



THE STATE  
of **ALASKA**  
GOVERNOR BILL WALKER

Department of Revenue

TAX DIVISION

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February 2, 2016

The Honorable Paul Seaton  
Alaska State Representative  
State Capitol Room 102  
Juneau AK 99801

Representative Seaton,

This letter is in response to a request you made on January 7, 2016 for a second set of revisions to our analysis of a hypothetical North Slope oil project. You requested that we modify one of the net present value tables at the end of the analysis to reflect not only total State/muni revenue, but to also include an approximation of general fund unrestricted revenue. This modification is shown along with a note about the amount of property tax the State gets from North Slope upstream property tax. We have also added graphs showing total production tax to the State over the life cycle of GVR-eligible and non-GVR eligible fields. And lastly, we added net present value totals for the State/muni revenue and for the State production tax to the bottom of each of the life cycle revenue graphs. For the net present value analyses, we used 6.15% as the discount rate, which was the earnings rate for the Permanent Fund Corporation in September 2015.

It is also important to know that the entire analysis was prepared using real 2015 dollars, and assumes no inflation for oil prices or costs.

**Analysis requested, assumptions, and description of attached graphs**

This letter is in response to your request to the Department of Revenue on January 26, 2015 for modeling of a hypothetical North Slope oil project. Specifically, you requested the following:

*An analysis of a new projected lease on a North Slope field producing 15,000 b/d, what would be the potential state investment over 10-year development phase with net operating