keeping current with the volume of returns we must audit, significant auditor time is necessary to assist our Appeals Branch, Hearing Officers and Attorney General's Office in defending prior audits through the appeal process. Presently we have seven auditors assigned to the Chapter 21 and 55 taxes. Often, the field work will require the presence of two or more auditors in order to

complete an audit within a reasonable period of time. With twenty or more different taxpayers, it is unavoidable that we must have our most experienced auditors act as lead auditor on one case and as an assistant on another case. With additional auditors on staff, our most experienced auditors will be able to devote themselves entirely to the larger cases and not be required to assist in a less productive capacity as an assistant.

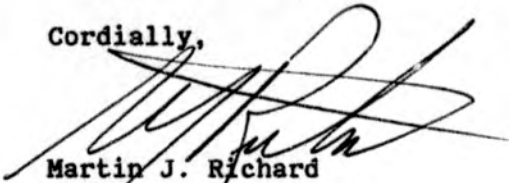
With this in mind the Department proposes to increase its audit and appeals staff to enable us to complete audits more quickly, conduct a greater number of appeals, and without a doubt return substantial revenues to the general fund. The attached schedule is not a "Christmas Wish List", but rather represents a realistic idea of the number of auditors we can utilize productively right now. It is not reasonable for us to request more staff than this for the present. Having only four lead or supervisory auditors (Revenue Auditor V) in Anchorage, these team leaders would be overburdened trying to train more than two additional auditors each for the next year along with their regular audit activities. For this plan to be successful we must be able to train additional auditors while at the same time completing a greater number of audits. Bringing on too many auditors at one time would likely be counterproductive. In future years though, we believe that doubling the size of our audit force would not result in diminished return on your investment. That question needs to be answered later in light of probable changes in tax laws and the State's economy.

Many variables make it difficult to estimate the amount of increased tax assessments which will result with additional staff. On a five-year average, petroleum auditors generate \$11 million each in additional tax assessments. By adding back the six audit positions unfunded in this year's budget, and the eight positions which we propose for the new audit teams, we estimate an additional \$96.8 million in annual State revenues. Based upon our experience in auditing prior year's returns, we anticipate an additional \$500 million in assessments just for the years currently under audit. This estimate does not include what may eventually be assessed for tax years 1984 and 1985. These estimates are predicated on the belief that the technical issues developed in audits currently under appeal are anticipated to exist in subsequently filed returns. As most of the audit issues are being appealed, future court decisions may have substantial impact on the amount of increased revenues actually received by the State.

The Honorable Ben Grussendorf
Page 3
October 9, 1986

Without additional staff however, completion of the field audit work, handling of the appeals and eventual collection may be postponed several years. We plan to submit two increments for FY 88; (a) restore the \$566,100 previously cut, and (b) additional resources for \$706,950 as shown in the attached exhibit. Thank you for the opportunity to express our concerns and suggested solutions regarding the State's audit resources.

Cordially,



Martin J. Richard
Director of Audit
(907) 465-2320

MJR/SEK/tb

86-139

ASSOCIATED COSTS

FY 88

A. 8 Revenue Auditor III
Salary Costs \$50.6 each \$404,800

Travel Costs
6 Trips each @ \$2.0 96,000

Contractual Costs

(4) Wang Portable Laptops @ \$4.1	16,600
(4) Wang Terminals @ \$2.0	8,000
(1) Wang Printer	5,975
Telephone/Communications	4,000
Space Lease Costs	28,800
16 Ports & Serial IOP	3,150
Local Attach	1,050
Electrical/Maintenance	5,000

Supplies

Software DP Supplies	3,200
Calculators, Office Equipment	<u>4,800</u>

Sub-total \$581,375

B. 2 Programmer/Analyst IV @ \$52.2 104,400

Contractual Costs

(2) Wang Terminals @ \$2.0	4,000
(1) Wang Twin Sheet Printer	5,975
Electrical/Maintenance	2,000
Space Lease Costs	7,200

Supplies

Calculator, Office Equipment, Software	<u>2,000</u>
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Sub-total \$125,575

Grand Total \$706,950

BILL SHEFFIELD, GOVERNOR

DEPARTMENT OF REVENUE

OFFICE OF THE COMMISSIONER

POUCH S
JUNEAU, ALASKA 99801
PHONE: (907) 465-2300

January 30, 1986

The Honorable Al Adams
Chairman
House Finance Subcommittee on Oil and Gas
Alaska State Legislature
P.O. Box V
Juneau, AK 99811

Re: Expedite Collection of
Disputed Taxes

Dear Representative Adams:

A proposal has been raised in the Interim Report of the House Finance Subcommittee on Oil and Gas (January 17, 1986) to require prepayment of disputed taxes at some stage in the appeal process in order to expedite the collection of disputed taxes. We appreciate the opportunity afforded us to comment on this issue.

The Department of Revenue is concerned that the proposal will have a detrimental impact on its operations, emphasis, and ability to litigate tax challenges. Rather than expedite resolution of tax disputes, it is the Department's view that the prepayment requirement concerning disputed taxes will create delays. The adverse impact will be greater the earlier the prepayment requirement is imposed. Additionally, the prepayment proposal will affect taxpayers other than oil and gas companies if it is imposed on the corporation net income tax under AS 43.20 et. seq.

Instead, we believe the collection of disputed taxes can be expedited more successfully through approaches other than the prepayment requirement. These approaches have been recently adopted and their effect is already being felt.

In this letter, we outline the handling of disputed tax controversies by examining the assessment and appeal process, discussing the reasons for delays, and the effect the prepayment requirement may have on the various levels of the Department's appeal process.

I. The Assessment And Appeal Process

There are two levels of administrative appeal within the Department, the informal conference and the formal hearing. Appeal after the formal hearing decision is to Alaska Superior Court. The appeal process can proceed through the courts to the U.S. Supreme Court. Final resolution of the appeal occurs after exhaustion or waiver of judicial appeal rights. It is only then that the disputed taxes must be paid if the final determination is against the taxpayer.

A. The Assessment Level Of Review

The Audit Division is responsible for reviewing tax returns and monitoring taxpayers through audits to insure that taxable income is properly calculated and reported. If the Division determines that an adjustment is required, it will inform the taxpayer that either more taxes are owed or a refund is warranted. If more taxes are due, an assessment notice will be issued.

As a practical matter, assessments are often made as the three year statute of limitations is about to expire. These assessments are often high as compared to the final adjusted assessment made during the appeal period. The reason is that auditors must make an aggressive although reasonable evaluation in order to insure that the State receives the money it is entitled to. They cannot later amend the assessment after the statute of limitations for assessments has expired except under limited circumstances. The taxpayer has the right to appeal an assessment within 60 days of being notified of an assessment.

1. Reasons For Delay

There are two primary reasons for delay during the assessment period. Assessments often are made as the three year statute of limitations is about to expire because audits of taxpayers, especially large multi-state and multi-national taxpayers, can take years to complete. Other audits underway may deal with the same issue or taxpayer. It is not an administratively sound practice to litigate the same issue for each taxpayer for each tax year. Accordingly, a delay may occur to allow a "lead" audit to proceed to completion.

2. Prepayment after Assessment

As a practical matter, if prepayment were required after the assessment, taxpayers might not be as cooperative in providing the information during the three year audit period, or in waiving the statute of limitations. This lack of cooperation would require the department to employ more discovery devices (subpoenas, summons, interrogatories, depositions, etc.), which would be costly in both time and money.

B. Informal Conference

The informal conference is the first level of review of a challenged assessment. A conference officer discusses the assessment with the taxpayer through correspondence, in-person, or through telephone conferences. Unlike the formal hearing in which the Appeals Section does take an adversary role on behalf of the Audit Division, the purpose of the informal conference is to provide an opportunity for discussion. As a result of this nonadversarial approach, the expertise

of the Appeals Section, and its ability to settle cases, nearly 90% of all assessment disputes are resolved at the informal conference level of review.

1. Reasons For Delay

There are a number of reasons for delay at the informal conference level. Many of these reasons are identical to those experienced at the assessment level. The time frame for holding an informal conference may vary, depending on the complexity of the issues, stays and consolidations of appeal, the availability of the pertinent officials of the taxpayer, the number of informal conference officers, etc.. A great deal of the assessment actions have been stayed until resolution of certain basic issues. Staying appeal cases allows the Department to screen similar cases and proceed with the "best" test case.

2. Prepayment after Informal Conference

If prepayment of disputed taxes is required after the informal conference decision, the nature of the informal conference will become adversarial. Part of the reason for this change in atmosphere is that attorneys will be forced to enter the tax appeal process at an earlier stage of review.

C. Formal Hearing

The formal hearing is the administrative trial level for tax disputes. A Department of Revenue hearing examiner is appointed by the Commissioner to serve as a hearing officer for the appeal. A formal hearing is often preceded by a prehearing conference, briefing, and discovery requests. Full due process safeguards are provided with adequate notice and full opportunity to be heard by an impartial hearing officer. A formal hearing decision is issued after the record is closed and reviewed.

1. Delays In The Formal Hearing Process

Delays have occurred in the formal hearing process for some of the same reasons previously mentioned. In addition, the nature of the hearing process in affording both the taxpayer and the Audit Division the full opportunity to explain their respective cases causes delays. Additionally, since the Hearing Examiner Section handles not only tax appeals but other revenue appeals, staff limitations and backlogs of cases contribute to delays. Delays have also resulted because of stays pending resolution of a number of tax cases before the courts, both at the federal and state levels.

2. Prepayment of Disputed Taxes After Formal Hearing

Payment after formal hearing occurs, of course, if the taxpayer does not appeal to the Superior Court. Prepayment as a condition or prerequisite for judicial action may require the creation of a different form of action. In other words, instead of an appeal, a taxpayer would file an original action claiming a refund. The Superior Court would not be limited to review of the formal administrative record, but would, in effect, try the case *de novo*. The Department's concerns about such a procedure are two-fold: one, delays of substantial periods would be encountered; and, two, the Court's decisions on tax issues would not be based upon the administrative record, but upon new findings of fact and conclusions of law. In effect, contested cases will have two trials with potentially differing results, creating confusion in the interpretation of Alaska's tax law.

D. Other State's Assessment And Appeal Processes

We are unaware of any state that requires prepayment of disputed income taxes during the administrative appeal process, although some require payment at later levels of judicial review. State Tax Review Agencies: Organization and Practices, Federation of Tax Administrators Research Report No. 79 (December 1978). The prepayment requirement for disputed taxes is often limited to certain types of taxes that would therefore effect a limited group of taxpayers. See In the Matter of the Tax Appeal of Simpson Mannor, Inc., 548 P.2d 246 (Haw. 1976) (excise taxpayers required to pay before proceeding to Tax Appeals Court, although net income, real property, public service company and bank franchise taxpayers could appeal without prepayment of disputed taxes).

II. Alternative means to Expedite Collections Of Disputed Taxes

There are a number of alternatives to prepayment of disputed taxes, many of which we have implemented to expedite the collection process for appealed taxes.

At the audit level, assessments are progressing at a more rapid rate. The major reason for this change is that through experience, advanced marketing data, familiarity with the various taxpayers' businesses, and clarification of legal issues and positions, audits are shorter in duration and more thorough. Also, resolution of certain issues has resulted in fewer contested issues.

At the informal conference level, a major breakthrough in the dam of backlogged cases was the judicial resolution of the constitutionality of the separate accounting methodology under AS 43.21 et. seq.. ARCO v. State of Alaska, Department of Revenue, Alaska Supreme Ct. Op. No. 2965 (August 16, 1985, appeal dismissed by the U.S. Supreme Ct on January 13, 1986. Now, other issues that were stayed pending the resolution of the constitutional issues are progressing through informal conferences.

Another major change is the transfer of the informal conference functions to the Appeals Section of the Audit Division. The Appeals Section has five conference staff members who are attorneys, CPAs, or audit staff with extensive years of experience in tax matters.

At the formal hearing level, the Alaska Supreme Court's resolution of various tax issues has greatly impacted the number of cases or issues stayed at the formal hearing level of appeal. The reduction in the backlog of cases and additional staff should enable the Hearing Examiner Section to be able to issue a decision within six months of closure of a hearing by the end of 1986.

Another major change affecting the collection of disputed tax monies was the increase in the tax interest rate. AS 43.05.225 was amended in 1982 by raising the interest rate on delinquent taxes from eight percent to twelve percent. As a result, taxpayers no longer have the disincentive to pay and then to use the disputed taxes on other investment opportunities while the appeal is pending.

III. Summation

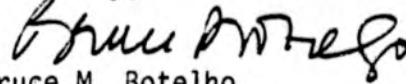
We have strong concerns that the requirement to prepay disputed taxes at some level in the review process will not expedite the resolution of disputed tax cases. Rather, we think it could impair the strategy and ability of the Department to defend its assessments and may create an adversary relationship that could permeate the assessment and appeal process, end the practice of voluntary compliance, hamper the ability of the Department to obtain needed information, diminish the Department's success rate in defending its assessments and decisions, delay the resolution process, and require additional staff at every level of the assessment and appeal process.

We believe that expedition of collecting disputed taxes is better accomplished through other approaches, many of which are currently being implemented. Greater experience and knowledge at the audit level in administering the new tax programs, a more proficient appeals staff, negotiated settlements of cases at the informal conference level,

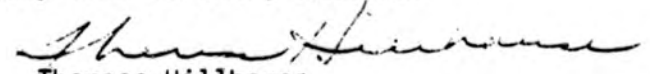
The Honorable Al Adams
January 30, 1986
Page 6

reduction of the backlog of appeals at the formal hearing level, and recent Alaska Supreme Court cases have and will greatly expedite the resolution of disputed tax cases. An increase in the interest rate has already spurred early payment of disputed taxes. These changes should insure earlier payment of taxes owed the State.

Sincerely,



Bruce M. Botelho
Deputy Commissioner, Taxation



Theresa Hillhouse
Revenue Chief Hearing
Examiner

cc: Members of the House Finance Committee

Karen L. Loeffler
Shelly J. Higgins
Oil and Gas Section
Department of Law

BB:TH:mkw
86-14



ALASKA STATE LEGISLATURE
HOUSE OF REPRESENTATIVES
RESEARCH AGENCY

Pouch Y. State Capitol
Juneau, Alaska 99811
(907) 465-3991

June 23, 1986

MEMORANDUM

TO: Representative Terry Martin

FROM: Brad Pierce *BP*
Legislative Analyst

RE: Changes to the Operating Budget FY 79 - FY 87
Research Request 86-214

You requested this agency to provide a brief history of changes to the State operating budget since 1979. Specifically you wished to know when loans and debt service were removed from the operating budget. You asked that we provide figures on the "true increase" in the operating budget (which you defined to include loans and debt service) since 1979.

To answer your request, we contacted Richard Fineberg of the Office of Management and Budget (OMB) who recently completed a review of State budget appropriations since 1979. He provided most of the information used in this memorandum. As I am sure you are aware, tracking State appropriations through the maze of reappropriation bills and changing State accounting conventions is a formidable task and it has taken Mr. Fineberg several years to reconcile the numbers. Attached is a table of his State appropriation totals for FY 79 - FY 87 (which include capital appropriations and extraordinary items in addition to the operating appropriations you requested). Also attached is an OMB memorandum explaining what is included in the table.

History of the State Operating Budget

The following table shows that operating appropriations (including debt service and loans) peaked in FY 86 at \$3.026 billion or an increase of 147.1 percent over FY 79. Estimated operating appropriations for FY 87 total \$2.935 billion, or 139.6 percent greater than FY 79 (nominal dollars). Operating budget appropriations (including debt service and all State loans) declined in two years of the FY 79 - FY 87 period: 3.8 percent in FY 84 and 3.1 percent in FY 87.

Much of the difficulty with categorizing State appropriations stems from the fact that there is no definition of the operating budget in the statutes. Alaska Statute 37.07.120, effective January 1, 1984 explicitly defined "capital projects" and "capital improvements" (Attachment B).

Representative Martin
June 23, 1986
Page 2

Operating Budget Appropriations FY 79-FY 87
(in millions)

	<u>1979</u>	<u>1980</u>	<u>1981</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>	<u>1986</u>	<u>1987*</u>
Operating Funds	1,149.0	1,309.0	1,757.8	2,183.0	2,437.7	2,437.4	2,685.7	2,776.9	2,702.0
Debt Service	61.7	77.1	100.0	104.2	145.6	180.6	175.1	168.9	165.2
Loans	<u>14.0</u>	<u>33.5</u>	<u>560.8</u>	<u>472.8</u>	<u>338.0</u>	<u>192.3</u>	<u>140.4</u>	<u>80.4</u>	<u>67.5</u>
Total	1,224.7	1,419.6	2,418.6	2,760.0	2,921.3	2,810.3	3,001.2	3,026.2	2,934.7
Percent Increase		15.9	70.4	41.1	5.8	(3.8)	6.8	0.8	(3.1)

* Estimated.

Source: Richard Fineberg, Senior Analyst--Office of Management and Budget, June 20, 1986.

Prepared by the House Research Agency, June 1986.

Representative Terry Martin
June 23, 1986
Page 3

Since then, the convention has been to list anything that is not a capital project or improvement as an operating budget item or as a separate category. As you pointed out in your request, this makes it very confusing to attempt to track changes in operating expenditures over time.

The debt service portion of the operating budget can be broken into two separate categories: general obligation bond debt and local school debt. Even though general obligation (G.O.) debt service is used to pay for capital projects, it has conventionally been considered part of the operating budget. During FY 79 - FY 81, it was included in the main section of the general appropriations bill by program category. During FY 82 and FY 83, G.O. debt was funded by a statutory continuing debt service appropriation (AS 37.15.012; Attachment C). From FY 84 to the present, it has been included in the front section of the appropriations bill as a separate category, first as an unstated amount in FY 84 and FY 85 then as a stated amount for FY 86 and FY 87.

Local school debt has also been inconsistently recorded and compiled over the years in question. From FY 79 to FY 83 it was included in the Department of Education operating budget. In FY 84, school debt was listed separately in the front section of the general appropriations bill. In FY 85, school debt was removed from the operating budget to avoid the State constitutional appropriations limit passed by voters in 1982 (Article IX Section 16; Attachment D). Thus for the three most recent fiscal years (FY 85 - FY 87), school and G.O. debt have been lumped together and treated as a separate category from operating appropriations in the general appropriations bill.

There is no clear pattern for State loan program funding between FY 79 and FY 87. During this period, most State loan programs were funded in the capital budget, with the notable exception of the student loan program which has usually been funded in the general appropriations bill. Occasionally, there have been special appropriations bills to fund individual loan programs. The extraordinary growth in the loans portion of the operating budget during FY 81 - FY 83 portrayed in the table above, reflects several appropriations for energy development as well as special appropriations to set up new loan programs (e.g. fisheries enhancement loans) during that period. In FY 86 and FY 87, substantial transfers (about \$114 million each year) were made from some loan programs as direct State involvement was scaled back. For example, the Department of Community and Regional Affairs--Housing Assistance Loan Fund (HALF) was transferred to Alaska Housing Finance Corporation (AHFC) which then issued bonds for the purchase and returned the cash from the bond sale to the General Fund. For FY 87, student loans were placed in the capital budget during the final hours of the 1986 legislative session because the operating budget had already been passed by the time the House and Senate Conference Committee decided on the appropriate level of funding.

Representative Martin
June 23, 1986
Page 4

We hope this information is sufficient for your purposes. If you would like greater detail on operating and/or capital appropriations, I would suggest that you call Richard Fineberg at 465-3568 as he is the expert on such matters. Please let us know if we can supply any further information.

BP

Attachments

ATTACHMENT A
STATE APPROPRIATION TOTALS

STATE APPROPRIATION TOTALS
(\$ millions)

	FY 79	FY 80	FY 81	FY 82	FY 83	FY 84	FY 85	FY 86	FY 87*
Operating Agencies (Auth.)/1									
Unrestricted General Funds	\$ 851.7	\$ 959.6	\$1,364.3	\$1,706.2	\$1,897.8	\$1,958.0	\$2,110.5	\$2,115.0	\$2,015.4
Other Funds	297.3	349.4	393.5	476.8	539.9	479.4	575.2	672.0	686.6
Total Operating Funds	1,149.0	1,309.0	1,757.8	2,183.0	2,437.7	2,437.4	2,685.7	2,787.9	2,702.0
Debt Service /2									
Unrestr. Gen. Fund (G.O. Bond)	59.8	75.2	97.4	102.4	143.6	178.6	169.5	163.3	155.0
Other Funds (Int. Airport R.F.)	1.9	1.9	2.6	1.8	2.0	2.0	5.6	5.6	10.2
Total Debt Service	61.7	77.1	100.0	104.2	145.6	180.6	175.1	168.9	165.2
Capital (Auth.)/3									
Unrestricted General Funds	171.0	92.0	565.2	1,164.9	470.1	778.4	1,241.9	471.4	325.0
Other Funds	338.4	81.7	414.6	72.4	239.7	398.5	192.1	431.7	406.2
Total Capital Funds	509.4	173.7	979.8	1,237.3	709.8	1,176.9	1,434.0	903.1	731.2
Loans Programs (Auth.)/4									
Unrestricted General Funds	14.0	33.5	560.1	471.8	337.0	171.9	140.0	80.4	61.0
Other Funds	0.0	0.0	0.7	1.0	1.0	20.4	0.4	0.0	6.5
Total Loan Funds	14.0	33.5	560.8	472.8	338.0	192.3	140.4	80.4	67.5
Total									
Unrestricted General Funds	1,096.5	1,160.3	2,587.0	3,445.3	2,848.5	3,086.9	3,661.9	2,830.1	2,556.4
Other Funds	637.4	433.0	811.4	552.0	782.6	900.3	773.3	1,109.3	1,109.5
Total Funds	\$1,733.9	\$1,593.3	\$3,398.4	\$3,997.3	\$3,631.1	\$3,987.2	\$4,435.2	\$3,939.4	\$3,665.9
Extraordinary Items/5									
Unrestricted General Funds	0.0	0.0	2,309.5	1,167.0	708.3	300.0	510.0	138.6	0.0
Other Funds	0.0	0.0	0.0	0.0	41.0	198.9	155.1	403.8	544.5
Total Extraordinary Items	0.0	0.0	2,309.5	1,167.0	749.3	498.9	665.1	542.4	544.5
GRAND TOTAL									
Unrestricted General Funds	1,096.5	1,160.3	4,896.5	4,612.3	3,556.8	3,386.9	4,171.9	2,968.7	2,556.4
Other Funds	637.4	433.0	811.4	552.0	823.6	1,099.2	928.9	1,513.1	1,654.0
GRAND TOTAL	\$1,733.9	\$1,593.3	\$5,707.9	\$5,164.3	\$4,380.4	\$4,486.1	\$5,100.8	\$4,481.8	\$4,210.4

/1 Agency "Adjusted Base" totals plus one-time, special and supplemental operating appropriations. This category includes Local School Debt Retirement (Education), Municipal Assistance (Revenue) and Revenue Sharing (DCRA). (FY 79 and FY 80 figures are estimated.)

/2 FY 79-84: Actual payments for G.O. debt retirement allocated to agencies. FY 85-87: Debt service authorizations.

/3 Session totals; OMB has adjusted some figures to reflect repeals and reappropriations and the definition of capital projects enacted in AS 37.07.120(4) (Ch. 34, SLA 83).

/4 See attached memorandum on loan programs.

/5 For a list of extraordinary items see attached memorandum. Where appropriations in this category differ from actual outlay, totals have been adjusted to reflect cash flows.

* Preliminary estimates.

\$3784

File

October 31, 1985
(Rev. June 18, 1986)
86B-90

465-3568

Richard Fineberg, Senior Analyst
Division of Strategic Planning
Office of Management and Budget

Extraordinary Budget
Items

In order to provide a consistent basis for comparative analysis of State budget growth, certain extraordinary items were isolated from operating, capital, debt service and loan appropriations. The extraordinary items category includes items such as:

- FY 81-86 Permanent Fund Dividend payment appropriations;
- FY 81-85 special appropriations from the General Fund to the Permanent Fund (in excess of Constitutionally dedicated resource revenues);
- Alaska Energy Center;
- State Income Tax Refunds (FY 81);
- Legal Settlements (e.g., the FY 81 payment pursuant to the Alaska Native Claims Settlement Act and the FY 83 Settlement of the Marathon Oil dispute);
- FY 81 transfer of General Fund assets to AHFC and AIDA (in excess of the cash appropriations listed in loan program totals);
- One-time entitlement appropriations to municipalities (FY 82-83);
- Establishment of the Rainy Day Fund (FY 81);
- Certain loan guarantee transfers to and from the Rainy Day Fund (see list);
- FY 85 General Fund loan to the Alaska Power Authority for the Four-Dam Pool; and
- Certain repeals of appropriations for income tax refunds, campaign and child care credits, capital projects and loan programs.

The extraordinary category does not include constitutionally dedicated deposits to the Permanent Fund.

The following appropriations comprise the "Extraordinary Items" in the October 31, 1985 tally: (Revised June 18, 1986):

	<u>Unrestricted General Funds</u>	<u>(\$ Millions) Other Funds</u>	<u>Total Funds</u>
<u>Fiscal Year 1979</u>			
<u>Fiscal Year 1980</u>			
<u>Fiscal Year 1981</u>			
Permanent Fund Special Deposit (35/80)	\$900.0		
Permanent Fund Dividend (120/80 FN[SB 122])*	128.5		
ANCSA Payment (120/80 p. 93)	292.6		
Income Tax Refunds (120/80 s25, FN[SB 394], 3/5580)	186.4		
Rainy Day Fund (171/80)	350.0		
Transfer of GF Assets to AIDA (120/80 s9)	166.0		
Transfer of GF Assets to AHFC (120/80 s3,4)	286.0		
CFAB Loan; (33/80 s3)	12.0		
" (lapsed to General Fund)	(12.0)		
	<u>\$2,309.5</u>		
* Excludes 0.8 of this appropriation used for Administration Operations.			
<u>Fiscal Year 1982</u>			
Permanent Fund Special Deposit (61/81 s1,2 am 101/82 s16)	\$800.0		
Permanent Fund Dividend (82/81, p. 106)	150.0		
Permanent Fund Dividend (92/81 s50)	12.5		
Municipal Entitlements (61/81 am 92/81, 141/82)	204.5		
	<u>\$1,167.0</u>		
<u>Fiscal Year 1983</u>			
Permanent Fund Special Deposit (GF Transfer per 61/81, 101/82)	\$400.0		
Permanent Fund Dividend (101/82 s18)	150.4		
" (6/83)		\$41.0	
Marathon Oil Settlement (34/83 s23)	36.2		
University Lands Settlement (21/83)	4.2		
Municipal Entitlements (61/81 am 92/81, 141/82)	101.2		
Fish. Prod. Revenue Loan Guarantee Fund (34/82 s4,5,8,9) (borrowed from and lapsed to Rainy Day Fund)		100.0 (100.0)	
AIDA Enterprise Fund (114/82 s9)	16.3		
	<u>\$708.3</u>	<u>\$41.0</u>	

June 19, 1986

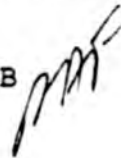
	<u>Unrestricted General Funds</u>	<u>(\$ Millions) Other Funds</u>	<u>Total Funds</u>
<u>Fiscal Year 1984</u>			
Permanent Fund Special Deposit (GF Transfer per 61/81, 101/82)	\$300.0		
Permanent Fund Dividend (107/83 s32)		\$179.0	
Permanent Fund Dividend (122/84 s15)		8.0	
Permanent Fund Dividend (44/84 s1,2)		11.9	
	<u>\$300.0</u>	<u>\$198.9</u>	
<u>Fiscal Year 1985</u>			
Permanent Fund Special Deposit (GF Transfer per 61/81, 101/82)	\$300.0		
Permanent Fund Dividend (122/84 s14)		\$155.1	
GF Loan to APA: 4-Dam Pool (171/84 s313)	210.0		
Forest Product Business Loan Guarantee (130/84) (borrowed from and lapsed to Rainy Day Fund)		25.0 (25.0)	
	<u>\$510.0</u>	<u>\$155.1</u>	
<u>Fiscal Year 1986</u>			
Permanent Fund Dividend (98/85 s14)		\$217.3	
Lapse to General Fund of Misc. Loan, Capital Project and other funds (See <u>1985 Appropriations Digest</u> pp. 6,19)		186.5	
TAPS Settlement to Rainy Day Account (105/85 s762)	138.6		
	<u>\$138.6</u>	<u>\$403.8</u>	
<u>Fiscal Year 1987</u>			
Permanent Fund Dividend (130/86 s13)		\$ 289.9	
Lapse to General Fund of Misc. Loan, Capital Project and other funds (See <u>1986 Appropriations Digest</u> pp. 6,19)		140.3	
Transfer to General Fund of Various Assets (See <u>1986 Appropriations Digest</u>)		114.3	
Transfer Permanent Fund Undistributed Income Account to Permanent Fund (42/86)		(1,129.6) 1,129.6	
Close Rainy Day Account; Create Budget Reserve Account (58/86; 129/86 s301, 538)		(436.0) 436.0	
		<u>\$ 544.5</u>	

MEMORANDUM

Division of Strategic Planning
Office of Management and Budget
465-3568 MS 0164

TO: Brad Pierce
House Research Agency

DATE: June 20, 1986

FROM: R.A. Fineberg, Policy Analyst, OMB 

SUBJECT: FY 79-87 Appropriation Totals

In response to your inquiry concerning historical budget data, enclosed is the update to the packet we provided Jay Livey of your agency Nov. 1, 1985.

Please note that the FY 87 data will change a bit as the 652 sections of this year's repeal and reappropriations bill are recorded officially in accounting records and the complications buried in the bill are resolved. We do not believe that any one of the categories or the net totals in the June 20 estimate will change by more than \$20.0 million; in fact, changes will probably be much smaller than that.

As for the prior-year data: As you know, we are working backwards. Since November 1985 the FY 81 data have been completed and reviewed; although we are still working on compiling FY 79 and FY 80 operating budget agency totals and expect revisions to the estimates in that category, work to date indicates that the estimates we have used from other sources are probably close enough to use for broad comparison purposes. For FY 81-87, the breakdown by agency will be available shortly, but I probably won't get back to the project to complete FY 79-80 data until completion of this year's Appropriations Digest.

ATTACHMENT B

ALASKA STATUTE 37.07.120

Effect of amendments. — The 1983 amendment rewrote the first sentence, added the present second sentence, and

revised a personal pronoun in the present third sentence.

NOTES TO DECISIONS

Budgetary system established by statutes implementing Constitution. — Statutory language implementing Alaska Const., art. IX, § 13, establishes a budgetary system in which all appropri-

tions are made by legislative act. *Municipality of Anchorage v. Frohne*, Sup. Ct. Op. No. 1477 (File Nos. 8050, 3104), 568 P.2d 3 (1977).

Sec. 37.07.110. Interpretation of chapter. This chapter shall be construed as supplemental to all other state laws not in conflict with it. If a section or part of a section of this chapter is in conflict with federal requirements for a program for which federal grant-in-aid funds are available, the section or part, to the extent of the conflict, is inoperative. (§ 1 ch 188 SLA 1970)

Sec. 37.07.120. Definitions. In this chapter

(1) "agency" means a department, officer, institution, board, commission, bureau, division, or other administrative unit forming the state government and includes the Alaska Pioneers' Home and the University of Alaska, but does not include the legislature or the judiciary;

(2) "allocation" means an amount set out as a legislative guideline for expenditure by a state agency for a stated purpose within the total amount of an appropriation;

(3) "appropriation" means a maximum amount available for expenditure by a state agency for a stated purpose set out in an appropriation act;

(4) [Effective January 1, 1984] "capital projects" and "capital improvements" mean an allocation or appropriation item for an asset with an anticipated life exceeding one year and a cost exceeding \$25,000 and include land acquisition, construction, structural improvement, engineering and design for the project, and equipment and repair costs.

(5) "fiscal year" means a year beginning on July 1 of one calendar year and ending on June 30 of the following calendar year;

(6) "object of expenditure" means a line item of expenditure within an allocation or an appropriation;

(7) "office" means the Alaska office of management and budget established in the Office of the Governor by AS 44.19.141 (§ 1 ch 188 SLA 1970; am § 4 ch 26 SLA 1976; am § 2 ch 97 SLA 1976; am § 7 ch 46 SLA 1977; am §§ 14, 26 ch 63 SLA 1983).

Revisor's notes. — Reorganized in 1983 to alphabetize the defined terms.

Effect of amendments. — The 1983 amendment repealed the definition of

"division" and added the "office," "capital projects," "improvements."

Sec. 37.07.130. Short Title. Budget Act. (§ 1 ch 188 SLA 1970)

Chapter

Article

1. Custodians of State Funds
2. Accounting (§§ 37.10.050-37.10.090)
3. Investment and Deposits
4. Recovery of Money or Property

Article

Section

10. Disbursements
20. Vouchers to be approved by administrative officer

Sec. 37.10.010. Disbursement. Disbursement shall (1) disburse department, establish employee of it authorize an examination of voucher proper form, certified a certified; and (3) be held 1949).

Cited in *Munson v. Territory*, 16 Alas. 580 (1956).

Collateral references. — state to incur indebtedness, distress due to unemployment, unusual conditions, 73 ALR 371.

Power of board or officials to

Sec. 37.10.020. Voucher. A voucher arising from the state shall be reference to the Department of Administration (1949).

ATTACHMENT C

ALASKA STATUTE 37.15.012

Sec. 37.15.010. Full faith and credit for general obligation bonds. The full faith, credit and resources of the state are hereby pledged to the payment of the principal of and interest and redemption premium, if any, on all general obligation bonds of the state authorized pursuant to art. IX, § 8 of the constitution. (§ 1 ch 175 SLA 1960; am. § 1 ch 104 SLA 1967)

Collateral references. — 63
Am.Jur 2d, Public Funds, § 23-32-64
Am.Jur 2d, Public Securities and Obligations, § 1 et seq.
SLA C.J.S., States, § 250-262
Funding or refunding obligations as

subject to conditions respecting approval by voters, 97 ALR 442

Validity of bond issue in excess of amount permitted by law without authorized debt, tax or voted limit, 125 ALR 52

Sec. 37.15.012. Continuing debt service appropriation. The amounts required annually to pay the principal, interest, and redemption premium on all issued and outstanding general obligation bonds of the state are appropriated on July 1 of each year from the general fund to the state bond committee to make all required payments of principal, interest, and redemption premium. (§ 101 SLA 1981)

Opinions of attorney general. This section does not represent an unconstitutional dedication of public funds under § 7, art. IX, of the state constitution.

That section of the constitution does not impair existing obligations November 10, 1982 Op. Atty. Gen.

Sec. 37.15.015. Committee shall publish notice of existing state indebtedness before election. (a) Before a general or special election in which a bond issue is offered for ratification, the state bond committee shall publish a notice of existing state bonded indebtedness at least once a week for three consecutive weeks in a newspaper of general circulation in each of the four judicial districts of the state. The first notice shall be published at least 20 days before the date of the election. A notice shall contain

- (1) the current total bonded indebtedness of the state;
- (2) the cost of the debt service on the current indebtedness.

(b) Neither the failure to publish the notice of existing state bonded indebtedness nor a defect in the publication affects the validity of the bond issue offered for ratification or of a general or special election in which a bond issue is offered for ratification. (§ 2 ch 50 SLA 1964; am. § 1 ch 8 SLA 1969)

Collateral references. Effect of inclusion in call for election or in proposal for bond issue submitted to people of unauthorized method of payment or repayment, 63 ALR 462

Bonds issued by state officer of bond payable solely out of proceeds of sale

of political subdivisions pledged or within constitutional or statutory provisions which impose a limit on state indebtedness or require consent of electors, 97 ALR 444

Mistake, ambiguity, or omission of statement as to indebtedness, 101 ALR 107

election or proposal for bond affecting validity of election issued pursuant thereto, 119
Effect of delay after sale of voters on power of government issue bonds, 135 ALR 768

Sec. 37.15.020. Main committee shall sell the series and at the time the state and its inhabitants

Sec. 37.15.030. Interest bonds shall bear interest not to exceed 11 percent of the rate of Average Yields for the whichever is higher. The from date of issue, until statute. (§ 1 ch 175 SLA 1970; am. § 1 ch 110 SLA 1982)

Effect of amendments. amendment substituted preceding "percent a year" the first sentence.

The 1982 amendment language beginning "11 per

Sec. 37.15.040. Sale bonds, the state bond in such manner as if the bonds offered for bidder. If the state bonds are not satisfactory to reject all bids received am. § 1 ch 43 SLA 1969

Sec. 37.15.050. Re mine whether the bond maturities and may redemption. No bond maturity date unless mentioned on the face SLA 1967; am. § 1 ch

Collateral references. States, § 261

ATTACHMENT D
ARTICLE IX, SECTION 16

f whether dedication prohibi-
s to interest or other income
y money appropriated to
funds and other funds and ac-
November 30, 1982, Op. Att'y

S

state tax or license," within the
of this section, whether or not
assessments fit the definition
assessments." State, N.S.E.
aquaculture Ass'n v. Alex, Sup.
o. 2488 (File Nos. 5065, 5086,
P.2d 203 (1982).

all be contracted unless
or unless authorized by
fied by a majority of the
question. The State may,
n, contract debt for the
surrection, defending the
redeeming indebtedness
comes effective. [Amend-

ans for veterans" in the first

S

S

Section 15. Alaska Permanent Fund.

Cross references.

For statutory provisions concerning per-
manent fund dividends, see AS 43.23.

Opinions of Attorney General. —
Since this section specifically authorizes
dedications to the Permanent Fund of "at
least" 25 percent of certain revenues, any
additional dedication to the fund by stat-
ute or by appropriation is also permissi-
ble. November 30, 1982, Op. Att'y Gen.

If the legislature enacts any other dis-
tribution program which is consistent
with the intent of the permanent fund
dividend law (AS 43.23), any appropria-
tion to implement that program will be
exempt from the appropriation limit of
§ 16, art. IX, of the state constitution.
1983 Op. Att'y Gen. No. 01

NOTES TO DECISIONS

Quoted in Williams v. Zobel, Sup. Ct.
Op. No. 2170 (File Nos. 5400, 5421), 619
P.2d 422 (1980); Alaska Oil Co. v. Alaska,
45 Bankr. 358 (D. Alaska 1985).

Stated in Zobel v. Williams, 50
U.S.L.W. 4613 (U.S. June 14, 1982), rev'g
Sup. Ct. Op. No. 2201 (File No. 5400), 619
P.2d 448 (1980).

Section 16. Appropriation Limit. Except for appropriations for
Alaska permanent fund dividends, appropriations of revenue bond
proceeds, appropriations required to pay the principal and interest on
general obligation bonds, and appropriations of money received from a
non-State source in trust for a specific purpose, including revenues of
a public enterprise or public corporation of the State that issues
revenue bonds, appropriations from the treasury made for a fiscal year
shall not exceed \$2,500,000,000 by more than the cumulative change,
derived from federal indices as prescribed by law, in population and
inflation since July 1, 1981. Within this limit, at least one-third shall
be reserved for capital projects and loan appropriations. The legisla-
ture may exceed this limit in bills for appropriations to the Alaska
permanent fund and in bills for appropriations for capital projects,
whether of bond proceeds or otherwise, if each bill is approved by the
governor, or passed by affirmative vote of three-fourths of the
membership of the legislature over a veto or item veto, or becomes law
without signature, and is also approved by the voters as prescribed by
law. Each bill for appropriations for capital projects in excess of the
limit shall be confined to capital projects of the same type, and the
voters shall, as provided by law, be informed of the cost of operations
and maintenance of the capital projects. No other appropriation in
excess of this limit may be made except to meet a state of disaster
declared by the governor as prescribed by law. The governor shall
cause any unexpended and unappropriated balance to be invested so
as to yield competitive market rates to the treasury. [Amendment
approved November 2, 1982]

DEPARTMENT OF LAW

OFFICE OF THE ATTORNEY GENERAL

January 29, 1986

Honorable Al Adams
Alaska State Legislature
Pouch V
State Capital
Juneau, Alaska 99811

Re: Prepayment of disputed taxes
Our file: 166-268-86

Dear Representative Adams:

You have requested our opinion on the constitutionality of requiring payment of disputed taxes from taxpayers pending proper appeal of the assessed amounts. You have also asked our opinion on when in the dispute resolution process such payment would be appropriate and whether the collected sums must be put in escrow pending the outcome of the dispute. You have noted that you are especially interested in these questions as they concern taxes owed to the state by the oil and gas corporations under AS 43.21, AS 43.20 and AS 43.55, since, you have stated, "back taxes under these three statutes currently total about \$900 million." Thus, you are interested in whether any proposed changes in the appeal process to require payment of disputed taxes may be applied to the cases currently pending.

We conclude that a requirement that disputed taxes be paid at some point prior to final resolution of the dispute in the courts is permissible under both the Alaska and United States constitutions. We also believe that a statute requiring that taxes be paid pending appeal could be drafted so as to apply to disputes pending at the administrative level at the time of enactment and further, that the state need not escrow payments of disputed taxes but could enact valid legislation authorizing such procedures.

Finally, although we have found nothing that would bar legislation creating a prepayment requirement, we think that there are some practical and policy concerns that would have to be addressed in connection with any specific proposal to change the procedures for the collection of disputed taxes. The Department of Revenue has a number of comments as to the practical implications of any proposed legislation in this area and will be providing you with a list of their concerns.

BILL SHEFFIELD, GOVERNOR

REPLY TO:

☒ 1031 W 4th AVENUE
SUITE 200
ANCHORAGE, ALASKA 99501
PHONE: (907) 276-3550

☐ 1st NATIONAL CENTER
100 CUSHMAN ST.
SUITE 400
FAIRBANKS, ALASKA 99701
PHONE: (907) 452-1568

☐ POUCH K - STATE CAPITOL
JUNEAU, ALASKA 99811
PHONE: (907) 465-3600

BACKGROUND: EXISTING PROCEDURES AND APPLICABLE STATUTES AND
REGULATIONS

The procedures for taxpayer appeals are currently governed by AS 43.05.240 and Alaska Appellate Rules 602(c) and 204. AS 43.05.240 controls the administrative appeal process and generally provides for a two step process. 1/ In most instances the

1/ AS 43.05.240 provides as follows:

Taxpayer remedies. (a) A person aggrieved by the action of the department in fixing the amount of a tax or in imposing a penalty may apply to the department within 60 days from the date of mailing the notice [of assessment] ... giving notice of the grievance and requesting an informal conference. At the conference the person aggrieved may present arguments and evidence relevant to the amount of tax or penalty due the state. If the department determines that a correction is warranted, the department shall make the correction.

(b) A person aggrieved by the action of the department in fixing the amount of a tax or in imposing a penalty may apply to the department and request a formal hearing

(1) in place of the informal conference provided for in (a) of this section ...or;

(2) within 30 days after decision resulting from an informal conference.

(c) At the formal hearing the department may subpoena witnesses and may administer oaths and make inquiries necessary to determine the amount of the tax or penalty due the state. The person aggrieved may present arguments and evidence relevant to the amount of the tax penalty due the state. If the department determines that a correction is warranted, the department shall make the correction.

(d) Within 30 days after the formal hearing and decision by the department, a person aggrieved by the decision of the department may appeal to the superior court in the judicial district in which the person resides. If after the appeal is heard it appears that the tax was correct, the court shall confirm the tax. If incorrect, the court shall determine the amount of the tax and if the person aggrieved is entitled to recover the tax or part of it,

(footnote continued)

taxpayer who wishes to protest an assessment begins by requesting an informal conference. 2/ The purpose of the informal conference is both to resolve the dispute, if possible, and to clarify those issues left to be resolved at the formal hearing. In fact, many disputes are resolved at this level.

A taxpayer who does not agree with the informal conference decision may then request a formal hearing. However, the taxpayer first pays any part of the assessment that relates to issues resolved at the informal conference level, thus, streamlining the matters to be addressed at the formal hearing.

The formal hearing is conducted by a hearing officer and is governed by trial-type procedures under which the taxpayer and audit staff may call witnesses to testify under oath, cross-examine witnesses, and introduce documentary evidence relevant to determining the amount of tax due. 3/ AS 43.05.240; 15 AAC 05.030.

If, after the formal hearing decision, any part of the assessment is still in dispute, appeal is to the superior court. AS 43.05.240(d) provides that a taxpayer may appeal to superior court within 30 days after the formal hearing decision is issued. This statute does not expressly require the taxpayer to pay the disputed taxes before appealing to a superior court. However, Section 240(d) can reasonably be interpreted to require prepayment prior to judicial review and this interpretation is reflected in the department's regulations. 15 AAC 05.040 requires full payment of

(footnote continued)

the court shall order the repayment and the department shall immediately pay the amount due....

2/ Although the informal conference can be waived, see AS 43.05.240 (b)(1), the department discourages this practice since it often leads to delays in the formal hearing process as numerous pre-conference hearings become necessary to clarify issues and generally accomplish those matters usually accomplished by the informal conference.

3/ According to representatives of the Department of Revenue, at formal hearing taxpayers win at least a partial abatement in approximately 50% of the appeals of assessments under all tax laws.

the amount determined to be due by the final administrative decision of the department pending appeal to the court.

When an appeal is filed in court, the Appellate Rules of the Alaska Courts come into play. Appellate Rules 602(c) and 204(d) grant the appealing taxpayer the right to stay the administrative decision by filing an approved supersedeas bond for the amount of a potential judgment. 4/ Any legislation aimed at removing the superior court's power to approve the filing of a supersedeas bond in lieu of payment of the disputed taxes would have to provide for amending these Appellate Rules. This can be done, but only by a two-thirds vote of the members of each house. Alaska Const. Art. IV, sec. 15.

You should also be aware that a number of other statutory provisions would be affected by a prepayment requirement. An example is AS 43.20.270 which provides that the department may collect taxes by distraint and sale from a taxpayer who has not appealed from the assessment.

I. CONSTITUTIONALITY OF REQUIRING PAYMENT OF DISPUTED TAXES
PRIOR TO FINAL DETERMINATION OF TAX LIABILITY

The obligation to pay taxes is purely a statutory creation. The methods by which the state may assess and collect a tax, as well as taxpayer remedies, are controlled by the express wording of the taxing statutes. The state legislature has discretion to set the conditions precedent to any refund, limited only by constitutional considerations of due process. See generally 71 Am. Jur. 2d, State and Local Taxation, secs. 596,608 (1973).

The due process clause of the Alaska Constitution is set out in Article I, Section 7 and provides: "No person shall be deprived of life, liberty, or property, without due process of law..." The core of this guarantee is the right to notice and a hearing when

4/ This may be why the Department of Revenue has not generally enforced its regulation requiring payment of disputed taxes pending appeal. We know of one case in which the Department asked the superior court to require full payment of taxes in lieu of a supersedeas bond but the court approved a bond in accordance with the Appellate Rules.

state action threatens the deprivation of some material right. Matanuska Maid, Inc. v. State, 620 P.2d 182 (1980). The language of the parallel federal due process guarantee, contained in the fifth and fourteenth amendments, is identical to that contained in the Alaska Constitution.

Under the applicable federal tax procedures, a taxpayer is given the choice of appealing through administrative procedures to Tax Court or going directly to federal district court. A taxpayer may appeal to Tax Court without paying disputed taxes and on to the Court of Appeals upon paying a bond. However, full payment of all disputed taxes is a prerequisite to going directly to federal district court, since jurisdiction over tax matters in the district courts exists only for actions "for the recovery of taxes alleged to have been erroneously or illegally assessed or collected," 28 U.S.C. sec. 1346. The requirement that a taxpayer pay the disputed taxes in full as a precondition of judicial review has been challenged on due process grounds and upheld by the federal courts. Johnston v. Comm'r of Int. Rev., 429 F.2d 804 (6th Cir. 1970) (due process not violated where taxpayer was barred from administrative appeal and had to pay full disputed tax amount to challenge tax in federal court); see, Flora v. United States, 357 U.S. 63 (1958).

Thus, while a taxpayer who disputes an assessment is guaranteed some right to a notice and hearing on the disputed amount, it is unlikely that the hearing must occur prior to any attempt at collection of the taxes assessed by the taxing authority. Both federal courts and courts in other states have held that due process is satisfied by the provision for a hearing after payment of taxes on the taxpayer's liability for taxes it alleges are wrongfully collected. See e.g., Phillips v. Comm'r of Int. Rev., 283 U.S. 589 (1931); Johnston v. Commissioner of Internal Revenue, 429 F.2d 804 (6th Cir. 1970); Cohen v. U.S., 297 F.2d 760 (9th Cir. 1962); State Tax Commission v. Yavapai County, 29 P. 2d 733 (Ariz. 1934); Anderson Bros. Corp. v. Stone, 85 So. 2d 767 (Miss. 1956); see generally 72 Am Jur 2d, State and Local Taxation, sec. 786 (1973).

The Alaska Courts have not addressed the issue of prepayment of taxes. While the Alaska courts certainly look to federal precedent, they are not limited to these rulings, since the provisions of the state constitution may have broader safeguards than the federal standards. Shagloak v. State, 597 P.2d 142 (Alaska 1979). However, based on the federal precedent and other caselaw cited above, we believe that the Alaska Supreme Court would uphold,

against due process challenge, a statutory requirement that taxes be paid at some point in the appeal process as a prerequisite to further review. 5/

You have asked, however, at what point in the process we believe prepayment would be "appropriate". As a matter of policy the choice of when to require full payment is of course up to the legislature. However, as a legal matter, we believe that the likelihood of any successful challenge to a prepayment requirement would decrease in direct proportion to the number of procedural safeguards available for use by the taxpayer prior to required payment. Thus, we believe that imposition of the requirement at the conclusion of the formal hearing is the least vulnerable point. However, we have found nothing to suggest that payment could not be required after the informal conference or possibly even earlier as long as there remains notice and an opportunity for a hearing to challenge the tax at some reasonable stage of the proceedings.

II. APPLICATION OF THE PREPAYMENT REQUIREMENT TO CURRENTLY PENDING CASES

It is our opinion that a change in the taxing procedures to require a prepayment of disputed tax liabilities could legally be applied to appeals that are currently pending at the administrative level. A taxpayer might attempt to challenge the application of any prepayment requirement to existing cases on the grounds that such an application would be unconstitutionally retroactive. However, we do not believe such a challenge would succeed.

5/ We think, however, that a small taxpayer appealing corporate income tax assessments under 43.20 might challenge a prepayment requirement on due process or other grounds. An argument that a specific taxpayer cannot afford to pay the full, assessed amount before appeal and would therefore be irreparably harmed by strict application of the prepayment requirement might be receptively received by a court. In such a case, the court could decide to stay the application of the prepayment statute or reduce the amount required to be paid on due process grounds or as an exercise of its general equitable powers. It would be unlikely, however, to hold the statute unconstitutional on its face.

A retroactive 6/ statute is "one which gives to pre-enactment conduct a different legal effect from that which it would have had without the passage of the statute," Norton v. Alcoholic Beverage Control Board, 695 P. 2d 1090, 1093 (Alaska 1985) citing Hochman, The Supreme Court and the Constitutionality of Retroactive Legislation, 73 Harv. L. Rev. 692 (1960). While this definition might lead to arguments over whether applying a statutory change to require prepayment of disputed taxes to pending cases is a retroactive application, the argument would be largely irrelevant. Procedural changes that do not effect substantive rights may be retroactively applied. Matanuska Maid, Inc. v. State, 620 P.2d 182, 187 (Alaska 1980). The theory behind the constitutional prohibition against retroactivity is that a statute should not operate to deprive a person of vested rights. However, for over a century, the rule has been that no party has a vested right in any statutory remedy. See The Collector (Brainard) v. Hubbard, 79 U.S. 1 (1871) cited in Bidwell V. Scheele, 355 P.2d 584, 586 (Alaska 1960).

Thus, in the Bidwell case, the Alaska Supreme Court held that the repeal of a statute requiring a person bringing a claim of title to lands against the holder of tax title to pay the equivalent of the sale price of the lands into the court should be applied to a pending action. The purchaser had no right in the previous procedure. Similarly, a taxpayer has no right to the present tax appeal procedures that permit a full appeal prior to any requirement to pay disputed liabilities.

The intent to apply a change in the tax appeal procedures to pending cases, however, would have to be stated expressly in the statute. AS 01.10.090 provides: "No statute is retrospective unless expressly declared therein." The statute need not use the specific word, "retrospective" but the legislature must clearly express its intent. See also, AS 01.10.100 (repeal or amendment of a law does not extinguish existing rights unless act expressly so states).

III. ESCROW OF DISPUTED TAX LIABILITIES

While your opinion request asks only whether payments received under a prepayment scheme must be escrowed, further conversations suggest you are also interested in the legislature's

6/ Legislation may be referred to as either retroactive or retrospective; for our purposes the terms are synonymous.

authority to set up some sort of procedure for holding the prepaid amounts for future refund pending resolution of tax disputes. Thus, we perceive your question to be whether or not the decision to escrow these sums may legally be left to the legislature.

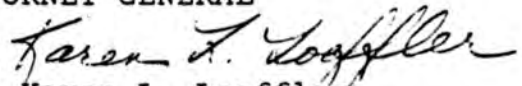
As to the first part of your question, we have found nothing that would require the state to escrow disputed tax liabilities. The federal government, for example, does not escrow the amounts it collects pending district court tax proceedings. ^{7/} Moreover, the contrary view, if applied to all tax disputes, might seriously impair a government's ability to function.

It is more difficult to respond to your inquiry concerning the validity of a mechanism for holding funds for possible repayment in the event the state does not prevail on its tax claims. There are many different methods that could be proposed for holding the disputed funds, and, while we believe that the legislature has broad discretion to choose among these methods, we think that there could be problems associated with some of them. See, e.g., 1982 Op. Att'y Gen. No. 13 (Nov. 30) (discussing dedicated funds prohibition as it applies to various types of funding mechanisms). In short, we think that a valid procedure for holding disputed funds for possible refund could be devised, however, we cannot give any more specific advice without more information.

We hope that this answers your immediate questions. We will be happy to assist you in any further questions you might have.

Sincerely yours,

HAROLD M. BROWN
ATTORNEY GENERAL

By: 
Karen L. Loeffler
Assistant Attorney General

KLL/ma

^{7/} As a practical matter, however, Alaska's situation does not resemble that of the federal government. While the latter operates from a deficit, we do not. Thus, the need to reserve disputed funds could differ.

STATE OF ALASKA

DEPARTMENT OF REVENUE

OFFICE OF THE COMMISSIONER

BILL SHEFFIELD, GOVERNOR

P.O. BOX 5
JUNEAU, ALASKA 99811-0400
PHONE: (907) 465-2300

August 13, 1986

Handwritten: H. J. E. J.

The Honorable John Sund
Alaska State Legislature
2336 Sixth Avenue
Ketchikan, AK 99901

Dear Representative Sund:

At the Joint Special Committee on Tax Policy meeting in Anchorage, you requested clarification of the statement in the Department of Revenue's June 1986 Revenue Forecast that "the magnitude of the recent decline in estimated corporate tax payments was totally unexpected. Unfortunately, the correct revenue picture will not be revealed until the Department conducts audits of the companies involved."

Vince Wright, chief of our petroleum research section, advises me that this statement is correct as written--although perhaps it was not as clearly written as one might wish. Corporate taxpayers are required to make quarterly pre-payments of taxes. See, 15 AAC 21.710. That is, in the year the tax liability is incurred, they pay the State of Alaska what they estimate their tax liability will be, on a quarterly basis. If a corporation estimates that its tax bill for the spring quarter of 1986 will be \$100,000, for example, it must forward to the Department of Revenue that amount at the end of the spring quarter. These are estimated quarterly pre-payments.

As you pointed out at the meeting, the companies do not actually file their tax returns until April of the following year at the earliest. In point of fact, most of the larger taxpayers obtain an automatic extension and do not file their tax returns until September of the following year.

Thus, the Department would receive the hypothetical taxpayer's estimated quarterly pre-payment of \$100,000 in April, 1986; but would not receive the final tax return until September, 1987. At that time, the taxpayer would either request a refund of any overpayments (if the estimated quarterly pre-payments were high), or would send in additional payment (if the estimated quarterly pre-payments were low).

The problem described in the June 1986 Revenue Forecast is an unanticipated decline in the estimated quarterly tax pre-payments for the spring quarter of 1986. The final tax returns covering these estimated quarterly pre-payments will not be received for another year. However, we rely on the estimated quarterly pre-payments for a portion of our current revenue flow.

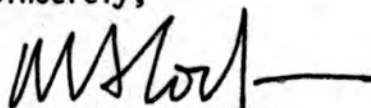
The Honorable John Sund
August 13, 1986
Page 2

It may be that the energy related businesses of many of Alaska's larger corporate taxpayers have suffered as a result of the decline in oil prices. Consequently, their estimates of their ultimate tax liability to the state may have been scaled down, and the quarterly payments reduced commensurately. Whether or not these taxpayers have accurately estimated their tax liabilities will not be known until the Department has audited their final returns.

I hope this answers your question. Enclosed for your information is a brief summary of the audit-assessment-appeal process for tax collection. Also, as requested, is a copy of Dr. Charles Logsdon's analysis of the Jones Act/oil export situation.

Please give me a call if you have any further questions or comments about this or any other matter pending before the Committee.

Sincerely,



Richard D. Monkman
Deputy Commissioner, Taxation

RDM:mkw
86-117

Enclosure

cc: Dr. Charles Logsdon
Vincent Wright
Members of the Committee (w/enclosure)

Assistant Attorney General Deborah Vogt (w/enclosure)
Royce Weller

Department of Revenue
Audit and Appeal Process
August 7, 1986

The Audit Division is responsible for reviewing tax returns and monitoring taxpayers through audits to insure that taxable income is properly calculated and reported. If the Division determines that an adjustment is required, it will inform the taxpayer that either more taxes are owed or a refund is warranted. If more taxes are due, an assessment notice will be issued.

As a practical matter, assessments are often made as the three year statute of limitations for assessments is about to expire. Assessments may be appealed. The taxpayer has the right to appeal an assessment to informal conference within 60 days of being notified of an assessment or waive informal conference and proceed to formal hearing.

There are two levels of administrative appeal within the Department, the informal conference and the formal hearing.

1. Informal Conference

The informal conference is the first level of review of a challenged assessment. A conference officer from the Appeals Section discusses the assessment with the taxpayer in-person, through telephone conference or through correspondence. Unlike the formal hearing in which the Appeals Section takes an adversary role on behalf of the Audit Division, the purpose of the informal conference is to provide an opportunity for discussion. As a result of this nonadversarial approach, the expertise of the Appeals Section, and its ability to settle cases, nerally 90% of all assessment disputes are resolved at the informal conference level of review.

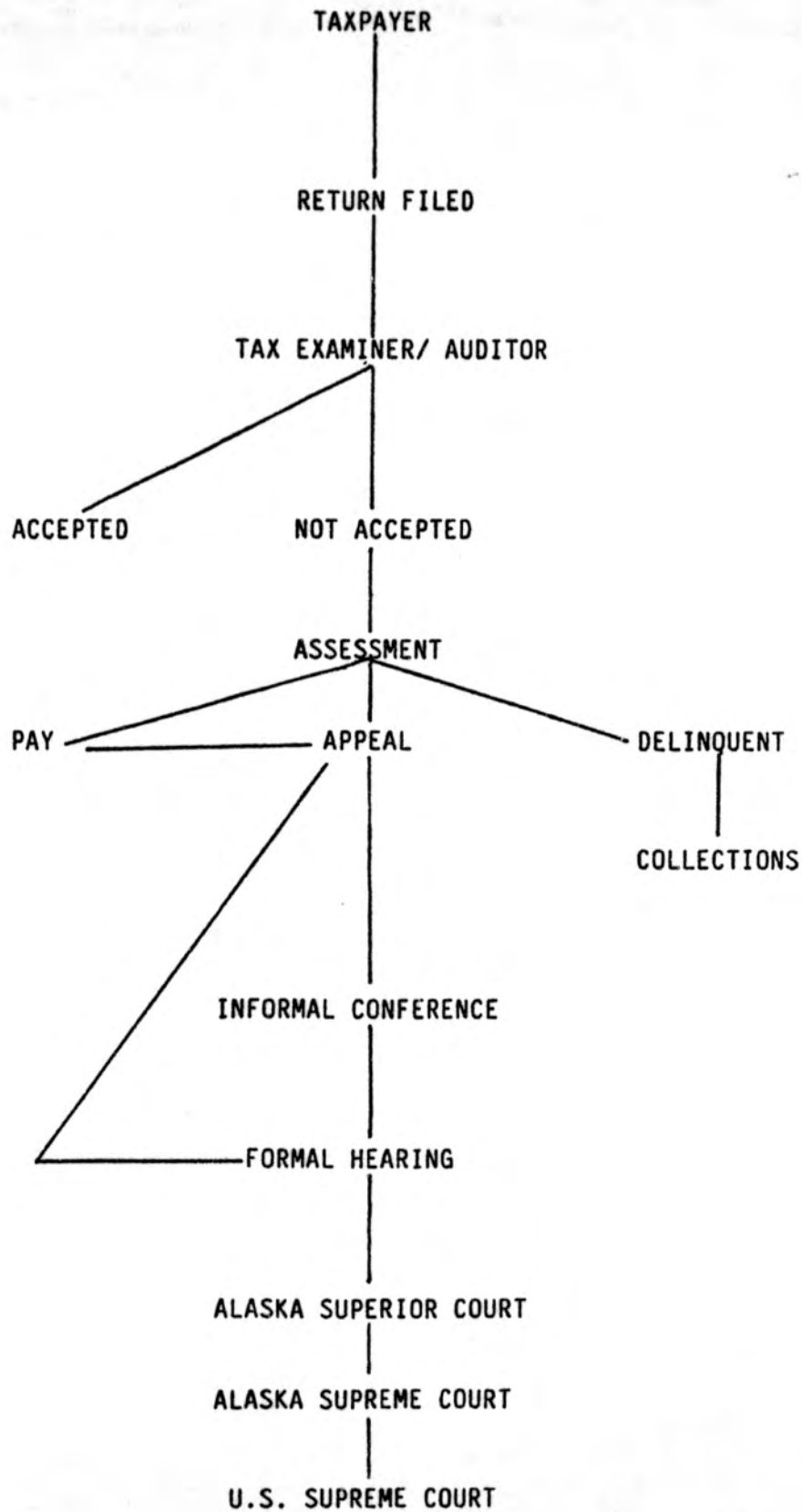
2. Formal Hearing

The formal hearing is the administrative trial level for tax disputes. A Department of Revenue hearing examiner is appointed by the Commissioner to serve as a hearing officer for the appeal. A formal hearing is often preceded by a prehearing conference, motions, briefing, and discovery requests. Full due process safeguards are provided with adequate notice and full opportunity to be heard by an impartial hearing officer. A formal hearing decision is issued after the record is closed and reviewed.

After a formal hearing decision the taxpayer may appeal to the Alaska Superior Court. In rare cases, the appeal process can proceed through Alaskan courts to the U.S. Supreme Court. Final resolution of the appeal occurs after exhaustion or waiver of judicial appeal rights. It is only then that the disputed taxes must be paid if the final determination is against the taxpayer.

DEPARTMENT OF REVENUE

APPEAL PROCESS



MEMORANDUM

State of Alaska

Department of Revenue

TO: Vincent Wright
Chief of Research

DATE: July 18, 1986

FILE NO:

TELEPHONE NO: 276-5364

SUBJECT: ANS Export

FROM: 
Charles Logsdon
Petroleum Economist

I have reviewed the March 1983 analysis that we made of the revenue potential of ANS Export to Japan. The analysis remains essentially correct as the relative transportation cost and relevant price assumptions have not materially changed. I have made a very rough best guess estimate of what ANS export would mean for oil production revenues if it were to go today. The key assumptions and estimates are as follows:

1. Alaska would sell 100,000 b/d of its royalty oil to Japan (Alaska currently has over 120,000 b/d available for export)
2. Major Alaska producers would sell an additional 200,000 b/d to Far East purchasers
3. The price received would not be substantially different than would have been received if the oil were sold at the U.S. Gulf
4. The transportation cost savings due to avoiding the Gulf haul would be \$2.50/bbl if shipped in Jones Act Tankers or \$3.40/bbl if shipped in foreign tankers
5. All cost savings would translate directly into higher wellhead prices. This means that wellhead values would be \$2.50/bbl higher if Jones Act Tankers are used and \$3.40/bbl higher if foreign tankers are used for oil shipped to Japan.

	<u>State of Alaska Gross Revenue Effect</u>	<u>Less State of Alaska Permanent Fund Effect</u>	<u>State of Alaska Net Revenue Effect to General Fund</u>
Jones Act Tankers	\$ 80 million/yr at current prod.	\$ 14.5 million/yr at current prod.	\$65.5 million/yr at current prod.
Foreign Tankers	\$110 million/yr at current prod.	\$ 19.75 million/yr at current prod.	\$90.25 million/yr at current prod.

CL:mkw

STATE OF ALASKA

DEPARTMENT OF REVENUE

OFFICE OF THE COMMISSIONER

BILL SHEFFIELD, GOVERNOR

P.O. BOX 5
JUNEAU, ALASKA 99811-0400
PHONE: (907) 465-2300

July 24, 1986

Re: Department of Revenue
Accounts Receivable

File Policy Committee
Hunt

The Honorable Terry Martin
Alaska State Legislature
3960 Reka Dr., B-6
Anchorage, AK 99508

Dear Representative Martin:

Enclosed per your request is a copy of the Department of Revenue's latest accounts receivable list. As you will note, the total assessed and unpaid is \$1.04 billion as of July 21, 1986. The bulk of this (\$1.01 billion) has been assessed by our auditors and is now on appeal. The outstanding amounts are primarily in the oil and gas taxes and in corporate income tax assessments (AS 43.21, AS 43.55, AS 43.20).

I have instructed our hearing officers to process all taxpayer appeals as expeditiously as possible. Due process of law requires that the hearing officers give all taxpayers a fair, unbiased, and complete opportunity to be heard on objections raised to these assessments. Given the large sums involved, some hearings are necessarily complex and lengthy. Nonetheless, the Department of Revenue is working hard to resolve these cases and collect the taxes owed to the people of the State of Alaska.

Sincerely,



Richard D. Monkman
Deputy Commissioner, Taxation

RDM:mkw
86-118

Enclosure

cc: Members of the Committee
Theresa Hillhouse, Chief Hearing Officer

ALASKA DEPARTMENT OF REVENUE
TAX ACCOUNTS RECEIVABLE SUMMARY
July 21, 1986

TAX TYPE	STATUTE	VALUE OF ACCOUNTS	NOTICES OF ASSESSMENT	APPEALED	DELINQUENT AND ASSIGNED	CURRENTLY NOT COLLECTABLE
OIL & GAS CORP INC	AS 43.21	\$ 786,954,201.33	\$.00	\$ 786,954,201.33	\$.00	\$.00
OIL & GAS PRODUCTION	AS 43.55	163,313,107.90	2,390,349.13	160,921,864.21	894.56	.00
CORPORATION	AS 43.20	56,079,918.77	1,285,177.53	53,560,820.38	1,093,383.91	140,536.95
INDIVIDUAL INCOME	AS 43.20	12,937,939.83	972,441.42	3,793,773.08	7,705,312.74	466,412.59
FISHERIES	AS 43.75	10,525,556.47	327,826.72	2,406,472.69	6,467,260.51	1,323,996.55
MOTOR FUEL	AS 43.40	3,156,188.63	41,340.60	462,445.05	2,651,510.02	892.96
BUSINESS LIC GR RCPT	AS 43.70	2,779,306.42	.00	2,313,682.53	320,952.66	144,671.23
MINING	AS 43.65	1,990,328.47	7,653.26	1,978,935.78	3,739.43	.00
WITHHOLDING	AS 43.20	1,730,964.17	.00	955.84	1,533,025.91	196,982.42
OIL & GAS PROPERTY	AS 43.56	647,211.56	.00	.00	452,135.57	195,075.99
SEAFOOD MARKETING	AS 16.51	266,532.75	41,797.17	71,761.95	147,797.90	5,175.73
ALCOHOLIC BEVERAGE	AS 43.60	57,095.45	3,482.08	.00	53,613.37	.00
ESTATE	AS 43.31	38,333.30	353.00	32,360.69	5,619.61	.00
AVERAGE WHOLESALE	AS 43.80	2,950.00	.00	1,300.00	1,650.00	.00
CIGARETTE	AS 43.50	2,731.61	.00	.00	2,731.61	.00
COIN OPERATED DEVICE	AS 43.35	2,107.17	.00	.00	1,968.16	139.01
TOTAL TAX RECEIVABLE (A)		\$1,040,484,473.83	\$ 5,070,420.91	\$1,012,498,573.53	\$20,441,595.96	\$2,473,883.43
PERCENT OF TOTAL VALUE		100.00%	0.49%	97.31%	1.96%	0.24%
PERCENT OF WORKABLE VALUE					89.20%	10.80%

TAX TYPE	STATUTE	NUMBER OF ACCOUNTS	NOTICES OF ASSESSMENT	APPEALED	DELINQUENT AND ASSIGNED	CURRENTLY NOT COLLECTABLE
INDIVIDUAL	AS 43.20	1,343	58	260	859	166
CORPORATION	AS 43.20	675	95	396	147	37
GAS PRODUCTION	AS 43.55	585	93	491	1	0
WITHHOLDING	AS 43.20	418	0	2	288	128
MOTOR FUEL - HWY	AS 43.40	272	15	109	143	5
FISH, FREEZER SHIP	AS 43.75	241	8	37	140	56
BUSINESS LIC GR RCPT	AS 43.70	122	0	35	50	37
SEAFOOD MARKETING	AS 16.51	59	3	10	44	2
OIL & GAS CORP INC	AS 43.21	32	0	32	0	0
OIL & GAS PROPERTY	AS 43.56	18	0	0	17	1
MINING	AS 43.65	17	2	13	2	0
ALCOHOLIC BEVERAGE	AS 43.60	9	3	0	6	0
COIN OPERATED DEVICE	AS 43.35	6	0	0	4	2
ESTATE	AS 43.31	5	1	1	3	0
AVERAGE WHOLESALE	AS 43.80	3	0	2	1	0
CIGARETTE, GENERAL	AS 43.50	1	0	0	1	0
TOTAL TAX ACCOUNTS (B)		3,806	278	1,388	1,706	434
PERCENT OF TOTAL ACCOUNTS		100.00%	7.30%	36.47%	44.82%	11.40%
PERCENT OF WORKABLE ACCOUNTS					79.72%	20.28%

ALASKA DEPARTMENT OF REVENUE
TAX ACCOUNTS RECEIVABLE SUMMARY
July 21, 1986

NOTE: _____

- A. The value of receivables reported, especially those in appeal status, are still subject to some review and correction.

At the end of October, 1985, the Enforcement Division completed the consolidation of all receivables on to a new computer based accounts receivable system, giving the Department the ability to generate summary statistics of tax receivables. Upon review of these statistics, certain anomalies have been identified, some of which have resulted in correction of reported receivables. In a few instances keypunch errors have been identified. In a few other cases unposted payments have been identified, most notably involving those assessments under appeal.

The Enforcement and Audit Divisions are currently working to reconcile what the accounts receivable system shows in appeal status with what Audit's conference staff shows in appeal status. As that reconciliation is conducted the number of accounts and the aggregate value of those accounts may change.

- B. The number of accounts identifies the number of actual billings, not the number of taxpayers. A single taxpayer may have billings for several different tax periods and/or for several different tax types. Accordingly, the actual number of taxpayer appeal cases will be less than the number of accounts identified on this summary.

Attacking the Revenue Decline

To Tax or Not To Tax?

Alaska Department of Revenue forecasts show that total General Fund revenue for fiscal '86 is expected to be down \$400 million from fiscal 1985, and fiscal 1987 revenue is expected to be down another \$460 million.

This projected, sharp revenue decline should be addressed in this session of the Alaska Legislature, whose options include spending cuts, reinstatement of the state income tax, the levying of a state sales tax, elimination of Permanent Fund dividends and higher taxes on oil production. A state lottery has also been suggested, but in an auxiliary role because of its slight revenue raising potential.

Higher Oil-Production Taxes

The idea of raising oil production taxes should be dumped immediately. Alaska desperately needs to generate an economic base in addition to the oil industry. By turning to higher oil-production taxes, we would send a message to other extractive industries that might be considering development in Alaska.

Investments are based on calculations of expected after-tax income. Higher oil-production taxes today will strongly influence such calculations, to the detriment of the economy.

The Income Tax and Permanent Fund Dividends

At a time when falling oil prices and production threaten a prolonged recession in Alaska, a factor in favor of the income tax is its ability to transfer to Alaska more than \$5 million per year in federal money.

State income taxes are likely to continue to be deductible from federal taxable income. For every \$1 raised by the state income tax, federal income tax collections from Alaskans fall by about 15 cents.

If interest rates paid by Alaskans are



By DAVID REAUME

largely determined by national conditions, this deductibility of state income taxes virtually assures that a state tax, with subsequent government spending of the proceeds, will help to shore up the state's economy.

State government can also extract revenue from the federal government by levying a sales tax or by repealing the Permanent Fund dividend. The sales tax option is favorably considered, but repeal of the Permanent Fund dividend clearly ranks below reintroduction of the income tax for one good reason: while dividend repeal would raise substantial revenue (more than \$200 million in fiscal 1986) and would reduce Alaskans' federal income tax payments by about \$10 million, it would do so in a regressive manner.

Indeed, from the point of view of simple fairness, there is no reasonable comparison between the income tax and dividend repeal.

For a family of four with federal taxable income of \$10,000 in 1986, dividend repeal would amount to levying a tax of about 16 percent of taxable income. The same low-income family would lose only 3.4 percent of its taxable income under the old Alaska state income tax.

The break-even point comes at about \$31,000 in taxable income for a family of four (equal to about \$44,000 in federal adjusted gross income).

Families with incomes below that level lose more under dividend repeal than under the state income tax. Families (of four) above that income level fare better under dividend repeal.

For very-high income families the Permanent Fund dividend is more of an annoyance than a benefit.

A State Sales Tax

During the past 15 years consumption-type sales taxes have gained both academic respectability and public favor because of their relative simplicity of administration and their tendency to stimulate savings, but most of all because the perceived burden is less.

Surveys conducted by the Advisory Commission on Intergovernmental Relations consistently show that the public strongly prefers sales taxation to income taxation.

In addition, a state sales tax can be expected to have a net stimulative impact on the economy — both because it is deductible at the federal level and because about 7 percent to 10 percent of its yield would be raised by taxing visitors.

Commonly exempted in an attempt to reduce the comparative burden on low-income households are purchases of (1) food for home consumption, (2) drugs and medicines, (3) heating oil and coal and (4) household purchases of natural gas and electricity.

A good question is, "How high would a sales tax rate need to be if the tax base were consumption less certain exemptions?"

Using Alaska personal income figures and national patterns of consumer expenditure out of income, I have derived some preliminary estimates.

If no exemptions were allowed, a state sales tax rate of between 5 percent and 5.5 percent would have raised the same revenue in 1983 and 1984 as the old income tax.

If only food purchased for home consumption were exempt the sales tax rate needed to achieve parity with the old income tax would be between 5.5 and 6 percent.

If food for home consumption, heating oil and coal, drugs and medicines, and natural gas and electricity were exempt, a sales tax rate of between 6 and 6.5 percent would be required to match the yield of the old income tax.

In all of these calculations, I have assumed that 10 percent of potential revenue is lost to evasion and avoidance.

In addition to exempting certain goods for the benefit of low-income households, higher rates can be levied on goods and services known to be more heavily consumed by high-income households. For example, a higher tax rate can be applied to automobiles costing over a certain amount.

With all of the tax-design options available, a well-designed consumption-

tion-type sales tax, coupled with some expenditure reduction, may be the best option we have.

An Alaska State Lottery

A state lottery is not simply a fund raiser but also a consumption item. When a Seattle resident buys a ticket in the Washington lottery, the purchase price consists of a fee for the gaming coupon plus a gambling excise tax.

Because the lottery excise tax falls heavily on low-income players, it is not a foregone conclusion that lotteries are better than general sales taxes or income taxes, *even when yield differences are ignored.*

Even so, it is safe to say that the chief reason lotteries are not more widespread is their rather paltry per capita revenue yield.

In New Jersey and Maryland, two turnpike states that reap considerable revenue from out-of-state motorists, only \$40.87 and \$54.20 per resident was raised through lotteries in fiscal year 1983. (Figures were taken from Census Bureau tabulations.)

In Massachusetts, New York and Washington, per-resident yields were even less, totaling \$18.55, \$16.64 and \$21.33, respectively.

Were Alaska to institute a state-run lottery that yielded Maryland's high of \$54.20 per resident, the total annual yield would be only \$28.5 million, or less than 1 percent of currently projected fiscal year 1985 revenue.

In order to match the yield of the old state income tax, for example, lottery sales would have to total about \$1,450 per resident per year. On average, a lottery's net yield is equal to about 45 percent of total sales, with the remainder given over to prizes (42 percent) and overhead (13 percent).

Because of its slight revenue-raising potential, an Alaska state lottery has to be viewed as only one part of a larger package of spending cuts and revenue increases.

If, for example, a consumption-type sales tax were levied, with exemptions for food and medicine, the statutory rate of the tax could be held down partly by proceeds from a state lottery.

Realistically, an Alaska lottery can be expected to yield something in the range of \$20 to \$30 per resident, given the state's relatively high ratio of visitors-to-residents.

At \$25 per resident, lottery revenue would total about \$13 million and would allow a general sales tax to be levied at a rate of about 1/4 of 1 percentage point lower than otherwise would be the case.

Thus, a combination of solutions, ranging from a state lottery to state sales tax seem to be Alaska's best bet for generating the income it will need in the future. □

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STATE OF ALASKA

DEPARTMENT OF REVENUE

OFFICE OF THE COMMISSIONER

BILL SHEFFIELD, GOVERNOR

P.O. BOX 5
JUNEAU, ALASKA 99811-0400
PHONE: (907) 465-2300

September 4, 1986

The Honorable Terry Martin
Alaska State Legislature
3960 Reka Drive B6
Anchorage, AK 99508

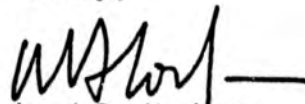
Dear Representative Martin:

In response to your inquiry at the July, 1986 Joint Special Committee on Tax Policy meeting, enclosed are some materials concerning "leakage" of Permanent Fund Dividends to the federal treasury by operation of the federal income tax.

Also enclosed is a study of tax "leakage" to the federal treasury after the repeal of the Alaska income tax in 1979. Of particular interest may be the authors' conclusion that nonresidents accounted for 21% of Alaska income tax returns in 1979 (39,120 out of 187,124 total returns), and that nonresidents paid 11% of the total tax received (\$10,069,565 out of \$92,601,302 total).

Please let me know if you have any further questions or comments.

Sincerely,



Richard D. Monkman
Deputy Commissioner, Taxation

RDM:mkw
86-131

cc: Committee Members

Enclosure

MEMORANDUM

State of Alaska

TO: Vincent D. Wright
Chief of Research
Department of Revenue

DATE: April 3, 1986

FILE NO:

TELEPHONE NO: 465-2300

FROM: Al Zangri
Economist
Research Section
Department of Revenue

SUBJECT: PFD Leakage to Federal
Income Tax

Attached are estimates of the amount of federal income tax leakage resulting from the 1985 permanent fund dividend payment. The estimates were based on a Permanent Fund Dividend amount of \$404 and a total of \$210,617,200 available for distribution. Taxable income for 1985 was estimated by adjusting 1982 data for changes in the average wage and consumer price index between 1982 and 1984. The increase in the number of taxpayers was estimated by using the increase in the number of adult PFD applicants from 1982 to 1985.

Based upon the input assumptions, Table 1 shows that the estimate of total leakage is \$17,957,037.65. This represents approximately 8.5% of the total PFD distribution. Table 2 provides estimates, for various taxable income categories, of the average leakage per income tax return (\$93.30) as well as the average leakage per taxpayer (\$65.47).

AZ:nkw

Attachment

TABLE 1

	NUMBER OF RETURNS	TAXABLE INCOME	INCOME TAX PAYABLE	TAX LEAKAGE
		TOTAL	TOTAL	TOTAL
AGI RANGE				
NO AGI	5406	0.00	0.00	0.00
\$1 TO \$10000	39264	128021179.52	7685762.78	1191645.90
\$10001 TO \$20000	33787	410779344.94	47716496.38	2404717.96
\$20001 TO \$30000	30957	645966358.06	97382247.18	2938037.84
\$30001 TO \$40000	25590	742626786.11	130975949.19	2933693.83
\$40001 TO \$50000	20191	746907727.27	148972418.40	2647211.35
\$50001 TO \$100000	34349	1830273647.64	450867571.63	5295600.03
OVER \$100000	2922	404038892.23	152044211.90	546130.71
TOTAL	192466	4908613935.77	1035644657.45	17957037.63

TABLE 2

		NUMBER OF RETURNS	TAXABLE INCOME	INCOME TAX PAYABLE	TAX LEAKAGE	TAX LEAKAGE
			AVERAGE PER RETURN	AVERAGE PER RETURN	AVERAGE PER RETURN	AVERAGE PER TAXPAYER
AGI RANGE	PFD RECIEVED					
NO AGI	\$404	4107	0.00	0.00	0.00	0.00
	\$808	1299	0.00	0.00	0.00	
\$1 TO \$10000	\$404	34309	3416.89	213.52	32.58	26.95
	\$808	4955	2177.80	58.83	14.88	
\$10001 TO \$20000	\$404	26772	12688.20	1549.45	75.36	58.93
	\$808	7015	10134.11	888.38	55.18	
\$20001 TO \$30000	\$404	21397	21497.06	3455.20	101.67	72.51
	\$808	9560	19455.42	2453.06	79.77	
\$30001 TO \$40000	\$404	14022	29750.56	5683.43	123.92	79.04
	\$808	11568	28134.89	4433.16	103.40	
\$40001 TO \$50000	\$404	8336	37955.63	8252.25	140.84	82.60
	\$808	11855	36314.60	6763.53	124.27	
\$50001 TO \$100000	\$404	10033	53400.38	13933.86	160.99	90.27
	\$808	24316	53236.86	12792.78	151.36	
OVER \$100000	\$404	744	139685.10	53978.43	188.34	107.08
	\$808	2178	137793.01	51370.18	186.41	
TOTAL		192466	25503.80	5380.92	93.30	69.47

MEMORANDUM

State of Alaska

TO: Vincent Wright
Chief of Research
Department of Revenue

DATE: October 25, 1984

FILE NO:

TELEPHONE NO: 465-2175

FROM: Al Zangri
Economist
Research Section
Department of Revenue

SUBJECT: Actual leakage from
1982 PFD distribution

This memo considers only adult PFD distributions, as the dividends issued to children 17 and under are generally not taxable. Of the 233,201 permanent fund dividends distributed to adult residents in 1982, 182,615 were distributed to individuals who filed federal income tax returns in 1982. These 182,615 individuals filed 120,966 tax returns. Strictly speaking, only 124,485 should have been filed since 2,481 people who claimed the 82 PFD on their 82 taxes did not actually receive the dividend until 1983. However, the net effect of this action is to reduce the overall leakage from the 82 and 83 dividend distributions.

Table 1, attached, shows the total taxable income, total income tax paid, and total leakage to the IRS from those 120,966 returns. Table 2 shows the average (per return) taxable income, tax paid and leakage. It also shows the average leakage per taxpayer.

The total leakage was 53,233,939. This compares with our earlier estimate of 60,700,599. Note that the average leakage per taxpayer is very close to the estimate first made last year. The primary error in the total estimate results from over estimating the number of returns that would be filed. The methodology used to estimate the number of returns is not identified in the earlier report so I cannot identify the source of error. The methodology used to estimate the leakage given the number of returns filed was excellent as is evident from comparing the average leakages.

Table 3 shows the total distribution of total taxable income and total income tax payable that would have existed without the PFD distribution. I have included it to illustrate the changes that the PFD introduced into the AGI ranges. It is possible to show exactly how many people were moved into a higher marginal bracket as a result of the dividend distribution. If that would be of interest, I can include it in the report when I look at the 83 leakage.

Given the results of this effort, I suspect that the ICER study over estimated the tax leakage by a fairly large margin.

TABLE 1

AGI RANGE	NUMBER OF RETURNS	TAXABLE INCOME	INCOME TAX PAYABLE	TAX LEAKAGE
		TOTAL	TOTAL	TOTAL
NO AGI	1193	0.00	0.00	0.00
\$1 TO \$10000	23322	85173846.64	5822023.67	1993692.91
\$10001 TO \$20000	22303	275321320.52	37345549.46	5292844.02
\$20001 TO \$30000	21105	447053292.34	79733487.39	7355783.99
\$30001 TO \$40000	17762	522483200.69	108345033.66	8446641.45
\$40001 TO \$50000	14605	547086581.13	127996512.29	9017960.70
\$50001 TO \$100000	24874	1337532934.59	384796908.04	19502811.25
OVER \$100000	1802	248815076.65	102329800.06	1624205.17
TOTAL	126966	3463466252.56	846369314.56	53233939.49

TABLE 2

AGI RANGE	PFD RECIEVED	NUMBER OF RETURNS	TAXABLE INCOME	INCOME TAX PAYABLE	TAX LEAKAGE	TAX LEAKAGE
			AVERAGE PER RETURN	AVERAGE PER RETURN	AVERAGE PER RETURN	AVERAGE PER TAXPAYER
NO AGI	\$1000	638	0.00	0.00	0.00	0.00
	\$2000	555	0.00	0.00	0.00	
\$1 TO \$10000	\$1000	20211	3801.84	275.00	88.35	75.42
	\$2000	3111	2679.13	84.85	66.87	
\$10001 TO \$20000	\$1000	17102	12933.19	1863.79	216.75	192.44
	\$2000	5201	10409.13	1051.92	304.93	
\$20001 TO \$30000	\$1000	14106	21818.43	4185.91	297.73	261.73
	\$2000	6999	19900.34	2955.71	450.93	
\$30001 TO \$40000	\$1000	8826	30114.76	6878.26	361.53	316.38
	\$2000	8936	28725.41	5330.96	588.16	
\$40001 TO \$50000	\$1000	4898	38417.68	10023.61	415.24	370.93
	\$2000	9707	36975.05	8128.24	719.49	
\$50001 TO \$100000	\$1000	5206	53682.89	16569.47	462.05	437.85
	\$2000	19668	53796.00	15178.78	869.30	
OVER \$100000	\$1000	330	141322.48	59535.06	495.30	496.09
	\$2000	1472	137349.63	56170.67	992.36	
TOTAL		126966	27278.69	6666.11	419.28	291.51

TABLE 3

	NUMBER OF RETURNS	PRE PFD TAXABLE INCOME	PRE PFD INCOME TAX PAYABLE	TAX LEAKAGE
		TOTAL	TOTAL	TOTAL
AGI RANGE				
NO AGI	2053	0.00	0.00	0.00
\$1 TO \$10000	25192	81443181.80	5450470.46	2527880.66
\$10001 TO \$20000	22381	274288775.01	37000746.05	5673173.97
\$20001 TO \$30000	21041	440996658.44	77879457.90	7680099.63
\$30001 TO \$40000	17597	512263470.64	105044964.51	8768397.67
\$40001 TO \$50000	14159	526106529.48	122195099.49	9016138.73
\$50001 TO \$100000	22858	1216342192.09	348117360.72	18053242.55
OVER \$100000	1685	236141978.35	97447275.94	1515006.27
TOTAL	126966	3287582785.81	793135375.07	53233939.49

Federal Tax Leakages Associated With 1979 State Income Tax Refunds

By
Lance R. Rovig, Economist
and
Deborah A. Lasher, Research Analyst

The following report is the result of research efforts to ascertain the tax leakages to the Federal government as a result of the repeal of the individual income tax enacted by the 1980 Special Legislative Session.

Federal Tax Leakages Associated With 1979 State Income Tax Refunds

Resident and nonresident Alaskan taxpayers who itemized their Federal deductions in tax year 1979 will have to pay Federal taxes in tax year 1980 on their 1979 State income tax refunds. The refunds must be included on the 1980 Federal Form 1040 as taxable income to the extent that the State tax deduction decreased Federal taxes owed in 1979. Persons who did not claim the State tax as an itemized deduction in tax year 1979 do not have to include the refunds as Federal taxable income for tax year 1980. For reasons explained below, it was assumed throughout this analysis that the same number of returns which itemized at the State level also itemized at the Federal level.

State income taxes recorded to date for tax year 1979 by residents and nonresidents are presented in a series of tables. These tables are based on data captured as of December 1, 1980 and although incomplete do represent the bulk of taxes paid. The basic conclusions of this report, therefore, should not be substantially affected once all the data is captured. Tables I through VI show resident taxes paid by filing status. These are resident returns which itemized their Alaska deductions and which will probably have to pay Federal taxes on their 1979 State income tax refunds. Table B gives a breakdown of resident taxes paid by Federal adjusted gross income categories for returns which itemized and for returns which took the standard deduction. Tables C and D show nonresident taxes paid by Federal adjusted gross income categories for returns which itemized and for returns which took the standard deduction. Nonresident returns were further disaggregated into instate and out of State returns.

Resident and Nonresident Returns:

As shown in Table A, of the \$92,601,302 in taxes paid and refunded on returns for tax year 1979, residents paid \$82,531,737, or 89%, and nonresidents paid \$10,069,565, or 11%. Of the 187,124 total returns, 148,004, or 79%, were resident and 39,120, or 21%, were nonresident returns. This amounts to an average tax paid of \$494.87 for residents and nonresidents combined, or an average tax of \$557.63 for residents and \$257.40 for nonresidents.

As shown on Tables C and D approximately 21,281 nonresident returns, or 54%, itemized their deductions and 17,839, or 46%, took the standard deduction. Table B shows that 92,006, or 62%, of the resident returns took the standard deduction and did not itemize in tax year 1979. And, 55,998, or 38%, of the resident returns itemized their Alaska deductions and probably claimed the State tax as a deduction against their 1979 Federal taxable income.

Itemized Resident Returns:

Although only 38% of the resident returns itemized their deductions they paid 67% of the resident taxes. Resident returns that itemized paid \$55,240,070 of the \$82,531,737 of taxes paid by residents in tax year 1979. This is an average tax paid of \$986 per itemized resident return.

The tax leakage to the Federal government as a result of refunding 1979 taxes paid by Alaskan residents who itemized is estimated to be \$24,186,038. Thus, the average tax leakage is \$432 per itemized resident return. This leakage is 29% of the \$82,531,737 refunded to residents and is 44% of the \$55,240,070 refunded to those residents who itemized deductions on their 1979 tax returns.

Itemized Nonresident Returns:

As explained below, the Federal tax leakage for nonresident returns was determined by using resident returns. Non-resident returns are restricted with regard to the itemized deductions that they can claim on their Alaska tax returns, and these restrictions make it difficult to estimate Federal taxable income from data on the nonresident State returns. Of the \$10,069,565 in nonresident taxes paid in 1979, \$6,355,677, or 63% came from returns which itemized. This is an average tax paid of \$299 per itemized nonresident return. Assuming that 44% of these refunds are paid in Federal taxes, as is the case for resident returns which itemized, then approximately \$2,796,497 would be the tax leakage associated with nonresident returns which itemized. This represents an average tax leakage of \$131 per itemized nonresident return.

Methodology:

Because the State does not collect data on Federal taxable income and since Federal and State taxable income differ somewhat, State taxable income was adjusted to estimate Federal taxable income. For example, State taxable income includes Federal cost of living allowances whereas Federal taxable income does not. Items exempt from State taxation include interest on federal securities, armed services pay, certain pensions and annuities, national guard pay and income from the sale of halibut taken outside of Alaskan waters. In addition, the State tax is not included in Federal taxable income but it is included in State taxable

income. Finally, the standard deduction is included in Federal taxable income because it is subtracted out of taxable income automatically in the tax tables and tax rate schedules. Thus, Federal taxable income was computed as Federal adjusted gross income plus the standard deduction minus 1979 State income taxes withheld minus personal exemptions minus allowable State deductions.

Federal taxes were computed by applying the appropriate tax rate to Federal taxable income. The tax rate that was applied to Federal taxable income was selected according to the taxable income and filing status reported on each return. By adding the 1979 State refund to Federal taxable income the new taxable income and the appropriate new tax rate associated with it was estimated. The new tax rate was then applied to the State refund to calculate the Federal leakage for each return by filing status. For example, a refund of \$800 on an itemized return for a single taxpayer that had \$18,200 in taxable income would result in \$19,000 taxable income. The additional \$800 would be taxed at a rate of 34% or \$272, which is one tax bracket higher than the 30% rate which applied to taxable income over \$15,000 before the tax refund. This \$272 is the federal tax leakage associated with the \$800 State income tax refund. Of the 55,998 itemizing resident returns 49,100 remain in the same tax bracket, 6,838 jump one tax bracket and 60 returns jump two tax brackets as a result of adding 1979 State income tax refunds. Federal tax schedules X, Y and Z were used to make the tax computations for the tables presented in this report.

Accuracy of Estimates:

As shown in Table A, there were 2,405 resident returns and 840 nonresident returns categorized as having zero adjusted gross income (AGI). There are several reasons for this phenomenon. First, some returns may have negative taxable income or income and deductions which are equal. Second, the data on some returns may not have been completely captured (keypunched). And finally, returns received after August either did not contain any tax data other than the amount of tax to be refunded, or in the interest of quick and efficient handling of tax refunds, the data on these returns was not keypunched for the computerized record.

Because State taxes are allowed as a deduction against Federal taxable income but not allowed as a deduction against State taxable income, a few returns which itemized at the Federal level may not have itemized at the State level. Since the number of State resident returns which itemized was used as the surrogate for the number of Federal returns which itemized in 1979, the Federal leakage associated

with 1979 State income tax refunds may be slightly understated. However, Federal individual income tax statistics for tax years 1972 through 1977 indicate that approximately the same percentage of returns itemized in Alaska at the Federal level as were itemized at the State level for tax year 1979.

Some residents who itemized their Federal deductions may file amended returns and claim the standard deduction, if in so doing they can retain more money by keeping the full tax refund as opposed to itemizing deductions on their 1979 Federal tax returns. Finally, since Federal taxable income was computed from State tax data, only resident returns were used in the calculations. Nonresident returns are restricted with regard to the itemized deductions that they may claim on their Alaska tax returns. Itemized deductions are allowed only to the extent that they are paid from income earned in Alaska or directly connected with property having a taxable situs in Alaska. Thus, nonresident State deductions are less than Federal deductions. Consequently, Federal taxable income (and the Federal tax leakage associated with it) if calculated as Federal adjusted gross income plus the standard deduction minus 1979 State income taxes withheld minus personal exemptions minus allowable State deductions, would be overstated for nonresident returns.

TABLE I

1979 Itemizing Residents Estimate Of Tax LeakageSummary

<u>Filing Status</u>	<u>Returns</u>	<u>Estimated Federal Taxable Income</u>	<u>Alaska State Tax Paid</u>	<u>Estimated Tax Leakage</u>
Single	12,415	\$ 200,601,536	\$ 9,773,914	\$ 4,173,041
Married-Joint	39,476	1,170,493,498	42,730,912	18,387,549
Married-Separate	838	10,507,790	425,234	198,551
Unmarried-Head of Household	3,168	56,803,812	2,261,403	906,711
Widow(er)	101	1,712,322	48,607	20,187
Totals	<u>55,998</u>	<u>\$1,440,118,959</u>	<u>\$55,240,070</u>	<u>\$24,186,038</u>

TABLE II

1979 Itemizing Residents Estimate Of Tax LeakageFiling Single

<u>Estimated Federal Taxable Income Range</u>	<u>Returns</u>	<u>Estimated Federal Taxable Income</u>	<u>Alaska State Tax Paid</u>	<u>Estimated Tax Leakage</u>
\$ 0	247	\$ 0	\$ 0	\$ 0
1- 2,300	2,089	3,047,898	191,298	0
2,301- 3,400	552	1,506,559	39,064	1,273
3,401- 4,400	379	1,467,718	6,462	634
4,401- 6,500	545	2,923,656	13,661	1,502
6,501- 8,500	541	4,025,641	31,706	4,393
8,501- 10,800	527	5,046,188	40,275	8,421
10,801- 12,900	560	6,526,200	120,260	27,676
12,901- 15,000	605	8,260,527	180,407	48,956
15,001- 18,200	1,033	16,627,903	526,945	156,821
18,201- 23,500	1,687	33,834,372	1,367,286	462,111
23,501- 28,800	1,370	33,910,252	1,693,226	652,035
28,801- 34,100	942	27,871,593	1,620,435	699,322
34,101- 41,500	716	25,085,318	1,636,917	787,068
41,501- 55,300	474	20,635,719	1,474,514	798,125
55,301- 81,800	126	7,552,414	593,336	367,967
81,801-108,300	16	1,372,581	131,327	88,496
108,301- +	6	906,994	97,796	68,239
Totals	<u>12,415</u>	<u>\$200,601,536</u>	<u>\$9,773,914</u>	<u>\$4,173,041</u>

TABLE III

1979 Itemizing Residents Estimate Of Tax LeakageFiling Jointly

<u>Estimated Federal Taxable Income Range</u>	<u>Returns</u>	<u>Estimated Federal Taxable Income</u>	<u>Alaska State Tax Paid</u>	<u>Estimated Tax Leakage</u>
\$ 0	753	\$ 0	\$ 0	\$ 0
1- 3,400	1,506	1,897,131	551,885	0
3,401- 5,500	626	2,654,946	110,979	3,415
5,501- 7,600	678	4,440,780	28,764	2,741
7,601- 11,900	1,848	18,273,618	48,827	6,550
11,901- 16,000	2,367	33,139,137	79,615	16,536
16,001- 20,200	2,938	53,037,911	397,439	95,086
20,201- 24,600	3,910	86,587,757	1,325,390	367,610
24,601- 29,900	5,235	139,707,838	3,197,448	1,018,301
29,901- 35,200	5,342	168,461,698	5,135,562	1,875,101
35,201- 45,800	8,056	309,911,902	12,136,572	5,174,723
45,801- 60,000	4,456	218,125,352	10,834,659	5,243,567
60,001- 85,600	1,360	87,574,466	5,237,655	2,790,715
85,601-109,400	223	20,102,976	1,391,654	812,280
109,401-162,400	132	15,667,371	1,266,199	800,969
162,401-215,400	26	4,340,635	391,907	262,787
215,401- +	20	6,569,980	596,357	417,167
Totals	<u>39,476</u>	<u>\$1,170,493,498</u>	<u>\$42,730,912</u>	<u>\$18,887,549</u>

TABLE IV

1979 Itemizing Residents Estimate Of Tax LeakageFiling Separately

<u>Estimated Federal Taxable Income Range</u>	<u>Returns</u>	<u>Estimated Federal Taxable Income</u>	<u>Alaska State Tax Paid</u>	<u>Estimated Tax Leakage</u>
\$ 0	54	\$ 0	\$ 0	\$ 0
1- 1,700	117	94,954	3,124	0
1,701- 2,750	30	64,934	86	12
2,751- 3,800	34	110,961	33	5
3,801- 5,950	64	308,428	11,794	1,385
5,951- 8,000	57	391,703	813	171
8,001- 10,000	50	446,470	5,644	1,329
10,001- 12,300	57	624,798	10,530	2,938
12,301- 14,950	56	740,845	16,569	5,267
14,951- 17,600	53	827,305	27,139	9,830
17,601- 22,900	115	2,213,209	86,348	36,804
22,901- 30,000	81	2,015,730	98,601	47,615
30,001- 42,800	52	1,746,648	101,264	54,161
42,801- 54,700	10	452,918	28,971	16,888
54,701- 81,200	7	385,366	26,088	16,549
81,201-107,700	1	83,522	8,230	5,596
107,701- +	0	0	0	0
Totals	<u>838</u>	<u>\$10,507,790</u>	<u>\$425,234</u>	<u>\$198,551</u>

TABLE V

1979 Itemizing Residents Estimate Of Tax LeakageFiling Head Of House

<u>Estimated Federal Taxable Income Range</u>	<u>Returns</u>	<u>Estimated Federal Taxable Income</u>	<u>Alaska State Tax Paid</u>	<u>Estimated Tax Leakage</u>
\$ 0	110	\$ 0	\$ 0	\$ 0
1- 2,300	180	213,806	11,037	0
2,301- 4,400	103	348,772	7,242	370
4,401- 6,500	140	764,472	714	114
6,501- 8,700	170	1,314,324	2,692	485
8,701- 11,800	314	3,208,540	30,270	6,648
11,801- 15,000	347	4,572,816	85,193	20,396
15,001- 18,200	355	5,729,100	161,623	41,753
18,201- 23,500	509	10,199,334	348,245	107,155
23,501- 28,800	383	9,497,937	396,836	140,806
28,801- 34,100	230	6,871,403	344,876	142,442
34,101- 44,700	219	8,030,576	455,163	207,932
44,701- 60,600	84	3,969,547	248,438	131,115
60,601- 81,800	14	894,503	62,764	36,428
81,801-108,300	6	526,585	41,823	26,322
108,301-161,300	2	227,769	19,907	13,537
161,301- +	2	434,329	44,583	31,208
Totals	<u>3,168</u>	<u>\$56,803,812</u>	<u>\$2,261,403</u>	<u>\$906,711</u>

TABLE VI

1979 Itemizing Residents Estimate Of Tax LeakageFiling Widow

<u>Estimated Federal Taxable Income Range</u>	<u>Returns</u>	<u>Estimated Federal Taxable Income</u>	<u>Alaska State Tax Paid</u>	<u>Estimated Tax Leakage</u>
\$ 0	7	\$ 0	\$ 0	\$ 0
1- 3,400	14	19,837	0	0
3,401- 5,500	6	27,903	5	1
5,501- 7,600	8	54,270	0	0
7,601- 11,900	10	99,159	103	19
11,901- 16,000	9	127,227	727	153
16,001- 20,200	10	176,120	2,593	613
20,201- 24,600	13	282,511	6,433	1,801
24,601- 29,900	5	132,440	3,673	1,150
29,901- 35,200	6	186,045	6,205	2,234
35,201- 45,800	9	349,588	12,159	5,073
45,801- 60,000	2	94,736	4,990	2,445
60,001- 85,600	1	62,180	4,313	2,329
85,601-109,400	1	100,306	7,406	4,370
109,401-215,400	0	0	0	0
215,401- +	0	0	0	0
Totals	<u>101</u>	<u>\$1,712,322</u>	<u>\$48,607</u>	<u>\$20,187</u>

TABLE A

1979 Resident Returns

<u>Federal AGI Range</u>	<u>Returns</u>	<u>Alaska Taxable Income</u>	<u>Alaska State Tax Paid</u>
\$ 0	2,405	\$ 190,276	\$ 999,101
1- 5,000	25,751	6,486,443	63,685
5,001- 10,000	20,164	61,262,549	177,703
10,001- 15,000	18,006	112,689,187	1,771,070
15,001- 20,000	15,695	167,264,902	3,758,809
20,001- 25,000	13,111	188,315,241	5,109,024
25,001- 30,000	11,097	207,485,192	6,408,912
30,001- 35,000	9,734	220,577,934	7,354,175
35,001- 40,000	8,318	223,583,054	8,259,171
40,001- 45,000	6,942	215,642,962	8,735,178
45,001- 50,000	5,220	184,580,094	8,159,131
50,001- 60,000	6,597	269,899,159	13,204,322
60,001- 100,000	4,455	239,885,717	13,919,790
100,001- +	509	60,010,940	4,611,756
Subtotal	<u>148,004</u>	<u>\$2,167,873,650</u>	<u>\$82,531,737</u>

1979 Nonresident Returns

<u>Federal AGI Range</u>	<u>Returns</u>	<u>Alaska Taxable Income</u>	<u>Alaska State Tax Paid</u>
\$ 0	840	\$ 3,308,470	\$ 176,164
1- 5,000	6,530	3,326,848	61,254
5,001- 10,000	8,648	20,175,524	295,477
10,001- 15,000	6,186	28,239,117	604,111
15,001- 20,000	4,535	29,531,979	715,370
20,001- 25,000	3,187	28,036,155	791,047
25,001- 30,000	2,387	25,939,577	824,290
30,001- 35,000	1,832	24,598,141	867,064
35,001- 40,000	1,361	22,755,027	893,874
40,001- 45,000	999	19,459,837	837,390
45,001- 50,000	665	14,783,572	683,632
50,001- 60,000	909	25,559,573	1,301,446
60,001- 100,000	795	25,223,909	1,438,842
100,001- +	246	7,977,416	579,604
Subtotal	<u>39,120</u>	<u>\$278,915,145</u>	<u>\$10,069,565</u>
Total	<u>187,124</u>	<u>\$2,446,788,795</u>	<u>\$92,601,302</u>

TABLE B

1979 Residents Itemizing Deductions

<u>Federal AGI Range</u>	<u>Returns</u>	<u>Alaska Taxable Income</u>	<u>Alaska State Tax Paid</u>
\$ 0	1,769	\$ 27,206	\$ 987,098
1- 5,000	3,196	1,164,575	31,957
5,001- 10,000	2,068	4,084,880	39,273
10,001- 15,000	2,901	13,346,909	138,146
15,001- 20,000	3,943	34,729,763	632,211
20,001- 25,000	4,868	62,258,014	1,487,078
25,001- 30,000	5,547	95,701,706	2,677,870
30,001- 35,000	5,953	126,816,594	3,928,027
35,001- 40,000	5,856	151,429,874	5,313,850
40,001- 45,000	5,383	161,623,207	6,261,470
45,001- 50,000	4,309	148,681,669	6,395,904
50,001- 60,000	5,732	230,444,696	11,079,094
60,001- 100,000	4,017	212,891,786	12,285,905
100,001- +	456	51,856,046	3,982,187
Subtotal	55,998	\$1,295,056,925	\$55,240,070

1979 Residents Taking Standard Deduction

<u>Federal AGI Range</u>	<u>Returns</u>	<u>Alaska Taxable Income</u>	<u>Alaska State Tax Paid</u>
\$ 0	636	\$ 163,070	\$ 11,913
1- 5,000	22,555	5,321,868	31,728
5,001- 10,000	18,096	57,177,669	138,430
10,001- 15,000	15,105	109,342,278	1,632,924
15,001- 20,000	11,752	132,535,139	3,126,598
20,001- 25,000	8,243	126,057,227	3,621,946
25,001- 30,000	5,550	111,783,486	3,731,042
30,001- 35,000	3,781	93,761,340	3,425,148
35,001- 40,000	2,462	72,153,180	2,945,321
40,001- 45,000	1,559	54,019,755	2,473,708
45,001- 50,000	911	35,898,425	1,763,227
50,001- 60,000	865	39,454,463	2,125,228
60,001- 100,000	438	26,993,931	1,633,885
100,001- +	53	8,154,894	629,569
Subtotal	92,006	\$872,816,725	\$27,291,667
Total	148,004	\$2,167,873,650	\$82,531,737

TABLE C

1979 Nonresident Itemizing, Out of State Returns

<u>Federal AGI Range</u>	<u>Returns</u>	<u>Alaska Taxable Income</u>	<u>Alaska State Tax Paid</u>
\$ 0	8	\$ 144,907	\$ 3,807
1- 5,000	1,957	649,956	7,095
5,001- 10,000	3,240	6,797,436	102,668
10,001- 15,000	2,439	10,104,460	216,445
15,001- 20,000	2,042	12,289,841	288,444
20,001- 25,000	1,501	12,118,852	324,986
25,001- 30,000	1,246	12,474,520	386,331
30,001- 35,000	1,040	12,845,702	429,564
35,001- 40,000	812	13,000,383	492,411
40,001- 45,000	639	11,655,928	484,634
45,001- 50,000	445	9,151,045	406,963
50,001- 60,000	613	15,850,082	779,038
60,001- 100,000	587	17,483,202	952,707
100,001- +	177	6,296,239	456,581
Subtotal	16,746	\$140,862,553	\$5,331,674

1979 Nonresident Itemizing, Instate Returns

<u>Federal AGI Range</u>	<u>Returns</u>	<u>Alaska Taxable Income</u>	<u>Alaska State Tax Paid</u>
\$ 0	7	\$ 105,675	\$ 3,863
1- 5,000	408	83,890	250
5,001- 10,000	983	1,715,981	16,097
10,001- 15,000	888	3,310,517	57,319
15,001- 20,000	668	3,765,440	78,015
20,001- 25,000	468	3,679,822	92,624
25,001- 30,000	343	3,737,080	112,379
30,001- 35,000	267	3,511,647	116,887
35,001- 40,000	164	2,770,186	101,793
40,001- 45,000	129	2,598,264	102,551
45,001- 50,000	59	1,256,673	55,350
50,001- 60,000	90	2,594,570	124,180
60,001- 100,000	53	1,980,188	118,452
100,001- +	8	559,177	44,243
Subtotal	4,535	\$31,669,110	\$1,024,003
Total	21,281	\$172,531,663	\$6,355,677

TABLE D

1979 Nonresident Standard Deduction, Out of State Returns

<u>Federal AGI Range</u>	<u>Returns</u>	<u>Alaska Taxable Income</u>	<u>Alaska State Tax Paid</u>
\$ 0	623	\$ 2,399,673	\$ 153,012
1- 5,000	3,087	2,050,696	45,693
5,001- 10,000	3,142	8,586,396	137,234
10,001- 15,000	2,050	11,063,999	256,043
15,001- 20,000	1,268	9,629,063	258,569
20,001- 25,000	912	9,238,049	287,859
25,001- 30,000	606	7,375,499	252,090
30,001- 35,000	422	6,417,023	260,253
35,001- 40,000	329	6,064,177	262,288
40,001- 45,000	210	4,720,094	229,446
45,001- 50,000	150	4,117,236	208,263
50,001- 60,000	191	6,680,722	377,045
60,001- 100,000	151	5,577,647	355,354
100,001- +	58	924,223	57,909
Subtotal	<u>13,199</u>	<u>\$84,844,497</u>	<u>\$3,141,058</u>

1979 Nonresident Standard Deduction, Instate Returns

<u>Federal AGI Range</u>	<u>Returns</u>	<u>Alaska Taxable Income</u>	<u>Alaska State Tax Paid</u>
\$ 0	202	\$ 658,215	\$ 15,482
1- 5,000	1,078	542,306	8,216
5,001- 10,000	1,283	3,075,711	39,378
10,001- 15,000	809	3,760,141	74,304
15,001- 20,000	557	3,847,635	90,342
20,001- 25,000	306	2,999,432	85,578
25,001- 30,000	192	2,352,478	73,490
30,001- 35,000	103	1,823,769	60,360
35,001- 40,000	56	920,281	37,382
40,001- 45,000	21	485,551	20,759
45,001- 50,000	11	258,618	13,056
50,001- 60,000	15	434,199	21,183
60,001- 100,000	4	182,872	12,329
100,001- +	3	197,777	20,871
Subtotals	<u>4,640</u>	<u>\$21,538,985</u>	<u>\$572,830</u>
Total	<u>17,839</u>	<u>\$106,383,482</u>	<u>\$3,713,888</u>



ALASKA STATE LEGISLATURE
HOUSE OF REPRESENTATIVES
RESEARCH AGENCY

Pouch Y. State Capitol
Juneau, Alaska 99811
(907) 465-3991

April 8, 1986

MEMORANDUM

TO: Representative Mike Davis

ATTN: Mike Welsh

FROM: Mary Jennings *mq*
Legislative Analyst

RE: Commuter Taxes as They Relate to Resident Hire
Research Request 86-147

You requested information regarding commuter taxes; specifically, how do they work, which states have them and whether or not they could be used in Alaska to encourage resident hire.

A number of local governments providing regional services use a wage tax that allows them to tax commuters. A local income tax is allowed by state law in Delaware, Indiana, Kentucky, Michigan, Missouri, New York, Ohio, and Pennsylvania. The tax is withheld from employees' wages and salaries. The rate of taxation for nonresidents (commuters) is either equal to, or in most cases, less than the rate for residents and, depending on the state, it ranges from .5 percent to 4.9 percent. All of the states employing a wage tax have a state income tax which, according to the Pennsylvania Department of Revenue, makes collection and enforcement costs of the commuter tax negligible.

The Pennsylvania Department of Revenue stated that the purpose of the tax is to generate revenue, and not to encourage people to work and live in the same city or county. The department pointed out that in metropolitan Pittsburgh, most cities and towns levy the wage tax, thereby eliminating the incentive of employers to leave the central city for the suburbs. In other states such as Michigan and Ohio, agreements exist between jurisdictions providing that each will receive some income tax revenues from individuals living in one jurisdiction but working in another.

Representative Davis
April 8, 1986
Page Two

Other Nonresident Income Taxation

In 1983, Oregon enacted legislation that changed the way nonresident income was taxed. The law allowed the amount of nonresident income earned in Oregon to be taxed at the rate of the nonresident's total income. In instances where individuals earned only a portion of their income in Oregon, this method of taxation resulted in nonresidents paying higher taxes than residents.¹ According to the Oregon Department of Revenue, this tax legislation set off "border wars" between Oregon and Washington. As a result, Washington, which does not have a state income tax, proposed legislation that would allow border towns in Washington levy a commuter tax on nonresidents working in Washington. Don Smallwood, of the Washington Department of Revenue, stated that Washington proposed this legislation as a threat in order to get Oregon to repeal their new law for taxation of nonresidents. Soon after the Washington proposal, Oregon repealed its law. Although no formal legal opinions resulted, Smallwood stated that the constitutionality of the Oregon law and the proposed Washington legislation was questioned.

Resident Hire in Alaska

The commuter tax as used in other states does not appear to be applicable to encouraging resident hire. In addition, Alaska does not levy a State income tax and the administrative costs of a wage tax would probably be significant. There is also a question of the constitutionality of taxing nonresidents and residents differently. According to Theresa Hillhouse, the Chief Hearing Examiner of the Department of Revenue, in the 1950s, Alaska had instituted a fisheries tax that levied a higher tax on nonresident fisherman. The constitutionality of this law was challenged and it was subsequently repealed.

For your information, I have attached a letter from Mr. William Phillips dealing with this issue. This agency has performed no analysis of Mr. Phillip's proposal, but the concept of credits that favor residents and/or distributions similar to Permanent Fund dividends may have potential as a method for imposing a relatively high tax burden on nonresidents. I hope you find this information useful. Please contact me if you have any questions.

MJ

Attachment

¹The actual tax rate paid by all individuals would be identical. However, by taxing income earned outside Oregon (versus the previous method of taxing only income earned in the state), the amount of tax paid relative to the amount of income earned in Oregon could be higher for nonresidents than for residents.

January 30, 1986

The Honorable Representatives and Senators of the State of Alaska
Pouch V
Juneau, Alaska 99811

Dear Sirs and Madams:

This is a proposal that could deal with two problems facing the state of Alaska; revenue enhancement and local hire. Establish a new state income tax with deductions and tax credits that would just happen to promote living in Alaska. The tax would make it more costly for non-residents to work in Alaska. The non-residents would have the options of moving to Alaska, making a substantial economic investment in Alaska, or seeking work elsewhere.

Establish an income tax with the following rates:

- 5% on the first \$25,000 of taxable income.
- 7.5% on the next \$15,000 of taxable income.
- 10.0% on the next \$20,000 of taxable income.
- 12.5% on all taxable income over \$60,000.

Establish deductions of:

- 25% of the assessed valuation of real property owned in Alaska to a limit of \$30,000.
- Or, rent paid on real property in the state of Alaska to a limit of \$30,000.

Establish tax credits for the following:

- Up to \$500 for donations to the Alaskan Student Loan Fund.
- Up to \$500 for campaign donations made to Alaskan political candidates and/or Alaska political action groups.

Here follow two examples of how this tax plan could work.

Joe Doaks of Tuna, Texas and Sam Resident of Kenai Alaska both own homes with a value of \$120,000 plus personal property of two cars and a boat.

	<u>Doaks</u>	<u>Resident</u>
Income	\$75,000	\$75,000
Deductions	0	30,000
Taxable Income	<u>75,000</u>	<u>45,000</u>
Taxes	6,250	2,875
Credits		
Local Alaskan Real and personal property taxes at 8 mills on \$150,000	0	1,200
Local sales taxes at 5% of 25% of income	0	937.50
Donation to Loan Fund	500	500
Donation to Campaigns	<u>500</u>	<u>500</u>
Total credits	<u>1,000</u>	<u>3,175.50</u>
Taxes owed	5,250	0

Bill Jones of Los Angeles and Don Smith of Fairbanks each own a \$100,000 home and own two cars and a boat.

	<u>Jones</u>	<u>Smith</u>
Income	\$45,000	\$45,000
Deductions	<u>0</u>	<u>25,000</u>
Taxable Income	45,000	20,000
Taxes	2,825	1,000
Credits		
Local Alaskan Real and personal property taxes at 8 mills on \$120,000	0	960
Local sales taxes at 5% of 25% of income	0	0
Donation to Loan Fund	500	0
Donation to Campaigns	<u>500</u>	<u>40</u>
Total Credits	1,000	1,000
Taxes owed	1,825	0

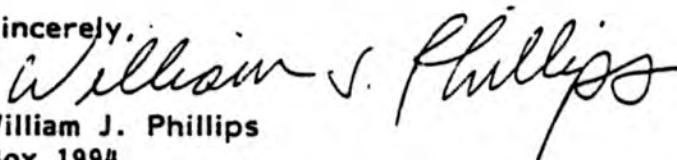
It should be the responsibility of employers to deduct the taxes from earnings. Non-resident contractors should be required to post a \$500,000 bond to guarantee collection and payment of the taxes to the state of Alaska.

Yes, other states would retaliate against the state of Alaska, but then how many Alaskans work out of state while retaining Alaska residency.

A non-resident could buy real property in Alaska or rent Alaskan real property. Nothing would stop them from purchasing and keeping personal property in Alaska. They could buy taxable goods here and take them back home with them. Since a non-resident would be entitled to the same deductions as a resident the tax and deductions would not be discrimination.

While this proposal will not guarantee local hire the additional tax bite should discourage non-residents from working in Alaska. If nothing else the non-residents will start paying their fair share of the costs for services provided to them in the state of Alaska.

Sincerely,


William J. Phillips
Box 1994
Kenai, Alaska 99611

**STATE, FEDERAL AND INDUSTRY SHARES OF ALASKA OIL
RESOURCE INCOME: FISCAL 1982-1985**
(millions of dollars except as noted)

	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]
Fiscal year	Total Revenue	State Royalty	Sever. Conser. tax	Total Prop. tax	Total Oper. Costs	Total Deprec.	Total Acquis. Costs	Windfall Profits Tax
1982	\$16,456	\$1,553	\$1,581	\$276	\$940	\$602	\$1	\$2,018
1983	\$15,470	\$1,448	\$1,494	\$307	\$1,101	\$780	\$1	\$1,018
1984	\$14,955	\$1,409	\$1,393	\$358	\$1,259	\$998	\$1	\$412
1985	\$15,136	\$1,390	\$1,389	\$397	\$1,449	\$1,093	\$1	\$70

	[9]	[10]	[11]	[12]	[13]	[14]	[15]	[16]
Fiscal Year	Uncap. Interest Expense	Explore. Costs	Admin. Costs	Other Deductions	Total Deductions	State Taxable Net Income	Corp. Petrol Income Tax	Federal Taxable Income
1982	\$721	\$191	\$236	\$149	\$8,268	\$8,188	\$669	\$7,519
1983	\$676	\$204	\$252	\$142	\$7,423	\$8,047	\$236	\$7,811
1984	\$614	\$219	\$265	\$136	\$7,064	\$7,891	\$265	\$7,626
1985	\$566	\$234	\$278	\$130	\$6,997	\$8,139	\$169	\$7,970

	[17]	[18]	[19]	[20]	[21]	[22]	[23]
Fiscal Year	Federal Corp. Income Tax	Oil Industry Alaska Profits	Total Federal Tax	Total State Tax & Royalty	----Share of Oil Income----		
1982	\$2,098	\$5,421	\$4,116	\$4,079	30%	30%	40%
1983	\$2,140	\$5,671	\$3,158	\$3,485	28%	26%	46%
1984	\$2,242	\$5,384	\$2,654	\$3,425	30%	23%	47%
1985	\$2,343	\$5,627	\$2,413	\$3,345	29%	21%	49%

SOURCES AND FORMULAS -

- Column [1]: Vincent Wright, chief of research, to Mary Nordale, Commissioner of Revenue, Memorandum of October 31, 1985, Table 3.
- Columns [2] & [3]: January 1986 DOR Revenue Sources, p. 39.
- Columns [4] to [12]: Vincent Wright, loc. cit.
- Column [13]: sum of columns [2] through [12]
- Column [14]: column [1] - column [13]
- Column [15]: Revenue Sources, p. 39.
- Column [16]: column [14] - column [15].
- Column [17]: column [16] * (production-weighted average tax rate -- 1982 = .279; 1983 = .274; 1984 = .294; 1985 = .294). Company effective rates for '82-84 from R. McIntire and R. Folen, "Corporate Income Taxes in the Reagan Years," Oct. 1984, pp. 32-36; '85 estimated by OMB.
- Column [18]: column [16] - column [17].
- Column [19]: column [8] + column [17].
- Column [20]: sum of columns [2], [3], [4], and [15].
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Office of Management and Budget
Division of Strategic Planning
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REVENUE ALTERNATIVES

Excise Taxes
Fisheries Taxes
Licenses and Permits
December 1986

Prepared by

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MEMORANDUM

State of Alaska

TO: Vincent D. Wright
Chief of Research
Department of Revenue

DATE: January 6, 1987

FILE NO.:

THRU:

TELEPHONE NO.: 465-2173

FROM: Dave Tonkovich, Economist ^{ET}
Bob Elliott, Research Analyst ^{BE}
Department of Revenue

SUBJECT: Alternative Means of
Increasing Revenues -
Selective Sales Taxes,
Fisheries Taxes, and
Licenses and Permits

Selective Sales Taxes

Excise taxes are a common form of consumption tax levied on the sale of particular commodities or groups of commodities. Two main types of tax predominate: benefit taxes such as those levied on purchases of motor fuel and sumptuary taxes such as the excises on tobacco and alcohol.

Benefit taxes are rationalized as payments for services which yield measurable benefits to individuals. While it is usually not feasible to charge a motorist a user fee for each mile driven he can be indirectly charged through a tax on the amount of gasoline consumed.

Sumptuary taxes penalize consumption with the hope that this will diminish the use of products such as liquor or cigarettes. However, if such products have low demand elasticities (i.e. consumption responds relatively little when compared to price changes) there is a real question as to whether the sumptuary objective is attained.

Because these taxes have similar characteristics it is helpful to analyze the general features before the review of specific taxes.

Efficiency

Consumption taxes are never levied at a uniform rate on all goods and services and can significantly alter consumer choices and resource allocation. Excise taxes raise the price of the taxed commodity causing consumers to purchase less of the item. The economic effects of the tax depend largely on the demand and supply elasticities of the taxed item.

The burden of these taxes is borne in part by consumers and in part by distributors and producers. Most of the burden will fall on consumers where demand is relatively inelastic (consumption is reduced little relative to an increase in price). The burden will tend to fall on producers if they cannot reduce production as price declines. That is to say supply is inelastic.

Most excise tax revenues are raised from taxes on products for which demand is inelastic - tobacco, alcohol and gasoline. Supply in these industries is relatively elastic so most of the burden falls on

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consumers. Because consumption of these goods is not reduced much by the price increase the consumer has to reduce consumption of other commodities as well as those which are taxed. Because a wide range of other commodities are involved and because there is little incentive for resources to move out of the taxed industry, resource allocation is not altered significantly by taxes on these goods. This is in sharp contrast to the case of taxes on commodities which are sensitive to price as such levies can substantially alter the pattern of production and consumption. [See Joseph Pechman, Federal Tax Policy, Ch. 6]

Selective excise taxes such as those levied on motor fuel contribute to efficiency in that they collect payments from individuals who benefit from particular public services. When public programs such as the provision and maintenance of highways, airports or docks lower the cost of an activity, that activity is artificially stimulated. This causes more resources to flow into the activity than would occur in the absence of the public program. An excise tax, or some other means of charging for the service, is needed to maintain economic efficiency.

Taxes on items considered socially undesirable are sumptuary taxes and are rationalized on the grounds that their consumption creates additional costs to society which are not reflected in the price of the goods. For instance alcohol consumption leads to lost work time, family problems and accidents while the health hazards of tobacco products are well documented. The argument is made that the excise tax raises prices on these items to more accurately reflect these social costs.

Equity

Excise taxes can be criticized on equity grounds. Burdens are not distributed in accord with established principles of equity such as ability-to-pay. Rather the distribution depends on the proportion of income allocated to taxed items by various income groups. For instance, studies have found excises on beer and cigarettes to be very regressive.

Excise taxes are also criticized for their effects on people with similar incomes (Horizontal equity). Those who prefer the taxed commodities are taxed more than those who prefer other items. This argument is less critical in cases where there are valid social reasons for discouraging consumption or where user charges are impractical.

Finally excise taxes imposed on businesses may be passed onto consumers. Because lower income families spend a larger proportion of their income than do higher income families, this pass through is likely regressive. In summary, equity is frequently the major issue in evaluations of excise taxes.

Elasticity

Excise taxes are not very elastic in that they respond no more than in proportion to changes in income. However the yield of such taxes is relatively stable which makes these taxes popular among state and local governments.

One problem with the taxes as levied in Alaska is that tax rates are expressed as a charge per unit of consumption. When rates are expressed in nominal terms the real tax rate can decline dramatically in periods with significant inflation. Two alternatives to this problem would be the periodic adjustment of rates to reflect inflation or the imposition of the tax as a percentage of sales value. For instance, 11 states employ ad valorem taxes on alcohol. The City of Juneau adds 3% to its 4% sales tax rate for purchases of alcohol.

Administration and Compliance

Probably the main attraction of excise and other consumption taxes is their relative ease of administration. In most cases there are relatively few firms or individuals who need to be monitored by tax authorities. Most difficulties arise in determining if a particular transaction or activity creates a tax liability. In some states problems occur because lower tax rates in bordering states lead to a loss of business and smuggling. Such interstate problems would be minimal in Alaska.

Political Considerations

Private and public concerns about health and problems caused by alcohol consumption generate some support for the sumptuary taxes. Because fuel prices have stabilized or started to decline in the state there is probably less resistance to tax increases on fuels than would have been the case several years ago. Problems could arise if a number of excise taxes were raised simultaneously with other taxes as this could be burdensome particularly for low income groups.

Cigarette Tax

The present cigarette tax is 8 mills per cigarette with 5.5 mills (68.75% of revenues) going to the general fund and 2.5 mills (31.25% of revenues) going to the school fund.

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The January 1986 revenue forecast used these estimates of cigarette consumption:

Taxable Cigarettes
(Millions of Cigarettes)

<u>FY 87</u>	<u>FY 88</u>	<u>FY 89</u>
1,264.9	1,202.4	1,154.6

General Fund revenues for 1987 should be approximately \$7 million dollars with School Fund revenues of \$3.2 million. For a package of 20 cigarettes the 8 mill rate translates to \$.16 per pack. The highest rate among other states is Maine with a tax of \$.28 per pack. That rate would, in the absence of adjustments for higher, tax-induced declines in consumption, raise about \$17.7 million for Alaska. This is an increase of about \$7 million.

It is useful to examine the elasticity issue for the cigarette tax. The general points made about efficiency, equity and administrative costs pretty well cover the issues usually raised in analyses of cigarette taxes.

Concerns with the health hazards of smoking have tended to decrease cigarette use over time. Figures for 1982 showed that the number of adult smokers nationally had declined by 27 percent since 1965. In Alaska per capita sales peaked at 165 packs per year in 1976, fell during the post pipeline period and rose again to 148 packs in 1982. Since that time consumption has fallen to 129 packs, a decline of 13 percent in 3 years.

Given the economic outlook, it is unlikely that population will increase significantly and the yield of this tax could easily decrease.

Alcoholic Beverage Excise Tax

The January 1986 revenue forecast was based on these estimates of future sales for the three main beverage types:

Gallons of Alcoholic Beverages

	<u>FY 87</u>	<u>FY 88</u>	<u>FY 89</u>	<u>Current Rate/Gal.</u>
Liquor	1,199,863	1,152,205	1,117,870	\$5.60
Wine	1,555,228	1,508,569	1,478,399	.85
Beer	13,585,324	13,177,749	12,914,208	.35
Estimated Present Tax	\$12,796,040	\$12,346,844	\$12,036,684	

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One approach taken by other states is to equalize the tax on a per ounce of alcohol basis. Consider these figures based on average alcohol content by beverage type (1 gallon = 128 ounces):

	<u>Absolute Alcohol %</u>	<u>Ounces of Alcohol/gal.</u>	<u>Present Tax per ounce of Alcohol</u>	<u>Rate to Equalize Tax per ounce</u>
Liquor	43.0	55.0	\$.1018	\$5.60
Wine	14.0	17.9	.0475	1.82
Beer	4.5	5.76	.0607	.58

On this ounce of alcohol basis the present liquor tax is over twice as high as the tax on wine and is 1.67 times the tax on beer. It is hard to justify the present structure if the goal of tax policy is to reduce alcohol consumption.

Application of the "equalized" rates to FY 87 gallonages would produce revenues of \$17.4 million, an increase of about \$4.6 million. Keep in mind that actual revenues would be somewhat lower because of a decrease in consumption caused by higher prices for wine and beer.

The general arguments made on sumptuary taxes regarding efficiency, equity and administrative costs apply to the alcohol tax. The elasticity issue warrants separate analysis because of the effect of changing lifestyles on liquor consumption.

In 1987, under the present rate structure, over half of alcohol tax revenues will come from the tax on liquor. The national trend has seen per capita consumption of liquor decline by 10 percent over the 5 year period beginning in 1980. This tendency, plus the stagnant outlook for population suggests little if any growth in this source of revenue over the near future.

It is also worthwhile to consider the political and social concerns associated with taxes on alcohol. Taxes on alcohol have appeal for several reasons. The tax is widely used and has been used over long periods of time. The first excise tax on liquor in Alaska was a 1933 levy of 5 cents a gallon on beer and wine. Second, alcoholism is a severe problem in Alaska and there is some evidence that high taxes can discourage drinking by particular groups such as young people. Finally, there are obvious externalities associated with alcohol consumption - broken homes, child abuse, and drunk driving. Public policy aimed at reducing consumption would seem to have a strong justification.

FILE SUMMARY
DEBITS AND CREDITS
MONTH & YEAR: FY 1906

TOTAL	AVIATION GAS			AVIATION JET			MARINE GAS			MARINE DIESEL			OTHER GAS			OTHER DIESEL		
	AMOUNT	RATE	GALLONS	AMOUNT	RATE	GALLONS	AMOUNT	RATE	GALLONS	AMOUNT	RATE	GALLONS	AMOUNT	RATE	GALLONS	AMOUNT	RATE	GALLONS
TOTAL DISTRIBUTIONS			18471847			560656175			15056795			105297514			218042714			66369517
EXEMPT DISTRIBUTIONS			606828			261678537			307187			6850594			18623962			385241910
TAXABLE DISTRIBUTIONS	653,643,902	0.04	17865019	\$714,601	0.025	299177038	\$7,479,446	0.05	14749608	\$737,480	0.05	98446920	\$4,922,346	0.08	219418752	\$17,553,500	0.08	280457607
PERCENT	100.00%			1.33%			13.89%			1.37%			9.14%			32.60%		41.67%
REFUNDS	\$6,636,074																	
EXEMPT DISTRIBUTIONS	\$4,760,225			\$2,379			\$2,725,956			\$125			\$1,367,118			\$21,467		\$663,161
GOVERNMENT	\$10,509	0.04	4025	\$161				0.05	339	\$17	0.05	3180	\$159	0.08	201108	\$16,089	0.08	51037
RENTALS	\$446,220													0.08	150	\$12	0.08	5579041
OTHER	\$4,312,382	0.04	55445	\$2,218	0.025	109038227	\$2,725,956	0.05	2154	\$108	0.05	27339182	\$1,366,959	0.08	67078	\$5,366	0.08	2659689
USE CONVERSIONS	\$1,855,849			\$0			\$227			\$440			\$16,719			\$123,281		\$1,715,162
TO MARINE	\$16,276													0.03	18260	\$546	0.03	922610
TO OFFSHORE	\$1,025,095				0.005	45404	\$227	0.03	14667	\$440	0.03	557200	\$16,719	0.06	2045579	\$122,735	0.06	28037699
TO JET	\$5,249																0.055	95410
REFUNDS	\$11,341,774																	
EXEMPT DISTRIBUTIONS	\$659,977			\$0			\$0			\$0			\$26,326			\$7,858		\$635,794
GOVERNMENT	\$1,567													0.08	32087	\$2,567	0.08	\$0
RENTALS	\$11,616													0.08		\$0	0.08	7776230
OTHER	\$45,743										0.05	526526	\$26,326	0.08	66139	\$5,291	0.08	177200
USE CONVERSIONS	\$1,671,745			\$0			\$0			\$0			\$0			\$216,473		\$10,455,323
TO MARINE	\$4,058													0.03	135033	\$4,051	0.03	233
TO OFFSHORE	\$10,687,737													0.06	3540361	\$212,422	0.06	174255259
TO JET	\$0																0.055	\$0
TOTAL DEBITS AND CREDITS	\$17,977,648			\$2,379			\$2,726,183			\$565			\$1,416,163			\$369,074		\$13,469,420
NET TAX	\$15,060,174			\$712,222			\$4,753,263			\$736,916			\$3,512,163			\$17,184,422		\$8,967,128
PERCENT	100.00%			1.99%			13.25%			2.05%			9.79%			47.91%		25.00%

Motor Fuel Taxes

Taxes in Alaska are levied on aviation fuel (4¢ on gas, 2.5¢ on jet) on marine fuel (5¢ on gas and diesel) and on highway fuel (8¢ on gas and diesel, 2¢ for off-highway uses).

Under the Alaska fuel tax system a number of fuel uses are exempt from tax. Sales to government agencies and sales of home heating oil are two examples. Most such exemptions are made outright. However, some fuel is initially taxed but because it is ultimately consumed in an exempt use the tax is fully refunded. In addition, fuel may initially be taxed at one rate but a refund or credit subsequently granted because the fuel is consumed in a use which carries a lower tax. Highway gas, can be used in an outboard motor. In this case the user can apply for a 3 cent per gallon refund, the difference between the highway and marine rates. It is important to understand the refund aspect of the fuel tax system as it has a great influence on the revenue productivity of that system. Consider these figures by fuel category for FY 86:

The table makes a comparison between the nominal revenues for those distributions initially treated as taxable, the levels of refunds and credits for each fuel type and finally shows the net tax collected. For instance the figures for other diesel can be read as follows:

1. Out of 663,699,517 gallons distributed, 280,457,607 gallons were originally put into the taxable category. The remainder went to uses exempt from the tax.
2. Subsequently an additional 8,289,767 gallons were exempted causing \$663,181 to be refunded while 7,947,430 gallons were exempted yielding credits on other fuel taxes owed of \$635,794.
3. Substantial gallonage was consumed in uses carrying lower tax rates than the nominal 8¢ per gallon figure for this category of fuel. Refunds of \$1,715,182 and credits of \$10,455,323 were created through this use conversion.
4. Out of \$22,463,609 in revenues that would have accrued if all taxable distributions were subject to the 8¢ rate, \$8,967,129 was the ultimate tax.

The purpose of this illustration is not to pass judgment on the credit/refund system. To the extent that fuel taxes for some uses (e.g. highway gas) are viewed as indirect payments for the use of publicly constructed facilities (e.g. streets and highways) then it is reasonable that a consumer not pay for this benefit when the fuel use is unrelated (e.g. running a chain saw). The illustration does, however, show how important refunds and credits are to the total fuel tax system. For instance, if total distributions of all fuel types (1,601,424,762 gallons) were the tax base, a tax rate of about 2.2 cents per gallon would raise revenues equivalent to the \$35,866,134 raised in FY 86.

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To summarize, discussions on ways to increase fuel tax revenues need to be based on more than a simple adjustment of nominal rates. The system of refunds and credits also needs to be considered.

Efficiency and Equity

Fuel taxes are somewhat defensible on efficiency grounds when viewed as indirect user charges paid to cover construction and maintenance of publicly built highways, airports and harbors. Generally these taxes are criticized on equity grounds.

How the burden of motor fuel taxes is distributed depends on what proportion of income is allocated to consumption of motor fuels at various income levels. Consequently, if fuel taxes represent a larger portion of income for low income groups than for high income individuals the tax would be regressive. Phares in his book Who Pays State and Local Taxes finds the motor fuel tax to be quite regressive with average effective tax rates of 2.25% for the under \$3,000 income class falling to .45% for those classes with incomes over \$35,000.

To the extent that the fuel tax is in accord with benefits received the regressive nature of the tax is of less concern. However if the connection to benefits is unclear then the regressive impact is important particularly given the necessity of the journey to work for low income families.

Elasticity

A number of factors in addition to income will influence how revenues from fuel taxes will respond to future changes in personal income. This is true nationally as well as in Alaska where the problem is complicated by uncertain economic conditions.

Nationally, rapid economic growth in 1984 ended a record 5 year downward trend in petroleum product consumption. Uncertainties about petroleum supplies and prices provided incentives for conservation, fuel switching and fuel efficiency improvements. Similarly, the falling oil prices and large inventories of the past year will work to reduce such conservation incentives. OPEC's recent efforts to control production, if successful, will translate into higher prices for petroleum products and will rekindle efforts at fuel conservation. These general uncertainties, combined with Alaska's economic problems, make it difficult to determine how this revenue source will behave in future periods.

It is important to keep in mind that Alaska's motor fuel taxes are expressed in tax per unit terms rather than ad valorem or percentage of value terms. The real tax per gallon is, as a consequence, declining over time. The present 8¢ per gallon tax on highway gasoline (other gas)

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was first levied in 1970. At that time the Anchorage Consumer Price Index (CPI) was at 109.6. For 1985 the same index had increased to 275.4. Expressed in 1970 dollars the real tax rate on gasoline in 1985 was slightly over 3¢ per gallon. In fairness it needs to be pointed out that the refund for off-highway use was set that same year at \$.06 per gallon. It too has declined dramatically in real terms. At present the lowest tax for gasoline among the 50 states is \$.07 (Missouri) while the highest is \$.18 (Washington).

FISHERIES TAXES

Fisheries Business Tax (AS 43.75)

The fisheries business tax is based upon value to the fisherman by the types of processing operations and the types of fish processed. The tax was substantially increased for all processing types in 1979 with developing commercial fish operations assessed a lower rate to spur development in those species, and floating processors assessed the highest rate in hopes of encouraging permanent shorebased facilities and local employment. In 1986 a shorebased fisheries business tax credit on capital expenditures was enacted to provide an incentive for modernizing facilities and purchasing equipment for development of new fisheries and fishery products. Unfortunately tax credits usually do not generate the economic benefits as initially intended, benefitting the most would be those firms which are financially healthy and in full production. Those firms which are financially distraught and producing little or not at all would receive little or no benefit from tax credits. Furthermore, the credits were not specific in terms of what types of capital expenditures would be allowable as a credit nor was there any provision in the bill which would provide developing species any tax incentive over other species. The present tax credit will be in effect through tax year 1991 and may result in a total estimated loss to the state of approximately \$13.0 million in General Fund unrestricted revenues. However, it should be noted that municipalities will not be affected by the loss in shared revenue since revenue sharing will be calculated on total collections prior to credits. If tax credits were statutorily amended to reflect only specific equipment for only those developing commercial species the state could gain the following estimated revenues:

	<u>FY 88</u>	<u>FY 89</u>	<u>FY 90</u>
Amending Fisheries Business Tax Credit (Millions of Dollars)	1.5	1.5	1.5

Another related topic concerning the fisheries business tax regards the exporting of fishery resources outside of the State's taxing jurisdiction and not filing an Alaska Fisheries Business Tax return. Although some traditional leakages have been closed during the past few years, there still exists a substantial amount of resources illegally avoiding the tax incidence. One possible solution to the problem would require commercial and private air carriers which ship to the lower 48 or overseas to obtain proof of a fisheries business license with any manifest or cargo declaration shipping fishery resources out of state. The carrier would then be subject to substantial fine or payment of the tax due if there was a failure to comply. There are no means possible to accurately predict the amount of leakage; however, past instances which have been documented or have come to light indicate substantial amounts are being illegally shipped out of state. Based on these past events, it is estimated that the following additional revenues could be generated by reducing this leakage:

	<u>FY 88</u>	<u>FY 89</u>	<u>FY 90</u>
Reducing Leakage of Fisheries Business Tax (Millions of Dollars)	1.5	1.5	1.5

Alaska Seafood Marketing Assessment (AS 16.51)

The Alaska Seafood Marketing Assessment is levied upon eligible seafood processors at an elected rate of 0.2% of value. Although the assessment is collected as a gross receipts tax, it is essentially a charge for a governmental service, in this case, the marketing of Alaskan seafood products. Currently, the market assessment funds approximately one-half of the Alaska Seafood Marketing Institute's (ASMI) FY 87 revised budget (\$2.6 million), thus necessitating a General Fund subsidy to cover the difference. If this subsidy was not appropriated each year, the State would realize approximately \$1.4 million annually in General Fund unrestricted revenues. Although by eliminating a source of funding, the industry would have to elect to either keep the current assessment rate with a lowered budget, or vote to double the assessment to a rate of 0.4% (as provided in AS 16.51.120(E)) in order to maintain current ASMI budget levels. It should be noted that the Legislature suggested in the FY 87 operating appropriations bill (Ch. 129, SLA 1986) that "...the ASMI Board schedule a vote of the seafood industry to consider raising the level of the seafood marketing assessment in order to offset anticipated declines in available general funds for FY 88." Accordingly, it would be market forces and industry monitoring which would determine the most efficient funding level for ASMI rather than the political budget process.

	<u>FY 88</u>	<u>FY 89</u>	<u>FY 90</u>
Eliminating the Seafood Marketing Subsidy (Millions of Dollars)	1.4	1.4	1.4

Salmon Enhancement Tax (AS 43.76)

Limited entry holders within qualified regional aquaculture associations elect a levied tax rate of either 2% or 3% of value of salmon. Essentially the State performs collection and regulatory functions for the current four non-profit qualified associations and retains none of the tax receipts for these services. However, the State does collect penalty and interest on the tax returns which offset the current administrative costs. Therefore, there are no current reasonable means to generate additional revenues to the State from this tax source.

In summary, the total additional estimated revenue generated by amending the credit, reducing the leakage, and eliminating the subsidy would amount to the following:

	<u>FY 88</u>	<u>FY 89</u>	<u>FY 90</u>
Total Fish Taxes (Millions of Dollars)	4.4	4.4	4.4

The fisheries business tax is currently inequitable since the assessed tax rates differ due to the method of processing (canned, shorebased, and floating) and the types of species (developing versus traditional). As a result, there is no horizontal equity or neutrality due to this rate differentiation. It should be noted that tax structuring by the type of processing is unique to Alaska. The fisheries business tax must also be considered regressive since it is levied on a commodity which to a high degree is exported outside the state thus passing a significant part of the tax incidence onto the eventual consumer. On the other hand, both the enhancement and marketing tax are elected assessments by those taxpayers who directly benefit from the services provided, and are thus fairly equitable in scope. It should be noted that although sport fishermen will benefit from the stock enhancement and conservation program, they will not be assessed the tax.

Since the fisheries taxes directly depend upon the fisheries resources, there will likely be periods, due to fluctuating market prices and/or catch production, of revenue uncertainty. This can create considerable problems for not only the State but for local municipalities which may depend heavily upon the shared revenues, as well as, play havoc with the budgets of ASMI and the regional aquaculture associations. However, this responsiveness of tax changes to market conditions, or elasticity, can work both ways, being undesirable during poor market conditions but being advantageous during good market conditions and during periods of inflation when the State would be able to receive the same real purchasing power from fish revenues without having to increase

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rates. Therefore, although the fisheries taxes are quite elastic, they are somewhat inefficient due to their inconsistent revenue flow.

In terms of administrative efficiency, the fisheries tax changes would be minimal. There would be no cost involved administratively in reducing the tax credit or eliminating the subsidy to ASMI since all regulatory and compliance areas are already operational. The tax credit would only require a statutory change to be implemented while the subsidy elimination would involve no cost except omission from the appropriations bill. Actual costs would probably be reduced in regards to the tax credits, since there would be less credits claimed. Although there may be a slight increase in governmental costs due to additional compliance requirements, in terms of reducing the leakage, the actual costs would be borne by the air carriers and most likely passed on to the consumers of those services in higher rates. Consequently, total State administrative costs would be minimal especially given the expected yield.

Politically, the feasibility of enacting the above changes to the fisheries taxes would appear justifiable based on the current financial condition of the state, since it would provide a means of increasing existing fisheries revenues by approximately 18% without increasing any rates. Although processors would lose some funds due to a reduction in the tax credit, the developing species sector of the industry would still benefit. By eliminating ASMI's subsidy, seafood processors would initially lose some product marketing, however, this could be overcome if the industry deemed it necessary. Finally, by reducing the leakage, it would require that all taxpayers would each pay their fair share of the tax burden.

Licenses and Permits

Licenses and permits, including corporation/occupational licensing fees (AS 02.05, AS 08.01.99, AS 10.05.35, AS 21.06.90), motor vehicle fees and permits (AS 05.30, AS 28.10.15, AS 42.10), alcoholic beverage licenses (AS 04.10), amusement and gaming fees (AS 43.35) and fishing and hunting licenses (AS 16.05 and AS 16.43), could be increased. If all the licenses and permits were allowed to increase with inflation, the following additional General Fund and Fish and Game Fund amounts would be realized:

	<u>FY 88</u>	<u>FY 89</u>	<u>FY 90</u>
Licenses & Permits (Millions of Dollars)	1.8	3.7	5.6

If revenues from licenses and permits are still considered insufficient, a vehicle license fee could be enacted. The vehicle

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license fee could be levied at the time of registration in lieu of a property or ad valorem tax at a rate of 1% of vehicle market value. The following additional revenues could be generated:

	<u>FY 88</u>	<u>FY 89</u>	<u>FY 90</u>
Vehicle License Fee (Millions of Dollars)	13.5	13.8	14.0

Regulatory licenses and permits are not generally included in a tax study since they are not imposed for the purpose of raising revenue due to being insufficient revenue generators. On the other hand, license and permit charges by the State should be sufficient to recover the direct costs of administering and policing the regulatory activities. Further, all costs should be considered, not merely those directly incurred by government in the production of the service. Regulatory charges must include those indirect costs to society such as, in the case of motor vehicle licenses, the costs of highway construction and maintenance and, in the case of alcoholic beverage licenses, the costs arising out of excessive use of alcohol.

In terms of equity, license and permit charges are not mandatory use taxes, but are dictated by the principle that persons pay for what they get. Thus, a person can be excluded from the benefits of the service if he does not wish to pay for it. Although license and permit charges by the state do not result in inequities to lower income groups, equity standards require that these lower income groups be assured of obtaining and affording these services.

The use of charges where possible instead of financing by taxation is regarded as justifiable when demand for the services has some elasticity, so that the use of hunting and fishing fees aids resource allocation and lessens waste. Even if services may have inelastic demand, charges may be warranted on equity grounds alone, and by the fact that persons or businesses subject to the provisions generally receive benefits from the State of comparable value.

The use of regulatory charges appears to have less adverse effect upon behavior than taxes (which are mandatory in nature) and therefore may appear more palatable politically. Many licenses and permits for Alaska are either already under review or have been recently increased. In an attempt to equalize the operating budget with revenue, the occupational licensing fee structure was revised (Ch. 26 & 37, SLA 1985) to provide the additional required revenue. Both alcoholic beverage licenses and amusement and gaming fees could be slightly increased to be more in line with other states. The current motor vehicle fees are more than comparable with other states with the recent enactment of Ch. 60, SLA 1986 which increased driver licensing fees and vehicle registration

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fees effective September 1, 1986. Finally, non-resident fishing and hunting licenses were increased during the past two years, however, resident fees have not increased since 1977. If additional revenue must be generated by substituting regulatory charges for taxes, then the administrative and regulatory costs should be balanced against the charges to determine the desirability of imposing them.

Revenue Potential
of a
General Sales Tax
December 1986

Prepared by

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INTRODUCTION AND PURPOSE OF STUDY

Current revenue projections for fiscal years 1988 through 1992 indicate that revenues generated by petroleum related activities (Oil and Gas Corporate Net Income Tax, Oil and Gas Property Tax, Oil and Gas Severance Tax and Oil and Gas Royalties) will comprise over 81.5 percent of total unrestricted General Fund Revenues for the period. Therefore, state government is presently very dependent on these sources of revenue. Finding sources of additional revenue is becoming increasingly important.

Prudhoe Bay oil production has already peaked. Total Alaskan production is currently projected to decline from over 1.848 million b/d in fiscal year 1986 to under 400,000 b/d by fiscal year 2005. This represents a compound annual average rate of decline of 7.9 percent.⁽¹⁾ Other North Slope fields which are currently projected to begin producing will only partially offset this decline. These projections are based only on the development of presently known and economically developable reserves. Additional discoveries may be made in the future, but their development as well as the development of some currently known but high cost reserves is highly dependent on the future growth of real oil prices. In addition, these future discoveries may be made on federal OCS lands from which the state would receive little or no revenues. Future petroleum revenues are therefore both exhaustible and highly uncertain.

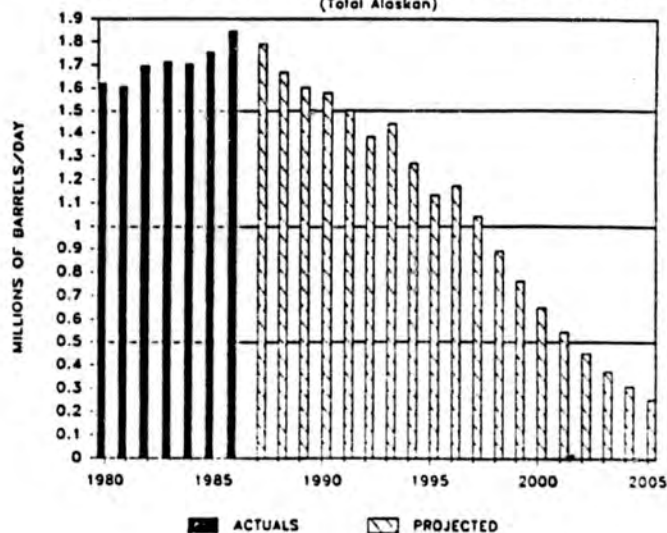
TABLE 1

PETROLEUM PRODUCTIONS PROJECTIONS
(Millions of Barrels/Day)

FISCAL YEAR	TOTAL ALASKAN
1980	1.621
1981	1.609
1982	1.696
1983	1.714
1984	1.704
1985	1.714
1986	1.840
1987	1.842
1988	1.755
1989	1.687
1990	1.520
1991	1.499
1992	1.384
1993	1.207
1994	1.057
1995	1.037
1996	1.095
1997	1.182
1998	1.020
1999	0.895
2000	0.775
2001	0.674
2002	0.593
2003	0.513
2004	0.450
2005	0.384

FIGURE 1

PETROLEUM PRODUCTION PROJECTIONS
(Total Alaskan)



Alaska North Slope oil prices, meanwhile, have dropped from a high in 1981 of \$33.67 per barrel to a 1987 low of \$8.50 (the average is projected to be \$12.59 for the year). These prices have become extremely volatile and difficult to predict. Even if production wasn't declining, this volatility in oil prices and riskiness of oil related revenues could undermine the major source of revenue for this state. To a large extent, this has already happened.

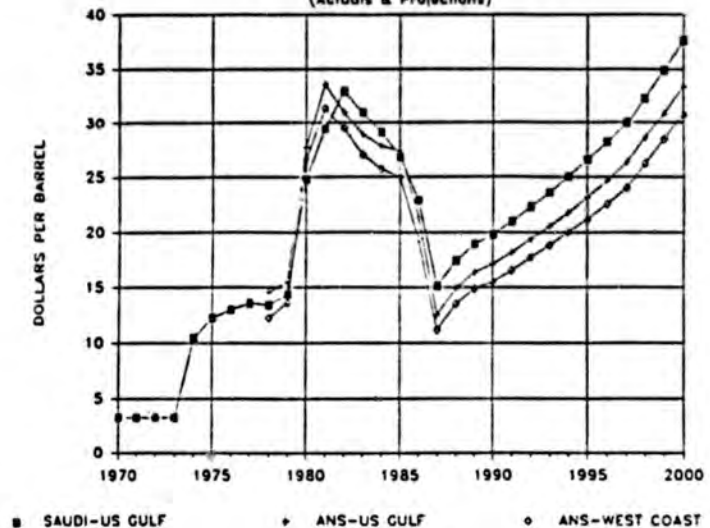
TABLE 2

ACTUAL & PROJECTED CRUDE OIL PRICES
(Dollars per Barrel)

FISCAL YEAR	SAUDI US GULF	ANS US GULF	ANS WEST COAST
1970	3.25		
1971	3.25		
1972	3.25		
1973	3.25		
1974	10.45		
1975	12.30		
1976	13.04		
1977	13.61		
1978	13.46	14.60	12.30
1979	14.41	15.50	13.70
1980	24.75	27.60	26.50
1981	29.45	33.67	31.43
1982	22.99	31.07	29.50
1983	31.05	20.87	27.00
1984	29.10	27.82	25.68
1985	26.80	27.35	24.92
1986	22.90	21.20	19.76
1987	15.15	12.59	11.19
1988	17.39	14.97	13.57
1989	10.95	16.29	14.90
1990	19.77	17.10	15.52
1991	20.76	18.16	16.52
1992	22.21	19.27	17.70
1993	23.62	20.52	18.02
1994	25.03	21.09	19.02
1995	26.55	21.18	21.29
1996	28.10	24.67	22.57
1997	29.92	26.20	24.01
1998	30.76	28.60	26.18
1999	34.91	30.95	28.56
2000	37.62	33.45	30.07

FIGURE 2

CRUDE OIL PRICES
(Actuals & Projections)



The purpose of this study is to develop a model that will allow us to evaluate the revenue potential and burden of general sales tax proposals presented by Legislative and Executive policy makers. We have presented alternative structures here primarily for illustrative purposes, and in no way wish to suggest these are proposals of this Department or section. The value of these alternatives is comparative, illustrating the way different structural elements in a tax can be altered to obtain various results, and to show what scope of information it is possible to generate in response to a proposal. We have evaluated the advantages and disadvantages, as well as preliminary estimates of fiscal impact, for each of our illustrative general sales tax alternatives in order to suggest what kinds of questions could be asked about various proposals.

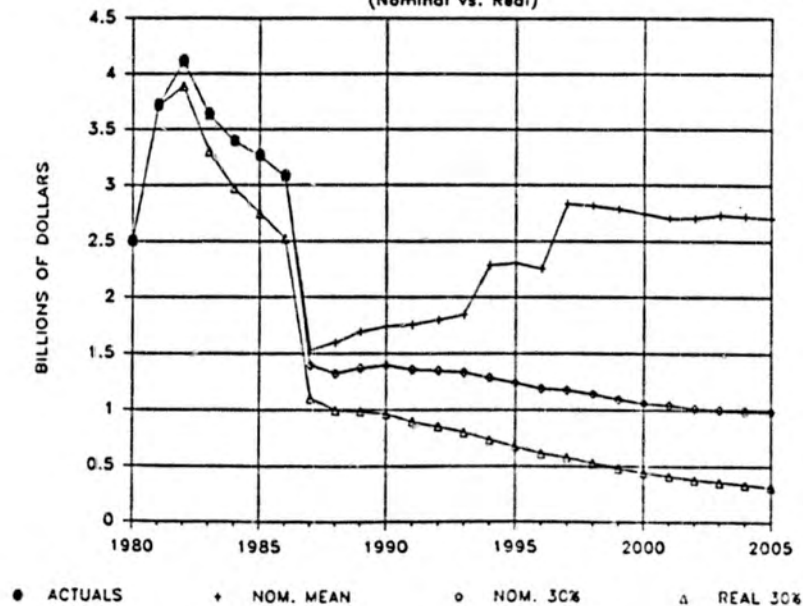
It should be noted at the outset, that it will be practically impossible to replace petroleum revenues with taxes on individuals or other industrial sectors given the present structure of the Alaskan economy. In fiscal year 1984 the gross wellhead value of North Slope oil production was approximately \$10.6 billion⁽²⁾ while the estimated gross production of all other nongovernmental industrial sectors was only \$8.7 billion and total disposable personal income was \$6.8 billion. In addition, oil production has been high profit sector and thus supported much higher levels of taxation than other more marginal industrial sectors. Also, many other industries are currently supported, directly and indirectly through state government spending of oil revenues.

TABLE 3
GENERAL FUND UNRESTRICTED REVENUE PROJECTIONS
(Nominal vs. Real)

FISCAL YEAR	ACTUALS	ESTIMATES MEAN CASE (NOMINAL \$)	ESTIMATES 30 % CASE (NOMINAL \$)	ESTIMATES 30 % CASE (REAL \$/1981)
1980	2.501			
1981	3.710			3.710
1982	4.108			3.891
1983	3.631			3.290
1984	3.390			2.968
1985	3.260			2.746
1986	3.076			2.523
1987		1.535	1.399	1.105
1988		1.601	1.325	1.000
1989		1.697	1.374	0.992
1990		1.748	1.398	0.965
1991		1.763	1.359	0.897
1992		1.802	1.349	0.851
1993		1.851	1.334	0.800
1994		2.290	1.287	0.733
1995		2.307	1.241	0.672
1996		2.254	1.191	0.613
1997		2.830	1.178	0.576
1998		2.810	1.143	0.550
1999		2.779	1.098	0.483
2000		2.738	1.063	0.444
2001		2.698	1.045	0.414
2002		2.699	1.020	0.383
2003		2.730	1.004	0.358
2004		2.718	0.997	0.327
2005		2.699	0.909	0.217

FIGURE 3

GENERAL FUND UNRESTRICTED REVENUES
(Nominal vs. Real)



TAX CAPACITY AND TAX BURDEN ON ALASKANS

The assessment of the burden of taxation is a complicated problem. Statutes determine who is legally responsible for a tax. In contrast the economic incidence of a tax is the change in the distribution of private real income brought about by a tax. Different taxes can be shifted to differing extents from the person or business legally responsible to other individuals or businesses.

In less rigorous terms, concepts such as burden are examined by resorting to state-by-state comparisons of taxes paid usually on a per capita basis or in relation to some measure of revenue capacity. Because measures such as per capita income are poor measures of revenue capacity alternative concepts have been developed. One such measure involves the concept of a representative tax system (RTS).⁽³⁾

"The RTS is designed to answer this question: what would be the total revenue of each of the 50 states if every state applied identical tax rates - national averages - to each of 26 commonly used tax bases?"

Tax effort is a companion concept that indicates the overall tax burden placed on the base as defined by the tax capacity concept. A tax effort index is created by dividing the state's actual tax collections by its estimated tax capacity and multiplying by 100.

"The result may be interpreted as a measure of how much a state chooses to exploit all its potential tax bases relative to other states. If a state has a tax effort beneath the national norm, it will have an effort index under 100. Conversely, if a state has a tax effort in excess of the national average, it will have an effort index over 100."

The most current estimates of these ratios is in an Advisory Commission on Intergovernmental Relations publication Tax Capacity of the 50 States. Dated May 1985, the book is based on tax data for 1982. While aged, the numbers are indicative of Alaska's state and local tax burden relative to other states.⁽⁴⁾

Indexes of this sort can often hide subtleties in the underlying relationships. For instance the effort variables are developed using per capita measures which hide the fact that a substantial portion of the tax may be paid by out-of-state visitors or seasonal workers. Alaska, for instance, shows a high effort for hunting and fishing licenses. Although care has to be exercised in their interpretation, the figures indicate that Alaska residents are taxed at relatively low levels on income and sales when compared to residents of other states.

Overall Alaska shows a high tax effort because of our resource based taxes. However, effort measures are considerably below national norms for several major taxes commonly found in other states. Column two below shows the relative importance of major taxes and column three shows Alaska's effort index for these taxes.

<u>Tax</u>	<u>State-Local Tax Collections as % of U.S. Total</u>	<u>Alaska Effort Index 1982</u>
General Sales	23.5%	29.1
Selected Sales	11.7%	102.0
License Taxes	3.5%	118.0
Individual Income	19.7%	.7
Corporate Income	5.6%	95.0
Property	31.8%	105.0
Estate and Gift	.9%	22.9
Severance	3.4%	278.8

GENERAL DESCRIPTION AND STRUCTURE OF RETAIL SALES TAXES

General Sales Tax

A general sales tax could be enacted at the State level. Alaska currently has no sales tax at the State level, however seven boroughs and at least fifty-two smaller municipalities do levy some form of sales tax. The rates levied range from one percent to five percent. The base upon which these rates are levied also varies with different exemptions being allowed in various communities. If a sales tax were enacted at the State level it would be in addition to the tax at the local level, however, it should be noted that Anchorage and Fairbanks, the two most populous municipalities in the State currently have no sales tax.

Currently forty-five of the fifty states levy some form of sales tax at the state level. Sales taxes are a significant source of state government revenues in most of the states which levy them. Sales taxes account for 48.8 percent of all State tax collections. The sales tax base varies considerably as to exemptions allowed and the degree to which services are taxed from one state to another. Food purchases, except restaurant meals and alcohol, are exempt in twenty-eight of the forty-five states. Prescription drug purchases are exempt in forty-three states. Gas and electric utility bills are exempt to some degree in thirty-two states. Five states exempt clothing purchases to some degree. Also, four states allow some credit for sales taxes paid against state income tax liability. These various exemptions and credits are meant to ameliorate the regressive incidence of the sales tax.

Services are taxed very comprehensively including all personal and professional services in only three states. Twenty-five states either tax no services or tax services very narrowly and selectively such as laundry and cleaning or advertising and selected business services. The remaining seventeen states tax services to a considerable degree although not comprehensively with most exempting professional services.

The rates levied on taxable purchases of goods and services also varies considerably from state to state with a low of three percent to a high of seven and one half percent. The median rate levied by states which exempt food is five percent and by those which do not exempt food is four percent.

Retail sales taxes tax consumer expenditure, thereby taxing income at its use, in contrast to income taxes, which taxes income at its source. The basic elements of any tax structure apply to the retail sales tax. These are tax base, rate(s) and credits against tax owed.

Tax Base

Tax base is characterized by what is included, excluded, and deductible from the base. It is also affected by the presence of exemptions from the tax.

Retail sales are the primary base of state and local sales taxes. Sales for resale generally are excluded to avoid problems of multiple taxation. While a general retail sales tax can logically cover services, in most cases services are excluded. Thus, a substantial portion of consumer expenditure is not taxed. A few services are, however, included in the tax bases of some states. These include admissions, lodging and public utility services.

Equity considerations lead some state to exclude particular retail sales from the tax base. The most common exclusions are prescription drugs and food for consumption at home. Some taxing states allow non resident visitors to obtain exemption certificates for sales tax. All sales tax states have use taxes as part of their sales tax structure. These use provisions apply to goods bought outside the state and brought into the state for consumption.

Tax Rates

Tax rates are applied to the tax base. They can be separated into rate groups for various consumer goods. This can be done to help make the tax more equitable, (i. e. taxing goods more highly that are consumed by higher income taxpayers (luxuries and non health services) or taxing subsistence items (basic food purchases, children's clothing or utilities) at low rates or not at all . The tax rate can also be applied differentially for other social policy goals, i. e. to tax goods with high social cost associated with them, such as alcohol, at higher rates, or to tax goods associated with low tax capacity at low rates or not at all, eg. medications and health services.

Tax Credits

Tax credits against tax owed are deducted after the rate is applied to the tax base. Tax credits are available for special expenditures and can be effective in avoiding penalties for or encouraging those qualifying expenditures. Credits can also be used to offset amounts paid to other government; thereby preventing double taxation of the same transactions.

EVALUATION OF ALTERNATIVES

The tables presented in this report summarize only the projected quantitative impacts of two sales tax proposals. Other issues do arise, however. Each of the elements of the tax structure can be tailored to affect different taxpayers differently (or to try and affect them identically). The alternative tax structures we present will each be analyzed briefly on a number of issues including how they affect taxpayer groups, how easily administered they are and how politically palatable they might be.

In general, the issues which should be considered with respect to measures to increase revenues are as follows.

Economic Efficiency: What effect does the proposed tax have on incentives and economic decision making? How does the tax alter consumption, production or resource allocation decisions?

Equity: Who bears the burden of the tax and how does that burden compare with ability to pay or benefits received? Is the tax progressive or regressive with respect to income and/or wealth?

Elasticity: What is the sensitivity of the tax revenue yield to changes in economic or demographic conditions? As income or population increase or decrease, does tax revenue increase or decrease in greater, lesser or equal proportion?

Administrative Efficiency: How costly is the tax to administer in terms of resources devoted to administration and compliance relative to the revenue yield of the tax? Who bears the burden of administrative cost, the taxpayer, the State or the tax collector (if different from the State)?

Political Feasibility: How acceptable is the proposed tax to the legislature and/or the electorate given existing social, political, and economic conditions? Who benefits, who loses, and who has the most political power?

Additionally, we are concerned with three other issues.

Interstate Capture: How much of the tax owed by nonresident taxpayers who work or travel in Alaska is it possible to capture?

Intergovernmental Effects: Does the tax erode the tax base of higher level (federal) or lower level (local) governments? If such erosion should be mitigated, how can it be done? Do higher level or lower level government taxes erode the State tax base? If such erosion should be mitigated, how can it be done?

Inflation Effects: What is the effect of inflation on the elements of the tax structure and the burden on the taxpayer? If this should be mitigated, how can it be done?

Efficiency

As is the case with many other taxes it is difficult to make definitive statements on how different types of sales taxes influence consumer welfare. The public finance literature suggests that it is unlikely that efficiency will require a general sales tax with the same tax rate for each commodity but recognizes the problems involved in differentiating rates among different commodities.

Elasticity

It is difficult to determine precisely how the sales tax will vary over time as income and disposable income changes. An increase in income will have different implications for revenues depending on the distribution of that increase. An increase which goes primarily to high income households may have a significantly different impact than a similar increase distributed mostly to low income groups. The reason is that high income households may at the margin spend only a small fraction of their income on taxable commodities.

With this caveat in mind it can be stated that a broad based retail sales tax is generally a fairly stable source of revenue. Consumption expenditures do not fluctuate as widely as personal income as individuals may alter savings while maintaining consumption over the short term. The yield from the tax should move roughly in proportion to movements in income, population and prices and will likely be less elastic than an individual income tax.

Equity

The conventional view of the distributional effects of a general sales tax is that it is regressive. As annual income rises, the proportion of household income devoted to consumption falls. Hence the amount of tax paid is a higher proportion for low income households.

Two arguments are commonly invoked against this conventional reasoning. First, some argue that the proportion of lifetime (as opposed to annual) income that is devoted to consumption is roughly the same at all income levels. Second, the regressivity argument implicitly assumes that the taxes on a good are borne entirely by the consumers of the good while in reality some shifting does occur.

In an attempt to deal with the regressivity concern some sales tax systems tax certain items consumed intensively by the poor at low rates or exempt these items completely. This is not without problems. For instance, while food expenditures are a large item in the budget of poor people they can also comprise a high proportion of income at higher levels. In addition such selective treatment causes administrative problems such as whether certain items (e.g. soft drinks) are in the favored category (e.g. food). Some states with both income and sales taxes utilize a sales tax credit against income tax liability as a device for dealing with equity concerns.

Administrative Compliance

The main attraction of sales taxes is probably its ease of administration. It is collected from sellers at the retail level which means fewer individuals to deal with than is the case with income taxes.

The main administrative complexities arise when it is unclear if some type of transaction creates a tax liability. Arbitrary distinctions are often made such as taxing food consumed at a restaurant but exempting the same meal if taken home for consumption. Also, tax evasion remains a problem.

In many states which have both state and local general sales taxes some efficiencies are achieved by piggybacking the local tax onto the state system. Compliance costs fall mostly on retailers with some states compensating stores for costs by allowing them to keep some percentage of their tax obligation.

Nonresident Taxpayers

Sales taxes will be paid by nonresident workers and tourists to the extent that they consume goods in the state. Some states such as Washington reduce this payment through issuance of tax exempt cards which apply to purchases which are ultimately consumed out-of-state.

Intergovernmental Effects

Under the new federal tax law state and local sales taxes are no longer deductible. This weakens the sales tax as an alternative to a state income tax as the latter retains its deductible status.

Some concern needs to be given to the effect of a state sales tax on those municipalities which have sales taxes or might adopt such taxes in the future. For instance, the imposition of a four percent state tax on top of a four percent local tax adds substantially to the cost of in-state purchases. Such rates would create incentives for consumers to avoid Alaska taxes by catalogue ordering or combining shopping with vacation or business trips.

Political Acceptability

In terms of political acceptability, sales taxes have been traditionally supported by higher income groups fearing increased property or income taxation. They have been opposed by labor organizations primarily on equity grounds and retailers who feared loss of business and compliance costs. Sales taxes are not as visible as income taxes in that the tax is levied in small bits each time a purchase is made rather than in larger amounts through payroll withholding or payments at year end. Since Alaska has never had a state sales tax, it is questionable whether the legislature would enact such a major new tax on individuals until oil revenues decline significantly.

Discussion of Estimates

The data presented in the table provides an approximation of the revenues which might be realized by a sales tax on differently configured tax bases. Examination of 1985 provides a good bench mark as the next several years will likely show lower levels of receipts and sales because of the economic slow down caused by lower oil revenues.

A one percent tax on retail sales in 1985 would have raised about \$40 million. If all services were taxed, the same one percent rate would generate an additional \$14 million. Finally, a one percent tax on electric utility sales for both residential and commercial customers would realize in the neighborhood of \$3 million. In total then a very broad based sales tax in a good year would have raised about \$57 million. This figure would not include revenues from a use tax and is most certainly an upper bound in the sense that virtually all retail and service transactions are covered. Exclusions of various items would correspondingly lower revenues. For instance, if all sales of food stores were excluded nearly \$9 million less in revenue would be realized. Note that some sales of food stores would likely remain taxable. However, we do not have the data to separate food and non-food sales for such establishments.

Higher tax rates would of course increase revenues. It is probably not valid to assert that a four percent rate would raise four times as much revenue because individuals will make some adaptations to the additional cost of purchased goods and services. Bartering, catalogue purchases and substitution of second hand purchases for new cars or appliances would likely occur.

The second table projects sales tax revenues for a tax based on retail sales. The analysis assumes that retail sales are a constant percentage of personal income for the years covered in the table.

ESTIMATED YIELD OF 1 % SALES TAX
VARIOUS TAX BASES 1985

SIC CODE FOR INDUSTRY	INDUSTRY	ESTIMATED RECEIPTS OR SALES \$	YIELD FROM 1 % TAX \$
RETAIL TRADE:			
52	BUILDING MATERIALS	\$387,270,000	\$3,872,700
53	GENERAL MERCHANDISE	\$462,926,000	\$4,629,260
54	FOOD STORES	\$890,572,000	\$8,905,720
55	AUTO DEALERS (EXCL 554)	\$600,134,000	\$6,001,340
554	GASOLINE SERVICE STATIONS	\$215,048,000	\$2,150,480
56	APPAREL & ACCESSORIES	\$137,886,000	\$1,378,860
57	FURNITURE	\$172,315,000	\$1,723,150
58	EATING & DRINKING	\$547,137,000	\$5,471,370
59	MISC RETAIL (EXCL 591)	\$439,277,000	\$4,392,770
591	DRUG & PROPRIETARY STORES	\$157,031,000	\$1,570,310
	TOTAL RETAIL TRADE	\$4,009,596,000	\$40,095,960
SERVICES:			
70	HOTELS AND LODGING	\$184,503,000	\$1,845,030
72	PERSONAL SERVICES	\$64,985,000	\$649,850
73	BUSINESS SERVICES	\$270,034,000	\$2,700,340
75	AUTO REPAIR GARAGES	\$105,228,000	\$1,052,280
76	MISC REPAIR SERVICES	\$61,727,000	\$617,270
78	MOTION PICTURES	\$12,871,000	\$128,710
79	AMUSEMENT & RECREATION	\$28,092,000	\$280,920
80	HEALTH SVCS EXCEPT HOSPITALS	\$232,111,000	\$2,321,110
81	LEGAL SERVICES	\$136,933,000	\$1,369,330
82	EDUCATIONAL SERVICES	\$8,786,000	\$87,860
83	SOCIAL SERVICES	\$13,089,000	\$130,890
891	ENGR ARCHIT SURVEY	\$247,033,000	\$2,470,330
892	ACCTG AUDIT BOOKKEEPING	\$56,979,000	\$569,790
	TOTAL SERVICES	\$1,422,371,000	\$14,223,710
ELECTRIC UTILITIES			
	RESIDENTIAL	\$150,605,000	\$1,506,050
	COMMERCIAL	\$147,987,000	\$1,479,870

PROJECTED SALES TAX REVENUES
WITH AND WITHOUT SALES OF FOOD STORES
APPROXIMATE YIELD FOR EACH 1 % OF TAX

YEAR	ESTIMATED SALES OF ALL RETAIL ESTABLISHMENTS	YIELD OF 1 % TAX	ESTIMATED SALES IF FOOD STORES EXEMPTED	YIELD OF 1 % TAX
1985	\$4,009,600,000	\$40,096,000	\$3,119,000,000	\$31,190,000
1986	\$3,945,500,000	\$39,455,000	\$3,066,700,000	\$30,667,000
1987	\$3,762,000,000	\$37,620,000	\$2,924,100,000	\$29,241,000
1988	\$3,835,500,000	\$38,355,000	\$2,981,200,000	\$29,812,000
1989	\$3,929,600,000	\$39,296,000	\$3,054,400,000	\$30,544,000
1990	\$4,072,600,000	\$40,726,000	\$3,165,600,000	\$31,656,000
1991	\$4,174,300,000	\$41,743,000	\$3,244,600,000	\$32,446,000
1992	\$4,325,600,000	\$43,256,000	\$3,362,200,000	\$33,622,000

DATA DESCRIPTION, LIMITATIONS AND USE

CENSUS OF RETAIL TRADE

Description of data used in estimates

Each five years the U.S. Department of Commerce undertakes a series of economic censuses. The last census available is that done for 1982. The next census will occur in 1988 for the year 1987. The censuses for Retail Trade and Service Industries for 1982 provided the data for this analysis. While these publications are dated they provide the best available information on level of receipts and sales by industry groupings. The industry groupings are important as they provide a framework for projecting sales and receipts to current levels and also for approximating the impact of excluding particular sales (e.g. food, drugs) from the tax base.

Data for these reports is compiled from administrative records of various federal agencies and from mail surveys. Data is presented for each kind of business or operation classified (unless disclosure rules apply) and includes:

1. Number of establishments
2. Annual sales or receipts
3. Annual payroll
4. First quarter payroll
5. Paid employees for pay period including March 12th

METHOD

GENERAL DESCRIPTION OF MODELLING OR ESTIMATING PROCESS

Methodology for Estimates

Because the census data applies to 1982 it was necessary to develop a procedure which would both update the information and also provide a basis for forecasting future levels of sales and receipts. The procedure involved two steps:

1. Extrapolation to 1985. Because 1985 is the last year with complete data on many major economic variables it serves as the starting point for this analysis. The Alaska Department of Labor prepares the Statistical Quarterly, a publication which presents industry specific data (SIC codes) on a number of reporting units, payroll and average wages. After some refinements for differences in census and labor coverage, labor data for the period 1982-85 was used to estimate 1985 levels of census variables.
2. Projection to future years. The level of retail sales estimated for 1985 was expressed as a percentage of personal income in that year. A separate forecast of personal income for future years was used along with this percentage to approximate the level of retail sales for the forecast period. This approach assumes that the relationship of retail sales to personal income will not vary dramatically. Because there is considerable variation among sales tax states in the treatment of service these values were not projected forward. An examination of the 1985 levels provides an indication of potential revenues obtainable from taxes on various categories of services.

FOOTNOTES

- (1) Petroleum Revenue, Alaska Department of Revenue, December 1986
- (2) Ibid.
- (3) 1982 Tax Capacity of the Fifty States, Advisory Commission on Intergovernmental Relations, May 1985.
- (4) Ibid.

MEMORANDUM

State of Alaska

TO: Vincent D. Wright
Chief of Research
Department of Revenue

DATE: January 10, 1986

FILE NO:

TELEPHONE NO 465-2173

FROM: Mary Ellen Frank, Economist
John Larson, Economist
Bob Elliott, Research Analyst
Dave Tonkovich, Economist
Department of Revenue

SUBJECT: Alternative Means
of Increasing
Revenues

Current revenue projections for fiscal years 1986 through 1988 indicate that revenues generated by petroleum related activities, Oil and Gas Corporate Net Income Tax, Oil and Gas Property Tax, Oil and Gas Severance Tax and Oil and Gas Royalties will comprise over 84 percent of total unrestricted General Fund Revenues for the period. Therefore, state government is presently very dependent on these sources of revenue. In the future as oil production from the Prudhoe Bay field begins to decline, finding sources of additional revenue will become increasingly important. Prudhoe Bay oil production has already peaked and is currently projected to decline from over 1.5 million b/d in fiscal year 1984 to under 300,000 b/d by fiscal year 2000 which represents a compound annual average rate of decline of 10.3 percent. Other North Slope fields which are currently projected to begin producing will only partially offset this decline and total North Slope oil production is currently projected to peak at 1.806 million b/d in fiscal year 1987 and decline thereafter at a compound annual average rate of 10.15 percent with just under 450,000 b/d being produced in fiscal year 2000.⁽¹⁾

These projections are based only on the development of presently known and economically developable reserves. Additional discoveries may be made in the future, but, their development as well as the development of some currently known but high cost reserves is highly dependent on the future growth of real oil prices. In addition, these future discoveries may be made on federal OCS lands from which the state would receive little or no revenues. Future petroleum revenues are therefore both exhaustible and highly uncertain.

The purpose of this memo is to present some alternative means of increasing revenues. Advantages and disadvantages, as well as preliminary estimates of fiscal impact will be outlined for each alternative. It should be noted at the outset, however, that it will be practically impossible to replace petroleum revenues with taxes on

(1) Petroleum Production Revenue Forecast, Quarterly Report December 1985. Alaska Department of Revenue, Petroleum Revenue Division.

individuals or other industrial sectors given the present structure of the Alaskan economy. In fiscal year 1984 the gross wellhead value of North Slope oil production was approximately \$10.6 billion⁽²⁾ while the estimated gross product of all other nongovernmental industrial sectors was only \$8.7 billion and total disposable personal income was \$6.8 billion. In addition, oil production is a very high profit sector and is thus able to support much higher levels of taxation than other more marginal industrial sectors. Also, currently many other industries are supported, directly and indirectly through state government spending of oil revenues, by the oil industry.

The table following on pages three and four summarizes only the projected quantitative impact of these various proposals. In general, the issues which should be considered with respect to measures to increase revenues, i.e., tax law changes are as follows.

Economic Efficiency: What effect does the proposed tax law change have on incentives and economic decision making which may alter consumption, production or resource allocation decisions? Equity: Who bears the burden of the tax and how does that burden compare with ability to pay or benefits received? Is the tax progressive or regressive with respect to income and/or wealth? Elasticity: What is the sensitivity of the tax revenue yield to changes in economic or demographic conditions? As income or population increase and decrease does tax revenue increase or decrease in greater, lesser or equal proportion? Administrative Efficiency: How costly is the tax to administer in terms of resources devoted to administration and compliance relative to the revenue yield of the tax? Who bears the burden of administrative cost, the taxpayer, the State or the tax collector if different from the State? Political Feasibility: How acceptable is a proposed tax law change to the legislature and/or the electorate given existing social, political, and economic conditions? Who benefits, who loses, and who has the most political power?

(2) Ibid.

Summary Table
(Millions of Dollars)

<u>Tax</u>	<u>Change</u>	<u>FY</u>	<u>Projected As Is</u>	<u>With Change</u>	<u>Difference</u>
Individual Income Tax	Reenact	86	-	308.9	+308.9
	Old	87	-	330.0	+330.0
	Law	88	-	352.0	+352.0
Individual Income Tax	Enact New	86	-	86.7	+86.7
	Flat Rate	87	-	88.1	+88.1
	Tax	88	-	89.5	+89.5
	Revenue per One Percent Tax Rate				
Corporate Income Tax	Increase	86	249.8	334.6	+84.8
	Rate In	87	266.4	358.9	+92.5
	Upper Income	88	267.9	360.9	+93.0
	Categories (Both Oil and Gas and non Oil and Gas Corp.)				
Business License Tax	Reinstate	86	2.0	33.7	+31.7
	Gross	87	2.0	38.1	+36.1
	Receipts	88	2.0	40.4	+38.4
	Retain 100%				
	In GF, At	86	2.0	55.9	+53.9
	Old Rates	87	2.0	60.0	+58.0
	and With Flat Rates	88	2.0	64.3	+62.3
Alcohol Tax	Double and	86	14.0	27.1	+13.1
	Add CPI	87	14.0	31.9	+17.9
	Inflator	88	14.1	34.8	+20.7
Cigarette Tax	Add CPI	86	5.7	5.7	+0.0
	Inflator	87	7.8	8.7	+0.9
	Cont. 5¢/ Pack to	88	7.8	9.3	+1.5
	School Fund				

(Millions of Dollars)

<u>Tax</u>	<u>Change</u>	<u>FY</u>	<u>Projected As Is</u>	<u>With Change</u>	<u>Difference</u>
Highway Fuel Tax	Double and	86	22.5	41.2	+18.7
	Add CPI	87	22.5	47.5	+25.0
	Inflator	88	23.0	51.5	+28.5
Aviation Fuel Tax	Double &	86	8.0	15.7	+7.7
	Add CPI	87	8.0	16.3	+8.3
	Inflator	88	8.0	17.6	+9.6
Marine Fuel Tax	Double &	86	4.6	8.7	+4.1
	Add CPI	87	4.7	10.8	+6.1
	Inflator	88	4.7	12.4	+7.7
General Sales Tax	Enact	86	-	40.8	+40.8
	With and	87	-	42.5	+42.5
	Without Food	88	-	44.3	+44.3
	Exemption				
	Revenue Per	86	-	67.9	+67.9
	One Percent	87	-	70.8	+70.8
	Tax Rate	88	-	73.8	+73.8
License & Permits	Add CPI	86	38.3	39.7	+1.4
	Inflator	87	39.4	42.6	+3.2
		88	39.7	45.1	+5.4
	Enact	86	38.3	50.6	+12.3
	1% Vehicle	87	39.4	52.2	+12.8
	License Fee	88	39.7	53.1	+13.4
<u>Individual Income Tax</u>					

The Alaska Net Income Tax AS 43.20.011(a)-(d) could be reenacted to apply to individuals. If this were accomplished with the previous progressive rate schedule unchanged, the following amounts of additional revenue could be generated:

	<u>FY 86</u>	<u>FY 87</u>	<u>FY 88</u>
Individual Income Tax (millions \$)	308.9	330.0	352.0

These estimates are based on the most current REVENUE employment and income projections combined with previously estimated individual income tax equations.

In terms of equity the individual income tax is generally considered the "fairest" tax. The burden or incidence of the tax falls on the individual taxpayer and there is no opportunity for shifting of

incidence as with the corporate income or business type taxes. Given a progressive rate schedule, the tax burden is based on the "ability to pay" principle of taxation and the nominal incidence is progressive. That is, as income level of the taxpayer increases, the nominal tax rate also increases. It should be noted though that state income taxes are deductible when computing taxable income for federal income tax purposes if the individual itemizes deductions. This has the effect of reducing the burden on individuals with higher incomes who are subject to higher marginal rates at the federal level and are also more likely to be in a position to itemize. The effect is to reduce the progressivity of the tax burden at the state level. This effect will be reduced, however, in light of recent scheduled income tax rate reductions enacted at the federal level.

In terms of economic efficiency the effects of the individual income tax on consumption production and resource allocation decisions should be neutral as the tax is applied uniformly to all individuals. However, steeply progressive rates could result in general disincentives to engage in productive economic activity and incentives to shift income to tax sheltered or favored activities. Since the income tax at the state level is small relative to the federal income tax, this effect is not likely to be significant.

The income elasticity of individual income tax revenues, given progressive rates, is greater than one which is to say a given percentage change in income will produce a larger percentage change in tax revenues. Thus, during periods of income growth, individual income tax revenues will increase more than in proportion to the growth and, during periods of income decline, they will fall more than in proportion to the decline. This makes the individual income tax relatively unstable in terms of yield.

Reinstating the individual income tax after dismantling the administrative and compliance functions in the Department of Revenue could involve considerable start up costs. Audit and collection functions would have to be brought back on line. Personnel would have to be hired and trained, computer programs and procedures developed, etc. However, once the initial start up period was completed, administrative and compliance costs similar to previous levels relative to tax collections would probably be achieved.

The Alaska Net Income Tax law as it applies to corporations and as it applied to individuals before those sections were repealed is "piggy backed" on the federal income tax law. This means basically that the starting point for calculating Alaska taxable income is federal taxable income. The Alaska law follows the federal law as far as allowable deductions and exemptions are concerned unless specified otherwise. The state law specifies its own tax rate schedule which is independent of the federal rate schedules. This "piggy backing" has advantages and disadvantages. The advantages are primarily administrative and relate to audit, compliance and collections functions. When the IRS audits returns

and determines that there should be adjustments made they share this information with the state. This lowers the state's audit costs because it reduces the amount of information on a return the state must verify independently. The disadvantage of "piggy backing" is that when federal tax laws are changed relative to deductions and exemptions there may be an impact on state tax collections unless the state changes its tax law accordingly.

An alternative to reenacting the individual income tax as it was previously constituted might be to enact a flat rate tax on individual income allowing for no exemptions or deductions. Such a tax would be relatively simple to audit and would not be tied in any way to federal tax laws. Based on the assumption that the tax base would be individual wage and salary income, proprietor's income and dividend, interest and rental income, current projections of Alaska personal income indicate that such a tax could generate the following amounts of additional revenues per one percent of flat tax rate:

	<u>FY 86</u>	<u>FY 87</u>	<u>FY 88</u>
Individual Income Tax	86.7	88.1	89.5
Flat Rate			
(millions \$)			

These figures show the projected yield from a one percent tax rate so the yield from a higher tax rate can be calculated accordingly.

In terms of equity the incidence of a flat rate no deduction or exemption tax would be proportional with respect to income. That is, as the income level of a taxpayer increases the nominal tax rate remains the same and thus a constant proportion of income is taxed. Also, since no deductions are allowed there is no possibility of lowering the effective rate as is the case under a tax law with a nominally progressive rate schedule but which allows for deductions which can make the effective incidence of the tax much less progressive.

In terms of economic efficiency this type of tax would be more neutral than a progressive tax which allowed for deductions. There would be no incentive to engage in tax sheltered activities and less general disincentive to engage in productive economic activity and thus earn additional income.

The elasticity of the tax would be unitary with respect to income. This means that a given percentage change in income would result in an equal percentage change in tax revenues.

In terms of political feasibility, it is always difficult to reenact a tax after it has been repealed. This is especially so, as in the case of the individual income tax, when the tax was repealed only a short time before and the electorate has just readjusted their expectations accordingly. It is questionable whether the legislature would reenact

any form of the individual income tax unless an extreme fiscal emergency were to arise, such as a severe and prolonged drop in world oil prices.

Corporate Income Tax - Petroleum & Non-Petroleum

Corporate income tax rates could be raised. The existing graduated rate schedule could be extended by adding additional marginal tax rate categories. Presently all taxable income over \$90,000 is taxed at a rate of 9.4 percent for both petroleum and nonpetroleum corporate tax payers under the Alaska Net Income Tax Act, AS 43.20. If additional categories were added such that taxable income between \$1 million and \$4 million would be taxed at 10 percent, taxable income between \$4 million and \$10 million at 11 percent, taxable income between \$10 million and \$100 million at 12 percent, taxable income between \$100 million and \$500 million at 13%, taxable income between \$500 million and \$1 billion at 14% and taxable income over \$1 billion at 15% the following amounts of additional revenues are projected.

	<u>FY 86</u>	<u>FY 87</u>	<u>FY 88</u>
Corporate Income Tax (million \$)	84.8	92.5	93.0

In terms of equity, the corporate income tax is based on the benefit principle of taxation. Corporations benefit from the privilege of doing business in a state and also from government services provided. Therefore, they should pay part of the costs of government. Also, corporations are considered to have an ability to pay taxes separate and distinct from their owners who receive dividends and who are taxed under the individual income tax. This is especially true of modern large scale corporations which command extensive resources and which are controlled by professional managers who may not be equity owners. The actual incidence of the corporate income tax is uncertain and varies among industries and firms depending on market conditions which may constrain shifting of the tax burden. Although the corporation pays the tax, the burden may fall on equity owners, employees, suppliers or consumers of products produced by the corporation. It is, therefore, not possible to say whether the effective incidence is progressive or regressive even with a nominally progressive rate structure. It is possible, however, that at least part of the burden is shifted out of state to nonresident equity owners and consumers. Also, the total burden of state corporate taxes is diminished by the provisions which allow the deduction of state corporate income taxes from taxable income when computing federal taxable income.

The economic efficiency effects of the state corporate income tax should be neutral vis-a-vis consumption and production decisions as it applies uniformly to all corporations. It is possible that extremely high marginal rates could affect locational decisions by industry, all other factors being equal. This is, however, not likely, especially in

Alaska where locational decisions of major industries tend to revolve around proximity to resources.⁽³⁾ Also the state corporate income tax is relatively insignificant when compared to the level of corporate income taxation at the federal level.

The tax yield from the corporate income tax under AS 43.20 is not entirely or even primarily a function of in-state economic activity, i.e., employment, population and income growth. While there are a number of corporate taxpayers who are totally domestic within Alaska, the majority of the tax is collected from multistate nonpetroleum and petroleum corporations. Since these corporations apportion their worldwide income when computing their state tax liability, the elasticity of tax yield relative to economic growth within Alaska is difficult to determine but probably relatively low. That is, the corporate income tax is probably fairly stable relative to changes within the Alaskan economy. Eliminating the recently enacted graduated rate schedule for the lower income categories would tend to make the tax yield even more inelastic, i.e., stable. Continuing the progression of the graduated tax rates to higher income categories into which the petroleum corporate taxpayers fall would tend to increase the elasticity of the tax yield to changes to worldwide petroleum corporation income.

Changing the tax rate schedule would not entail any significant additional administration and compliance costs. It is likely, however, additional resources devoted to audit and collection compliance relative to the corporate income tax would prove cost effective in generating additional collections.

In light of all changes which have been enacted relative to both petroleum and nonpetroleum corporate taxes over the last several years, the political feasibility of enacting another such change should be considered.

Gross Receipts Business License Tax

The gross receipts tax portion of the Alaska Business License Act, AS 43.70, could be reenacted. Currently under AS 43.70 all persons or businesses must purchase annually a business license costing \$25 for the privilege of engaging in a business in the state. Previously, before it was repealed, businesses with certain exceptions paid a tax on their gross receipts equal to one-half of one percent on gross receipts between \$20,000 and \$100,000 and one-quarter of one percent on gross receipts

(3) As reference see the following: State Taxation and Economic Development, Roger J. Vaughan, Council of State Planning Agencies, 1979. Tax Incentives and Capital Spending, Gary From, Ed., The Brookings Institution, 1971.

in excess of \$100,000. If this gross receipts tax were reenacted with previously existing rates, the following additional revenues would be generated:

	<u>FY 86</u>	<u>FY 87</u>	<u>FY 88</u>
Business License Tax (millions \$)	31.7	36.1	38.4

If the gross receipts tax were reenacted but if the previous regressive rate structure were replaced with a flat rate of one-half one percent on all gross receipts in excess of \$20,000 the additional revenues would be as follows:

	<u>FY 86</u>	<u>FY 87</u>	<u>FY 88</u>
Business License Tax (millions \$)	53.9	58.0	62.3

It should also be noted that the previous gross receipts tax was shared back 60 percent to local incorporated areas where the receipts were earned. If this aspect were also reenacted, the net to the state would be approximately 40 percent of the above amounts.

In terms of equity, the ultimate incidence or burden of the gross receipts business license tax is uncertain due to possible shifting, as is the case with the corporate income tax. The burden may rest variously on the business equity owners, employees, suppliers or consumers. Therefore, the relative progressivity of the tax burden is difficult to determine. However, it should be noted that the previously existing rates were nominally regressive in and of themselves. Part of the burden is probably exported out of state to nonresident owners and consumers. This tax is supposedly levied on a business for the privilege of doing business in the state. However, it has little justification under either the ability to pay or benefit principles of taxation. Under a net income tax both the ability to pay and the benefit a business derives from doing business in the state are considered. Net income, however, is not necessarily a function of gross receipts. A gross receipts tax discriminates against high volume-low profit or low per unit profit operations, especially those which cannot easily shift the tax to consumers due to competition.

If a gross receipts tax is applied uniformly to all business, it should not distort consumer choices or resource allocation. If the rates, however, were increased much above the previous low levels, the tax could have a significant negative effect on marginally profitable businesses.

The elasticity of the tax yield under a gross receipts tax is uncertain. Sales in some industries are more sensitive to economic

expansion and contraction than others, so overall industry composition would affect elasticity. Also, the rate structure has some effect. Under the previous regressive rate structure, the revenue yield would be less elastic than if a flat rate structure were enacted.

Administration of a reenacted business license gross receipts tax would pose no major problems. The business license fee has been kept in effect so the Department has kept track of potential business taxpayers. Some start up, hiring and retraining, costs would be incurred. Also, additional audit and collection resources may have to be devoted especially if rates were increased significantly.

Politically, reenactment of the gross receipts tax is very questionable. The tax was always very unpopular due mainly to equity considerations mentioned above.

Selective Sales and Excise Taxes
Alcoholic Beverage Excise Tax and Cigarette Tax

The excise tax rates under the Tobacco Tax, AS 43.50, and the Alcoholic Beverage Tax, AS 43.60, could be increased. If the alcohol tax rate was doubled and allowed to increase with inflation, the following additions to revenue would result (assuming an annual inflation rate of 5.5 percent in FY 86 and 6.0 percent in FY 87):

	<u>FY 86</u>	<u>FY 87</u>	<u>FY 88</u>
Alcohol Tax (million \$)	13.1	17.9	20.7

The initial increases which would be equal to the present rates per six pack of beer would be 20¢, per liter of wine would be 22¢, and per fifth of liquor would be \$1.12. These would increase with inflation, so by 1987 the cost difference attributable to tax increases would be 24¢ per six pack of beer, 28¢ per liter of wine, and \$1.38 per fifth of liquor.

If the cigarette tax was allowed to increase with inflation, and the contribution amount per pack to the School Fund held constant at 5¢ per pack, the following additional General Fund amounts would be realized:

	<u>FY 86</u>	<u>FY 87</u>	<u>FY 88</u>
Cigarette Tax (millions \$)	0.0	0.5	1.5

If the contribution rate to the School Fund was held to a constant 5/8 ratio, the above estimates would drop by about 70 percent. The initial increase which would be equal to the present rate per pack of cigarettes times the CY 85 expected inflation rate of 4.0% or 8.32¢. This would rise with inflation to almost 9.1¢ in 1988.

Selective sales taxes on alcoholic beverages and cigarettes are usually justified on two grounds. First, they are sumptuary in nature. They are said to be levied so as to reduce consumption of products which are considered harmful to individuals, especially when consumed in excessive quantities. In practice, however, due to inelastic demand and strong individual preferences for these products, these taxes are not high enough to have this effect. Second, these taxes are said to be justified due to the social costs imposed on society as a whole by drinkers and smokers; auto accidents, crime, alcohol rehabilitation, lung disease, etc. Rates could, therefore, be based on estimates of these social costs. The incidence of these taxes is regressive on consumers of alcohol and tobacco. That is, alcohol and tobacco expenditure represent a relatively larger proportion of income for lower income smokers and drinkers than for those with higher incomes. In addition, these taxes discriminate against individuals based on personal preferences and against businesses which sell these taxed commodities.

In terms of economic efficiency, these taxes have the effect of making alcohol and tobacco relatively more expensive as compared to other commodities, thus altering consumer choices and resource allocation. However, due to inelastic demand for these products, this effect is probably not very great.

As mentioned above, the demand for alcohol and tobacco products is inelastic relative to price. Thus an increase in the tax rates on these products would have a relatively small effect on consumption and the tax yield would increase almost proportionately to the rate change. Tobacco consumption is almost totally a function of population size and tastes. A certain percentage of the population is going to smoke regardless of the price they have to pay, within reason of course. So as population size increases the yield from the tobacco tax should show a stable increase relative to population. Alcohol consumption is also a function of population and tastes, but income also plays a role. As income increases, there is a tendency for individuals to consume more liquor and wine as opposed to beer which are taxed at higher rates. This effect causes the elasticity of the alcohol tax to be greater relative to income.

As the alcoholic beverage tax and the tobacco tax are already in place, changing the tax rates would not increase administration or compliance costs.

The political feasibility of increasing excise taxes on alcohol and cigarettes is uncertain. If increases in rates were tied to estimated social or even governmental costs resulting from smoking and drinking, it might be possible to convince legislators of the validity of such a rate change. However, given the high per capita consumption of these products especially alcohol in Alaska, it is doubtful that a rate increase would be very popular. It should be noted, however, that the rates on alcohol

were increased by approximately 40 percent, from 25¢ to 35¢ per gallon of beer, from 60¢ to 85¢ per gallon of wine and from \$4.00 to \$5.60 per gallon of liquor in July 1983. The legislature enacted these rate changes partly in response to consideration of the increasing social costs of alcohol consumption.

Selective Sales and Excise Taxes
Motor Fuel Tax

If all fuel taxes were doubled and allowed to increase with inflation, the following additions to revenue would result:

	<u>FY 86</u>	<u>FY 87</u>	<u>FY 88</u>
(Million \$)			
Highway Fuel Tax	18.7	25.0	28.5
Aviation Fuel Tax	7.7	8.3	9.6
Marine Fuel Tax	4.1	6.1	7.7

In terms of equity, the Highway Fuel Tax is based on the benefit principle of taxation. An individual's consumption of fuel is generally proportional to their use of state highways and roads and the benefit they derive from state highways and roads is proportional to their use. Thus, the highway fuel tax is usually considered to be a tax in lieu of a charge as it would not be practical to set up every state highway or road as a toll road. The existing tax rates do incorporate a partial refund for off highway use of fuel as in the case of construction, logging, or recreational use. Aviation and marine fuel are taxed at different rates also. The incidence of the tax is on both consumers of highway fuel and consumers in general. A portion of the tax is paid by business on the fuel they use in producing goods and services and is passed on to consumers in general. A common incidence assumption is two-thirds on consumers of fuel and one-third on consumers in general. The incidence is also regressive as fuel expenditures represent a larger percentage of income for low income as compared to high income taxpayers. Part of the incidence is shifted out of state to nonresident tourists who consume fuel within Alaska.

In terms of economic efficiency this tax has the effect of making fuel relatively more expensive as compared to other commodities, thus altering consumer choices and resource allocation. This could be considered a partial justification for the tax as it could encourage conservation of scarce petroleum resources.

In practice the demand for fuel is fairly inelastic relative to price changes over the short term and within a reasonable price range. Thus the yield from this tax should be fairly stable and increase proportionally to any rate increase. Although as we have seen from recent national and worldwide fuel consumption trends, over the long

run demand for fuel is responsive to price changes and the level of the economy in general. The current worldwide over supply of petroleum is due partly to conservation measures in the major consuming nations. As population in Alaska increases, the highway fuel tax should show a proportional increase and yet it should be relatively insensitive to short term changes in income levels.

The administrative and compliance organizations are already in place and changing the rates would not entail any additional costs.

The political feasibility of rate changes in the highway fuel tax should be considered in light of the current decline in fuel prices due to worldwide excess supply of petroleum products relative to demand. Any rate changes could be based on estimated revenue requirements related to state construction and maintenance of highways and roads.

General Sales Tax

A general sales tax could be enacted at the State level. Alaska currently has no sales tax at the State level, however seven boroughs and fifty-nine smaller municipalities do levy some form of sales tax. The rates levied range from one percent to five percent with six percent being the maximum a municipality is allowed to levy under AS 29.53.415. The base upon which these rates are levied also varies with different exemptions being allowed in various communities. If a sales tax were enacted at the State level it would be in addition to the tax at the local level, however, it should be noted that Anchorage and Fairbanks, the two most populous municipalities in the State currently have no sales tax.

Currently forty-five of the fifty states levy some form of sales tax at the state level. Sales taxes are a significant source of state government revenues in most of the states which levy them. The sales tax base varies considerably as to exemptions allowed and the degree to which services are taxed from one state to another. Food purchases, except restaurant meals and alcohol, are exempt in twenty-eight of the forty-five states. Prescription drug purchases are exempt in forty-three states. Gas and electric utility bills are exempt to some degree in thirty-two states. Five states exempt clothing purchases to some degree. Also, nine states allow some credit for sales taxes paid against state income tax liability. These various exemptions and credits are meant to ameliorate the regressive incidence of the sales tax. Services are taxed very comprehensively including all personal and professional services in only three states. Twenty-five states either tax no services or tax services very narrowly and selectively such as laundry and cleaning or advertising and selected business services. The remaining seventeen states tax services to a considerable degree although not comprehensively with most exempting professional services. The rates levied on taxable purchases of goods and services also varies

considerably from state to state with a low of three percent to a high of seven and one half percent. The median rate levied by states which exempt food is five percent and by those which do not exempt food is four percent.

In examining the revenue yield from sales taxes per one percent of tax rate in various states relative to the state's personal income the major distinguishing factor seems to be whether food is exempted from the tax base. In states exempting food the sales tax yield as a percent of personal income per one percent of tax rate averages about 0.45 percent. In states not exempting food the sales tax yield averages about 0.75 percent of personal income per one percent of tax rate. It should be noted that there is considerable variation in the yields within the two groups of states depending on the taxation of services, the allowances for exemptions, the level of tourist activity and the absolute level of per capita personal income. With regard to Alaska the last two factors are of particular interest and may tend to offset one another. Since Alaska has a comparatively high level of tourist activity relative to its population and personal income it would be expected that the yield ratio from a sales tax compared to personal income would tend to be higher than average. However, since Alaska has comparatively high per capita personal income the percentage of personal income spent on taxable consumption purchases and hence the yield ratio from a sales tax relative to personal income would tend to be lower than average. Thus for purposes of estimating the probable yield from a sales tax the average values above were used.

Based on current projections of Alaska personal income the probable revenue yield from a one percent sales tax would be as follows:

	<u>FY 86</u>	<u>FY 87</u>	<u>FY 88</u>
Sales Tax Revenue (millions \$)	40.8-67.9	42.5-70.8	44.3-73.8

The two figures shown for each year represent point estimates of the probable sales tax revenues with and without a food exemption. Also note these figures are for a one percent tax rate so the yield from a higher tax rate can be calculated accordingly.

In terms of equity, the incidence of a retail sales tax is on the individual and business consumers of the taxed goods and services. There is no opportunity for shifting incidence of purchases by individuals. However the portion paid by businesses will ultimately be shifted to consumers of the goods and services those businesses produce. At least part of the burden will be exported to nonresident tourists who make purchases within the state. This can be a significant factor in states with large tourist industries. The incidence relative to income is regressive as the tax is levied on consumption and low income individuals consume a greater percentage of their income. Also the fact that sales

taxes are deductible when computing taxable income for federal income tax purposes combined with progressive income tax rates has the effect of making the effective incidence of the sales tax even more regressive. Sales taxes also discriminate against individuals on equal income levels who have higher than average consumption due to family size or taste. Thus the sales tax exhibits some inequity both vertically between income levels and horizontally across given income levels. The regressivity of the sales tax has been ameliorated in many states by either exempting food or other necessity purchases from the sales tax or allowing individuals to claim a credit against their state income tax liability. Finally, it should be noted that in a relatively affluent society in which most individuals are consuming at levels far above subsistence, the regressivity of the sales tax may not be a significant factor as far as equity is concerned. This is probably the case in urban Alaskan communities but may not be for some rural/bush areas.

If a general retail sales tax is levied at a uniform rate on all goods and services and is applied to a broad base it should not distort consumer choices or alter resource allocation. Therefore, as concerns economic efficiency, the tax should be neutral. For this reason as well as for administrative and compliance reasons, it is preferable to address the regressivity of the sales tax by allowing individuals to claim a credit against their state income tax liability (if one exists) rather than to grant specific exemptions to certain commodities such as food.

The yield from a retail sales tax is usually fairly stable especially if it is broad based. This is because consumption expenditures are fairly inelastic relative to short term fluctuations in personal income. Individuals tend to hold their consumption at a certain level and allow their savings to vary in the short term. As income, population or prices increase over time the yield from a flat rate sales tax should increase proportionally. If, however, real per capita personal income increases substantially over time, the percentage of personal income spent on taxable consumption as opposed to savings and investment may decline. Thus it can be said that the revenue yield from a flat rate sales tax is relatively inelastic as compared to the yield from a progressive rate individual income tax.

In terms of administrative efficiency, the enactment of a completely new tax at the state level would entail considerable start up costs. In states with well established sales tax procedures, administration costs run about two percent of sales tax collections. In addition, many states also compensate retailers, upon whom the major burden of compliance and collection falls, between one and five percent of collections. Cost in Alaska could be higher due to Alaska's relatively small population size and large geographic area as well as high start up costs. With a sales tax there is a smaller number of taxpaying units (retailers) than with an individual income tax and so, to some extent, administration and compliance costs tend to be lower. Sales taxes, however, do require extensive audit and delinquency programs especially if there are exemptions from the tax base such as food which provide an opportunity

for tax cheating. Alaska currently has some communities with local sales taxes; however, they vary widely in both rate and base. One administrative option would be for the state to collect both local and state sales taxes and return the local portion. This would necessitate consistency in tax base but may allow some local communities to lower their tax rate and still collect the same amount of revenues as the base would be broadened. This option would slightly increase administrative costs to the state compared to without sharing and localities would lose some discretion over their own tax structure.

In terms of political acceptability, sales taxes have been traditionally supported by higher income groups fearing increased property or income taxation. They have been opposed by labor organizations primarily on equity grounds and retailers who feared loss of business and compliance costs. Sales taxes are not as visible as income taxes in that the tax is levied in small bits each time a purchase is made rather than in larger amounts through payroll withholding or payments at year end. Since Alaska has never had a state sales tax, it is questionable whether the legislature would enact such a major new tax on individuals until oil revenues decline significantly.

Licenses and Permits

Licenses and permits, including corporation/occupational licensing fees (AS 02.05, AS 08.01-.99, AS 10.05-.35, AS 21.06-.90), motor vehicle fees and permits (AS 05.30, AS 28.10-.15, AS 42.10), alcoholic beverage licenses (AS 04.10), amusement and gaming fees (AS 43.35) and fishing and hunting licenses (AS 16.05 and AS 16.43), could be increased. If all the licenses and permits were allowed to increase with inflation, the following additional General Fund and Fish and Game Fund amounts would be realized:

	<u>FY 86</u>	<u>FY 87</u>	<u>FY 88</u>
Licenses & Permits (millions \$)	1.4	3.2	5.4

If revenues from licenses and permits are still considered insufficient, a vehicle license fee could be enacted. The vehicle license fee could be levied at the time of registration in lieu of a property or ad valorem tax at a rate of 1% of vehicle market value. The following additional revenues could be generated:

	<u>FY 86</u>	<u>FY 87</u>	<u>FY 88</u>
Vehicle License Fee (millions \$)	12.3	12.8	13.4

Regulatory licenses and permits are not generally included in a tax study since they are not imposed for the purpose of raising revenue due to being insufficient revenue generators. On the other hand, license and permit charges by the state should be sufficient to recover the direct costs of administering and policing the regulatory activities. Further, all costs should be considered, not merely those directly incurred by government in the production of the service. Regulatory charges must include those indirect costs to society such as, in the case of motor vehicle licenses, the costs of highway construction and maintenance and, in the case of alcoholic beverage licenses, the costs arising out of excessive use of alcohol.

In terms of equity, license and permit charges are not mandatory use taxes, but are dictated by the principle that persons pay for what they get. Thus, a person can be excluded from the benefits of the service if he does not wish to pay for it. Although license and permit charges by the state do not result in inequities to lower income groups, equity standards require that these lower income groups be assured of obtaining and affording these services.

The use of charges where possible instead of financing by taxation is regarded as justifiable when demand for the services has some elasticity, so that the use of hunting and fishing fees aids resource allocation and lessens waste. Other services not so easily subject to waste may have an inelastic demand, but charges may be warranted on equity grounds alone and by the fact that persons or businesses subject to the provisions generally receive benefits from the state of comparable value.

The use of regulatory charges appears to have less adverse effect upon behavior than taxes (which are mandatory in nature) and therefore may appear more palatable politically. However, most licenses and permits for Alaska are either already under review and recently increased or comparable with charges in other states. In an attempt to equalize the operating budget with revenue, the occupational licensing fee structure was revised (Ch. 26 & 37, SLA 1985) to provide the additional revenue required. Currently the fee structure is under review and new fees will be implemented in the future. Both alcoholic beverage licenses and amusement and gaming fees could be slightly increased to be more in line with other states; however, current motor vehicle fees are all comparable with other states. Finally, fishing and hunting licenses were increased during the past two years, especially those regarding non-resident licenses. If additional revenue must be generated by substituting regulatory charges for taxes, then the costs must be balanced against the gains from the use of charges to determine the desirability of imposing them.

Oil Price
* State Tax Policy Bill



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Oil industry taxation: A history of instability

Alaska Legislature increased taxes during 1970's, as oil prices shot up

In the 1980s . . . a new environment

By Tim Bradner

The year was 1964. Offshore oil had just been discovered in Cook Inlet. As a state, Alaska was just five years old. There was little commercial or industrial tax base, a widespread population, an undeveloped economy and serious public service problems. Federal transfer payments - a financial bridge for the young state government - were due to run out that year. Without bonus payments from state oil lease sales and shared oil royalties from the federally-owned Swanson River oilfield, Alaska would have been broke. People worried about the state budget being too dependent on oil. In the state legislature that year, a proposal was made to increase the state severance tax on oil, from one to three percent. It was the start of a long process. Today, 21 years later, the state severance tax (a percentage of value tax applied at the "wellhead", or

where the oil is "severed" from the reservoir) is 15 percent. There are, in addition, other state taxes, just for oil: A 20-mill state property tax on oil production and pipeline facilities, and a special corporate income tax that treats oil companies differently than other Alaska businesses. Other oil taxes have come and gone. In 1975, Alaska adopted a special "reserves tax" on oil in the ground to help bridge a revenue gap until oil production started on the North Slope in 1977. That tax hit Sohio particularly hard during years when the company was raising money to finance its share of the pipeline and field development costs. It was in effect only until 1978, but that year the legislature enacted a new kind of income tax, known as "separate accounting", that substantially increased taxes on oil production. Legislators repealed separate accounting in 1981 in the face of growing concerns about litigation. They replaced it with a new income tax that went partway back to the pre-1978 system. At the same time, the severance tax was raised again, this time to 15 percent. Controversy over the 1981 tax changes - which amounted in net effect to a first ever tax *decrease* for the oil industry - has continued since 1981. This year, in the face of oil price and state revenue declines, oil taxes may again be on the legislature's agenda.

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Alaska's royalty oil policy: Should the state be in the oil business?

By Mike Bradner

Editor's Note: Mike Bradner is a long-time Alaskan writer on Alaska policy and is a former Speaker of the Alaska House of Representatives.

The State of Alaska is in the oil business. It is not only a big oil landowner, it is also a big oil producer, and now the State is becoming a big oil wholesaler on the U.S. west coast. The west coast market "pecking order" is Arco, Exxon, and, Sohio; with Arco and Exxon getting the top positions because they feed their own west coast market and refining systems, while Sohio sells North Slope crude oil in the west coast open market. Last

April the State directly entered the west coast market with 90,000 barrels a day of competitively marketed royalty oil.

Playing in the open market

The State of Alaska is no longer simply a marketer of oil for its own internal development purposes, rather it is generously providing its royalty oil as crude oil feedstock for Alaska-based refineries like Tesoro and Chevron on the Kenai Peninsula and Mapco in Fairbanks. The competitive State royalty oil sale has added a new dimension. Today, the State is out there playing the 'open market' - looking for the top dollar and even competing with other Alaska oil production. State Department of Natural Resources officials say that their current venture directly into the oil market with State North Slope royalty oil may earn them an additional \$20 million. Of course, any business is a two-edged sword. There are the profits and then there are the risks - the losses. Business, however, has a way of getting complicated. World-scale oil marketing is no exception. Both the State and other producers compete in a complex two-tier, west coast market.

Problems of a 'two tier' market

Oil that is surplus to west coast demand must be bumped into the less lucrative and highly competitive U.S. Gulf Coast market. It's value is also discounted by added transportation costs ranging from \$2.50 to \$3.50 per barrel. Oil market life would be simpler if Alaska North Slope crude had only one market, but our volume is simply too large. Prior to 1980 most ANS oil went into west coast markets. Then after 1981,

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Sen. Jay Kerttula, (D) Palmer, confers with Sen. Rick Halford, (R) Chugiak-Eagle River, during a Senate Finance Committee hearing.

Commentary

Alabama's Oil Policy

By Jim Palmer

It's interesting to watch what other states are doing with oil tax and investment policies.

Take Alabama, for example. We usually don't think of Alabama as a major oil and gas state, but in fact exploration and production is increasing fast there. State income from severance taxes has increased from \$1.3 million yearly in 1970 to \$80.5 million in 1985.

But Alabama feels itself in competition with nearby Florida, Mississippi and Louisiana for exploration and investment dollars.

So Alabama tried an experiment. In 1984, Alabama reduced its severance tax for newly-discovered onshore oil and gas wells. The result? From July 1, 1984 (when the new tax incentive went into effect) to December of that year, the number of drilling permits jumped from 181 (during the first half of the year) to 254. New exploration wells jumped from 69 in the first half of the year to 101 in the last half.

Since oil prices were essentially flat during that period, the tax incentive is the only explanation.

Also in 1984, the Alabama legislature created a permanent oil and gas study committee which was comprised of both legislative and public members and was directed to study Alabama's laws and regulations governing the oil and gas industry. This committee found that if Alabama was to compete with other states in attracting prudent investors, it must provide an attractive investment climate which will encourage exploration and production throughout the state, including its offshore areas. It further noted that encouraging oil and gas exploration and development should be a prime goal of the Alabama state government.

With the success caused by the reduction of severance taxes, Alabama is now considering lowering the severance tax rate to six percent for oil produced by enhanced recovery from mature oil and gas fields. The report prepared by the Alabama Permanent Oil and Gas Study Committee notes similar incentives in Florida, where a tax on enhanced recovery projects was reduced from the nominal eight percent to five percent. This has led to a \$110 million new investment in the Jay Field, extending its life by about 12 years.

Mississippi cut its tax in half, from six to three percent, for enhanced oil projects. This incentive is credited with new investments of some \$250 million for wells and pipelines to inject CO₂ in old, depleted fields. These fields are now expected to produce 40 million barrels of new oil over the next 20 years.

Alaska is also concerned about the effect of its taxes on marginal or mature oilfields, of course. Alaska's severance tax, while high (15 percent) also contains an "Economic Limit Factor" which, in effect, lowers the tax on marginal fields.

The rationale behind Alaska's incentives for marginal and mature fields, like those proposed for Alabama, is simple enough: A little less tax might get more oil out of the ground over the long haul. The benefits? Possibly more instate revenues and certainly a positive step toward keeping people working in field production and maintenance.

Jim Palmer

Jim Palmer is the Associate Director of Government Affairs for Sohio Alaska Petroleum Co.



Jim Palmer

Endicott update:

Endicott gravel islands, causeway completed before freezeup

By Frank Baker

Crews with AIC-Martin, a Fairbanks construction firm, battled cold and early winter storms in September and October to bring the gravel portion of Sohio's Endicott Project to completion prior to freezeup.

The gravel project consisted of a 10-mile road and a five-mile-long causeway connecting two gravel islands located in the Sagavanirktok River delta about 2½ miles from shore. The islands will serve as oil production islands for the project's operator, Sohio Alaska Petroleum Co. (SAPC). Requiring about 6.5 million cubic yards of gravel, it was the largest project of its type ever undertaken on the North Slope. The 44 B-70 belly-dump trucks used for the gravel haul are thought to be the largest fleet of such vehicles ever put together in the State.

In addition to the gravel haul, the 1985 portion of slope protection on the 38-acre Main Production Island (MPI) was completed. Slope protection is necessary to protect the islands from winter ice damage and erosion from wave action during summer storms. Huge, polyester sandbags, each containing 16,000 lbs. of sand and gravel, were placed around the island and connecting portions of the causeway. Eventually, about 34,000 such sandbags will be required for the MPI and the 16½ acre Satellite Drilling Island (SDI). For more vulnerable parts of the production islands, 1,500-lb. concrete blocks are also being placed. A total of about 28,000 of the blocks will provide additional protection on the more vulnerable parts of the islands. In addition, sacrificial gravel was placed atop the sandbags.

Well cellars were installed on both production islands. Only finish grading and shaping was required on the smaller SDI, but gravel bag slope protection

Scheduled for production startup in late 1987, the Endicott field contains some 350 million barrels of recoverable crude oil.

and some of the specially designed concrete block slope protection was completed.

Final slope protection work for both islands is scheduled for 1986.

As part of permit requirements for the \$2 billion Endicott Project, Sohio undertook an extensive environmental monitoring program throughout the summer in the immediate Endicott Project area and other offshore areas to the west and east of Prudhoe Bay. Conducted for Sohio by EnviroSphere Company, the program includes a broad range of physical oceanography and biological studies. Costs for the first year of the monitoring program will range between \$2.5 and \$3.0 million, making it one of the most extensive, privately-funded environmental programs ever carried out in the arctic. The overall program is expected to continue at least seven years, with some program monitoring tasks extending over the life of the project.



Camp construction on the Main Production Island (MPI), foreground, will begin in March of next year, and installation of two permanent bridges on the causeway will be completed in April.

Winter slowdown expected

Winter will see a slowdown in the Endicott project, but only a brief one. A contract will be let late this year for two permanent causeway bridges and associated pilings, as well as sheet piling for the MPI dock, piling for the seawater intake structure and communications tower, and 120 conductor pipes, which are pilot holes for wells. The permanent bridges, one 500-foot long and the other, 200-foot long, will be installed by early April, 1986, along with 30 of the conductor pipes. The rest of the project is scheduled to be completed by July 1986. The temporary construction bridges will be removed by May 1, 1986.

Atco-Pioneer will begin building a construction camp on the MPI in March 1986, with 400 beds available by June and another 200 beds in July. The contract includes a construction warehouse and construction offices. The contractor will also begin work in June on a permanent Base Operations Center, to be completed in December 1986.

Still out for bid is a contract to build the permanent warehouse on the MPI, scheduled for completion in December 1986.

Development drilling is due to begin in April 1986. Scheduled for production startup in late 1987, the Endicott field contains some 350 million barrels of recoverable crude oil. Initial production will be 100,000 barrels per day. Natural gas produced with the oil will be reinjected into the reservoir until it is decided to build a gas conditioning facility and transportation system.

Sohio owns 56.8 percent of the reservoir, with seven other companies owning lesser interests. These are Amoco Production Co., ARCO Alaska Inc., Exxon Corp., Unocal Corp., and three Alaska Native Corporations: Cook Inlet Region, Inc., Doyon, Ltd., and NANA Regional Corporation, Inc.

Frank Baker is a member of Sohio Alaska Petroleum Company's Government and Public Affairs staff.



Requiring about 6.5 million cubic yards of gravel, this first phase of Sohio's Endicott Project was the largest project of its kind ever conducted on the North Slope.

Oil industry taxation . . .

(Continued from page 1)

The early years

The legislature didn't increase taxes in 1964, but the issue was raised. It wasn't until 1967 that the tax was increased from one to two percent. Then, following the major 1967 Fairbanks flood, an additional one percent "disaster tax" was levied on oil to help pay flood-assistance costs.

It wasn't until 1969, following the announcement of a major oil discovery at Prudhoe Bay, that serious attention was paid to the structure of Alaska's oil taxes.

A major concern early on was how to structure Alaska's tax to place relatively higher taxes on prolific fields like Prudhoe Bay, yet not damage the economic viability of the smaller, mature oilfields in Cook Inlet. Today legislators are still concerned with this, but with regard to new economically marginal fields on the North Slope as well as the older fields in the inlet.

In 1970, Alaska adopted a "stair-step" severance tax that levied progressively higher taxes on wells with higher daily production. It was a three-step tax with rates ranging from three to eight percent. These rates were increased somewhat through the 1970s, but in 1977 the structure was changed to a flat rate of 12½ percent. This tax included an "Economic Limit Factor", that cut the effective rate of tax on wells of lower productivity. Though the structure was different, the basic idea of protecting marginal fields was retained.

As goes OPEC, goes Alaska

Major increases in Alaska oil taxes came in the 1970s, and there was no real secret behind the political logic: OPEC increased oil prices, and Alaskan oil producers stood to make substantial gains. The State of Alaska wanted a greater cut.

The same thing was happening almost everywhere else that major amounts of oil was being produced - and not just OPEC nations, but also European oil producers like Britain and Norway, Canadian provinces and several other oil producing states in the U.S. besides Alaska.

Alaskans saw the North Slope as a true bonanza, but a finite one. They wanted to capture a "fair share" of oil revenues, just like OPEC. After all, the oil would someday be gone. Along the way, there were critical public service needs in health, education and social services. Dams, bridges, docks, buildings, and airports

The reserves tax almost torpedoed the Sohio-BP financing for the pipeline and field . . .

had to be built. The same political logic prevailed in Iran, Nigeria, Indonesia, Venezuela and other OPEC states. Oil revenues were seen as a tool to rapidly develop an underdeveloped economy.

And it wasn't just greed, either. There were undeniable public service needs brought about by oil activity itself. From 1974-77 some Alaskan cities were severely impacted by pipeline construction. The state 20-mill property tax on oil, enacted in 1973, was intended as a way to provide "front-end" money in the form of state impact-assistance grants to beleaguered Alaska cities at a time when they did not have their own property tax base with which to raise revenues.

Another major tax - which hit Sohio hard - was the emergency "reserves tax" of 1975. At the time, Sohio was a medium sized oil company working hard to raise financing for the multi-billion dollar investment needed for the pipeline and field production facilities (in 1976 Sohio's reserves tax payment to Alaska almost exceeded its entire profit for the year).

But the most serious problem with this tax was that it almost torpedoed the Sohio-BP financing for the pipeline and field; it could have affected half the entire TAPS and Prudhoe investment, and perhaps even jeopardized the pipeline's construction schedule.

It was a technical problem peculiar to New York state laws which governed investments made by insurance companies; Sohio and BP had managed to sell major U.S. insurance companies on investing in the Alaska pipeline. But the state tax might have made that illegal under New York law, and New York was where most of the insurance companies were located.

Had the tax been structured as a property tax (which it really was, of course), insurance companies would have not have been able to buy Sohio pipeline bonds because the significant added tax liability would have altered the company's tax/asset ratios. Interestingly,

Where Alaska's oil revenues come from . . .

About 85 percent of Alaska's total state revenue comes from oil production. A majority of this comes through several kinds of special oil taxes, but a significant part also comes from the state's royalty, or its share as a landowner.

Here's a breakdown on how Alaska's oil taxes and royalties work:

- **State severance, or production tax:** Many oil producing states have this kind of tax. It is a special tax commonly levied on resources (usually oil and gas), and is usually levied as a percentage of the "wellhead" value, in the oilfield. Since almost no oil is actually bought or sold on the field level in Alaska, this "value" is determined by subtracting tanker and pipeline charges from actual west or gulf coast market prices.

- **State property tax on oil:** This 20-mill tax is Alaska's only statewide property tax. It is levied on oil production facilities (wells, flow stations, camps, etc.) as well as pipelines and terminal facilities.

- **Special state income tax on oil:** Alaska state corporate income taxes on oil are different than for other businesses in the state. A more detailed description is in the main article on oil taxation.

- **State oil royalties:** In other oil-producing states, royalties usually go to private landowners. Since Cook Inlet and North Slope fields were discovered on state lands, the royalties go to state government. The royalty rate is set at the time leases are issued. In the case of Prudhoe Bay and many older state oil leases, it is one-eighth of all production, or 12½ percent of the value.

The state has the option of either physically taking the oil and selling it (taking it "in kind"), or simply allowing the producers to market the state's share along with their own, and being paid "in value." In recent years, the state has been taking a good part of its royalties in kind, and selling the oil to Alaskan refiners.

- **Conservation Tax:** A conservation tax of one-eighth of a cent per barrel on non-royalty oil is assessed on Cook Inlet and North Slope oil production.

- **Rents:** That amount paid to the state during the term of a lease which allows for the exploration and development of oil and gas on State land.

the prohibition applied only to the property taxes, not severance taxes.

The state was in a fiscal jam in 1975. The pipeline had been delayed by environmental litigation, and Alaska's cash reserves from a big 1969 oil lease sale were being eaten away. And yet, the Sohio-BP financings were in jeopardy.

A compromise emerged: Alaska would allow the reserves tax to be credited against future severance taxes once production started. Therefore, the state got its interim funding and Sohio was able to get the tax classified as an advance severance tax payment, thereby saving the financing package.

Of course, there was no allowance for interest, so the reserves tax was really a kind of free loan to the state to tide it over a difficult period. Of course it was also a difficult period for Sohio.

Congress begins to watch

It wasn't long before tax policies in energy-producing states began to catch the attention of Congress. State legislators, anxious to preserve state tax sovereignty against federal encroachment, began to be concerned.

The Montana coal case was in the courts. Montana had levied a large severance tax on coal, and it was being contested by eastern and midwest utilities as an unfair burden on interstate commerce. Bills limiting state resource taxing authority began to appear in Congress.

Montana eventually won its case, but a significant factor in the case was Montana's need for revenue to cover the public service costs of coal production itself. There was a direct connection between the tax and public services related to coal. This relationship is absent in Alaska, where revenues far exceed any direct public service costs of oil activity.

While there was no real indication as to what the tax limit might be, there was some caution in Juneau, and an awareness that Alaska might be approaching some point where congressional patience would wear thin. Alaska wasn't the only state in this position, of course, as other energy producing states had also raised taxes substantially. But the combined burden of Alaska's taxes on oil was, by 1978, the highest in the nation.

Congress did indirectly give some indication of where the limit might be in the federal windfall profits tax, enacted in 1978. State severance taxes beyond 15 percent could not be applied against a producer's federal tax liability, Congress said. It is thus no coincidence that Alaska's severance tax went to 15 percent in 1981, as did Louisiana's.

Another factor that indirectly influenced state tax policy was growing public awareness and concern over state tax and fiscal issues, particularly in Anchorage. Alaskans were increasingly worried about the skyrocketing state budget and a revenue system overly dependent on one big North Slope oilfield.

So when advocates of increased taxes turned their attention to state income taxes on oil in 1978, the issue had to be presented not so much as a tax increase (which it was, of course) but as an adjustment cloaked under a mantle of "fairness" in tax policy.

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Senate Finance Committee hears testimony from the Alaska Department of Revenue. The Committee is chaired by Senator Jan Faiks, (R) Anchorage and Senator John Sackett, (R) Ruby.

Royalty oil policy . . .

(Continued from page 1)

our prime west coast markets began to suffer from recession and conservation shrinkage. Expected new offshore California production will also bump additional volumes of Alaska oil to the Gulf coast. Today only about half of ANS production goes into the west coast market.

There is some good news. Mexican and Indonesian imports have tended to be priced out of the California market, with cheaper ANS claiming these volumes in this more favorable market tier.

It is in this complex market that the State must worry about what impact its 'oil marketing,' as a business action, might have on its own base price (wellhead price) on which its owners fee (the royalty) and on which its government fee (severance taxes) are based. In other words, because of the number of different hats it wears and interests it has in oil prices, the State could find itself competing adversely against its own interests in a given situation.

Shadow of litigation

Then of course, there is also the shadow of pending litigation, such as the Alaska vs. Amerada Hess case involving determination of North Slope wellhead values - a case that has been hanging out there in the discovery process since 1977 and which still has not yet come to trial. A decision favorable to the State would have the effect of retroactively increasing past State income from royalties (and taxes) that were taken 'in value' (in cash), but not necessarily for State royalty oil taken 'in kind' (taken as product) and sold directly.

What this means is that apparent profits from State

. . . The state could find itself competing against its own interests . . .

competitive royalty sales would have to be discounted by the amount of a favorable State decision in Alaska vs. Amerada Hess, unless sale contracts specifically provide for similar retroactive payment by royalty oil bidders. In the case of past negotiated in-State royalty oil contracts, if the State receives a monetary retroactive award in the Amerada Hess case, this amount essentially represents a subsidy to the refiner (and Alaska consumer), since it is not recoverable. The State is already moving to insert special provisions regarding an Amerada Hess settlement in future royalty oil contracts, but the uncertainty that surrounds such a settlement adds a bit of a cloud to the competitive sale process.

It is not easy for public government to compete in areas usually the province of private institution. Government and private business operate by different rules and have different trust obligations to their stockholders and citizens. These public constrictions mean that the State must approach the market cautiously and with a wide perspective of the public interest. The State is also caught wearing 'three hats' - it is government, landowner and a business speculator.

In December 1984 the State re-entered the competitive oil arena after an absence of some five years. A series of relative short-term contracts have yielded some higher dollars to the public purse and state officials claim the sale avoided having adverse market impacts that might have negatively influenced wellhead prices. But the State is also dragging behind it some big losses from a late-1970s negotiated sale and a 1980 competitive sale that went sour.

How did we get in the oil business?

So, how in the world did we get in the oil business? Well, like it or not, we are all citizens of an Alaska government and apparently also the Alaska Public Oil Company. Perhaps a better statement is that we are all part of an Alaska Public Resources Corporation, since ultimately this 'alternate face' of our government may involve other resources. This role may not fit your personal philosophy, but that's the way it is. If you want to argue the propriety of the point, do it with the folks in Congress that passed the Alaska Statehood Act and the Alaskans that drafted and approved the State Constitution - They're the ones that put the foot in the door. Now the question is more: how far does your Alaska Oil Company go in expanding its role . . . and what risks are appropriate for your public oil company?

Congress' rationale

Congress opened up the door for Alaska to enter the oil business quite knowingly. How else was an



Since oil production began in 1977, more than 5,000 loaded oil tankers have sailed from the Valdez Marine Terminal.

isolated and giant landmass, sparsely settled with not even the population of a modest sized county government, going to survive financially as a State?

Alaska was created with a huge land and natural resources endowment, with full expectation that it would develop and market its resources as a means of private economic and public fiscal survival. If fact, Congress rather specifically rationalized that oil would bail out this young creation. The newly discovered Swanson River oil field on the Kenai Peninsula was on federal lands, and there was expectation of more discoveries. The Congress turned their fiscal rationalization for sparsely settled Alaska into policy by allowing the young State to have 90 percent of oil revenues from federal lands.

Royalty oil, a long story

Even prior to statehood, back when the Territory had no subsurface resource rights, Alaska lawmakers began anticipating their statehood resource base. They structured Alaska law with provisions for taking ownership royalties both in value (cash) and in-kind (oil). During the early 1960s, as Cook Inlet came into production the state took its royalties in cash, but then in the late-1960s Commissioner of Natural Resources Tom Kelly negotiated a royalty sale with the new Tesoro Refinery on the Kenai Peninsula. On one hand, the sale was hailed as leverage to create development, employment, and provide Alaska oil for Alaskan use, but on the other hand the arrangement was viewed

. . . What risks are appropriate for your public oil company?

with a certain suspicion and concern that the state might not receive full value for the royalty oil.

In the late 1970s completion of the Alyeska Pipeline brought oil through Fairbanks. The new North Pole refinery was ready and waiting, and soon royalty oil contracts were also completed to feed this new plant. The increasing flow of oil in the Alyeska Pipeline at the time was also bringing the state escalating oil severance tax and royalty income.

There was also the expectation that soon there would also be a natural gas pipeline. As the 1970s were coming to an end, Alaskan policymakers began increasingly to think about how they could 'leverage' their royalty ownership in gas and oil to foster development within the state. Increasingly the Alaska political drumbeat sounded a theme of 'in-state' refining and petrochemical development as the pathway to the 'new Alaska' development. The state's leverage in guiding and prodding along this development was its royalty share in gas and oil.

Even prior to Alyeska oil flow the state became embroiled in trying to use - to commit - its royalty gas to influence the routing of the Alaska Natural Gas Pipeline in the U.S. Congress. The state offered a competition for development proposals to use state royal-

ty oil in the development of an Alaska based petrochemical complex. The key and the carrot was placement of state royalty oil with the developer at a certain point in planning and development. Next came the gas petrochemical competition, a special state-industry joint feasibility process which the so-called Dow-Shell Group was selected to lead. The carrot at the end of this gas-fueled, petrochemical feasibility process was access to state royalty gas. Despite the inconclusive results of that study process the Dow-Shell group did make a bid for 'options' on state gas.

1980 competitive royalty oil sale

However, the end of the 1970s also marked the peak of the oil crisis and pricing actions by the OPEC cartel that sent state oil revenue soaring. While the spotlight was principally on 'leveraging' state royalty oil for in-state development, there was also an emerging interest in maximizing state oil income by selling state royalty oil by competitive sale in the open market. As the 1980s dawned, market conditions were very inviting for competitive spot-sales of state royalty oil, since the psychology of crisis and shortage were still prevalent, prices remained high, and crude oil was still in short supply.

In December 1980 the state held its first competitive sale of royalty oil. The sale was timed to take advantage of a tight market in which 'spot prices' for ANS crude were well above long-term contract prices. The market also remained concerned about the reliability of deliveries that existed following the Iranian crisis. The state established a base price higher than the current in-value price. The sale appeared to be a success with bidders offering premiums as much as \$3 per barrel.

But then the bottom fell out and the ANS spot market went on the skids along with oil prices around the globe. The bidders for Alaska North Slope royalty oil were struck with oil commitments at high prices, but which they could now only market at a sizeable loss. One successful bidder, Energy Cooperative Inc., went into bankruptcy and defaulted on its payments. Another firm, Alaska Petroleum Company, refused to take its committed volumes.

Then, compounding problems, the owners of the Alpetco project, a negotiated royalty oil contract, refused to take continued deliveries of royalty oil. This forced the state into emergency negotiations with Sohio and ARCO, the Prudhoe Bay field operators. Unlike oil companies, the state does not have oil holding facilities of its own, nor was it equipped like a private company might be, to quickly trade the oil to someone else, even if at a loss. Making matters worse, the stipulations within the leases foreclosed automatically reverting to 'in-value' form of handling the royalty, leaving the producers to market the oil. The state had to go to the producers to get themselves out of the dilemma.

Making matters worse, Charter Oil Company, the parent firm of the Alpetco project, went bankrupt, leaving in litigation issue over \$60 million in alleged back payments. After the bruising experiences of these years the state abandoned competitive oil sales, and even the political 'drum beat' of using state royalty oil as development leverage cooled considerably.

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Royalty oil policy . . .

(Continued from page 4)

The 1984 competitive sale

In December, 1984 the state again moved to offer state royalty oil at competitive sale. This time the state approached the sale cautiously, negotiating back-up agreements beforehand with Prudhoe producers for a possible emergency return to the 'in-value' royalty method, and offering the oil in lots of 5,000 barrels a day for six-month and 12-month terms. The state also prequalified bidders. The state also sought to quiet criticism from in-state royalty users, granting them a 'priority option' to match any of the bids.

The total royalty oil offered was 50,000 b/d from Prudhoe Bay for a 12-month period and 25,000 b/d for a six-month period, with another 15,000 b/d from the Kuparuk Field for a six month period. The six month agreements expired at the end of September (35,000 b/d).

The bid results showed a weighted average premium of 64 cents a barrel over in-value prices for the six-month contracts and a weighted average premium on the 12-month contracts of 81 cents. This produced a revenue increase of \$4.67 million and \$14.78 million million in state earnings on the six-month and 12-month contracts - a total apparent profit of \$19

million to the state. The current competitive contracts did not make any allowance for an Amerada Hess settlement. On one hand it can be argued that these profits must be discounted by a future settlement, which would increase the in-value side of a comparison. However, it is also likely that a provision for an Amerada Hess settlement, which will likely be inserted in future royalty offerings, will simply result in less premium. The actual profit to the state from the current competitive placement will probably be something less than \$19 million, but still even royalty sale critics must acknowledge that the state did relatively well.

The state's future strategy will be to offer continued short-term (6-12 month) sales of oil to 'prequalified' bidders. In the future the Department of Natural Resources indicates that approximately 72% of Prudhoe Bay royalty oil will be committed to long-term contracts, 17% will be available for competitive sales, and 11% will remain with the producers.

However, as the state continues to dabble in the oil market, it and its partners/competitors, the North Slope oil producers will have to keep a cautious hand on the pulse of the sensitive two-tier Alaska oil market, the sensitive and constricting preferred west coast market tier, and the complexities of 'whom' oil is taken

and 'where' it is placed. Another sensitivity of state oil marketing, and one which will increase as the smaller new fields come into production, is that different companies have different interests in each field and also in the preferred market. For example, royalty oil taken from Kuparuk affects ARCO more, since it owns a large share of this structure, while oil taken from Prudhoe Bay impacts Sohio more. However, in the West Coast market ARCO sells largely to itself - its own refining and marketing system. Sohio, on the other hand, sells into West Coast independent market. But the bottom line is for the state officials to watch carefully for any impact their actions may have on the Prudhoe Bay wellhead price.

The experience of the 1984 sale seems to indicate the competitive royalty oil sales approached cautiously - using some sound 'rules' - and with short-term placements, may be successful for the state. But also lurking in the background is the suggestion that, like with the stockmarket, if you hang around such complex and sensitive markets long enough you get burned. A final reservation, always present when pursuit of speculative profits is present and especially for a public institution, is whether when the market gets 'bullish', you can keep faithfully to your own 'good rules.'

Oil industry taxation . . .

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Political rhetoric amid a complex issue

Corporate income tax policy is one of those issues where simplistic political rhetoric can confuse a complex and serious policy question.

Tax advocates developed a slogan that industry should pay its 'fair share' of the income tax, at the same rate as *Alaskan businesses* (conveniently forgotten of course, were all the other taxes oil companies pay).

Advocates argued that state law requires Alaskan corporations to pay 9.4 percent income tax on their earnings. But oil companies, through tax loopholes, were able to get away with paying much less, they said.

Reality, as usual, is much more complex. The rhetoric clouded one of the most serious issues in U.S. tax policy - the treatment of state taxation of interstate commerce.

Above all, a crucial distinction was ignored: Local firms, grocery stores, car dealerships, contractors or air taxi operators, do all their business within Alaska. All of the income is thus 'Alaskan' in origin.

But what of companies doing business in several states? Fish processors buy fish, can or freeze them and sell them to buyers in other states. Large merchandising or supermarket chains do similar things, as do airlines, trucking or shipping companies. An oil company produces oil in one state, refines it in a second, and markets in a third. So, where is the income really 'earned', and which state has the right to tax that income?

Crude oil is useless without refining, California tax authorities might argue. Therefore, California is where the income is *really* earned, and California should have the right to tax it. But authorities in states where marketing occurs would disagree. Oil products are useless until people buy them and pay cash, they say. Therefore, income occurs where things are sold, and the income should be taxed there.

Alaskans would have a third view. Since this is the source of the crude oil, shouldn't Alaska be able to tax all the income?

With many states claiming the right to tax businesses engaged in interstate trade, it was quite possible that overlapping and multiple tax claims on the same income would occur, driving up the overall tax burden considerably.

Things finally got so bad that Congress threatened to intervene in the early 1970s. To head off federal intervention, several states got together and forged a compromise: A multi-state tax compact that would set rules by which companies could *apportion* segments of their income to the different states in which they did business. A formula was developed to do the apportionment, with the numbers of employees, the amount of property and sales used as factors in dividing up the income.

The compact was considered very innovative at the time. Not all states joined, but most used some variation of the apportionment system of income taxation. There was even a degree of flexibility within the compact. States could deviate from the system if they felt

special circumstances dictated. Alaska became a member in the early 1970s.

Of course, there could always be arguments as to how 'fairly' the formulas treated Alaska. Oil companies, for example, have relatively few employees here in comparison to other states. Most oil marketing takes place elsewhere. Thus, Alaska would 'lose' on parts of the formula dealing with employees and sales. But on the other hand the oilfields were located here, so Alaska scored high on the 'property' factor.

In the final analysis, there may be no way to divide the income that every state would regard as completely 'fair'. In the end it became a problem of developing a workable system that could be at least accepted by the different states. This is how allocation developed.

Interestingly, Alaska enjoyed a real advantage under the system in the 1970s, and does today under the 'modified apportionment' system in effect since 1981.

Companies pay income tax here without earning any revenue in Alaska.

During the 1970s, for example, Sohio and other North Slope companies paid income taxes to Alaska even though no earnings were made. This happened because under the apportionment system, Alaska could claim a segment of worldwide income even if none of it came from here - as long as the companies have property and employees in the state. Today, under the modified apportionment system, companies exploring for oil and earning, as yet, no income, still pay income tax.

Separate accounting

What the legislature did in 1978 was to depart sharply from the income tax system. In adopting a *separate accounting* income tax for oil (apportionment was retained, of course, for non-oil businesses), Alaska substituted where the state itself defined the 'income' pool that would be taxed.

This was done by starting with a market value for crude oil, whether sold or used in a company's own refineries, and then subtracting tanker pipeline charges and some other operating expenses to arrive at a pool of income 'earned' in Alaska.

In this manner, the separate accounting income tax functioned very much like a severance tax. In theory, more business expenses were to be allowed, but in practice many ordinary costs which could be deducted under federal tax law (or Alaska income tax law, for non-oil businesses) were not allowed.

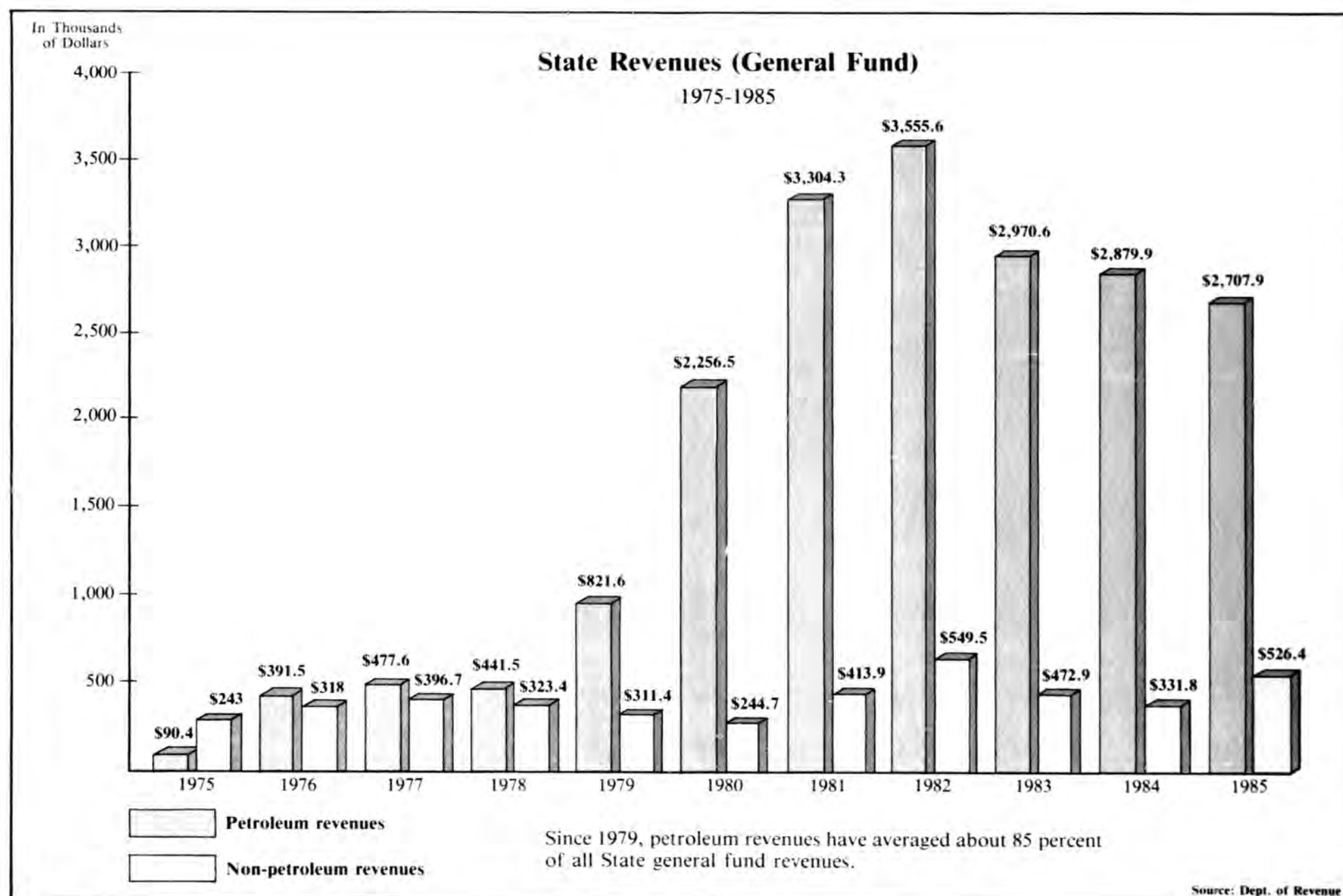
Many Alaskans are now familiar with the litigation filed by producing companies following Alaska's adoption of separate accounting. The companies argued the tax was illegal because first, the state was taxing income from the production and sale of North Slope crude oil that was not earned in Alaska; second, the income tax was levied on income grossly disproportionate to the industry's corporate presence in Alaska; and third, the separate accounting tax scheme subjects the oil companies' income to double taxation.

Alaska's superior and supreme courts were able to



Rep. Rick Uehling, (R) Anchorage makes a point to fellow Anchorage Representative Max Gruenberg, (D) Anchorage during a debate on legislation before the House.

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uphold the law, a decision largely expected by the companies. The case may yet be appealed to the U.S. Supreme Court.

But while the complex case was slowly winding its way up through the Alaska courts, the legislature faced a very practical and real problem in 1981.

1981: Give a little, take a little

In 1981, the legislature decided to take steps to secure the State's financial future against the possibility, however remote, that the companies might eventually win. If that were to happen, the fiscal consequences were such that it could have wreaked havoc on state revenues and budgets. As optimistic as they felt the state's chances of winning in court, it was still a chance too big to take, many legislators felt.

Between 1978 and 1981, the companies had paid some \$2 billion to Alaska under protest. Two billion dollars at stake is bad enough, but the amount would grow billions larger as the years went by.

For their part, the companies realized that even if they won, they also lost. With no other sources of revenue, the state would have to again increase oil taxes just to pay the companies back. It was a bad scenario: Fiscal chaos for Alaska and a ruinous tax on oil that could devastate chances for new development.

The separate accounting tax scheme subjects the oil companies income to double taxation . . .

In such a no-win situation, even the remote chance that it might happen was enough to propel both parties into searching for a compromise and an out-of-court settlement. That was what the 1981 repeal of separate accounting was all about.

In 1985, critics of the legislature's 1981 action say the state gave away "too much", and that falling state revenues between 1982 and 1985 resulted from the tax change. Defenders of the repeal responded that revenue "losses" were largely a result of falling oil

prices, a view also held by the State Department of Revenue.

Was it really a "compromise"? Not really. The original idea was for legislators and North Slope producers to work out an agreement that would lead to the companies dropping their lawsuit. The companies were hoping for tax revisions that would have restored the apportionment method and lowered the overall tax burden, perhaps to half again as much as it would have been under pre-1978 tax laws.

They got less than that in the complex legislative

. . . The economic and political environment in which decisions will be made are sharply different than 1981.

package that finally passed. At the time, it looked like a 20% reduction. So the lawsuit wasn't dropped.

Legislators had hedged their bets in a number of ways, however. First, they did abandon separate accounting as a method, but they adopted a modified apportionment system that did not go all the way back to the pre-1978 system. It was to contain apportionment formulas that, while working in a fashion similar to traditional apportionment, was still to tilt the balance strongly in the state's favor. And, it continued to apply just to oil companies.

Meanwhile, the severance tax was raised to 15 percent, and Economic Limit Factor removed for Prudhoe Bay until 1987, and the old separate accounting tax was to remain in effect for part of the next tax year. All of this was to reduce to some degree any revenue "loss" due to the income tax change.

At the same time, legislators dramatically increased the state's chances of winning in court for the years 1978-81 (when separate accounting was in effect) by retroactively removing several technical defects in the law which increased its legal vulnerability. This was known as the "warts" bill, in that it retroactively removed the "warts" on the 1978-81 income tax.

But when the bill passed, the companies did get some relief - it was the first reduction ever in state oil taxes. And it was hoped that a potentially troublesome issue had been laid to rest. It had, until 1985.

The fiscal climate, then and now

Events in the past seem always to be viewed in a more perfect vision. Since separate accounting was eventually upheld by state courts, it seems easy to criticize legislators in 1981 for "giving in" too early. But at the time, to those who had the responsibility of the public's welfare, it seemed a prudent decision to make.

Alaska's legislature in 1986 may again review state petroleum income and severance taxes, but the economic and political environment in which decisions will be made are sharply different than 1981.

Many legislators in 1981 voted for the tax reduction out of a sense of fairness. Oil prices and state revenues had shot up, taxes had been eliminated or sharply reduced for the public and most other business groups. It was time to reduce the petroleum industry's taxes also. It was a time of huge revenue surpluses.

Things are sharply different in 1985, of course. But more significant is that the world-wide economic climate of oil has radically changed. Tax policies of the 1970s were based on the notion that oil was a scarce commodity with an ever-increasing value. Now, it appears that oil is plentiful all over the world, and that Alaska may have to fight to keep its place even in U.S. markets.

In 1986, facing falling oil revenues and uncertain oil prices, several state legislators have indicated that they may again review state oil and gas tax policy. Among the questions they may consider will be:

- What is the most appropriate structure, and level, of state corporate oil income tax? Should the modified apportionment system be retained, or should "separate accounting" be reinstated? Which will generate more revenue to the state over the long term? Which encouraged more oil and gas development in Alaska?
- Should the state continue its long-standing policy of encouraging marginal field development and continued production in mature fields? At present, the Economic Limit Factor in the severance tax effectively lowers the tax rate on marginal fields.
- Should the state raise oil taxes at a time of great uncertainty in world oil markets? What effects could this have in undermining the competitiveness of Alaskan producers?

Given the frequent changes in Alaska's oil and gas taxation policy in the past, stability will be the key question facing Alaska's legislators in 1986.

Tim Bradner is an Alaskan resource writer and a former Sohio Government Affairs Associate Director. He represented the company in Juneau during the period discussed in this article.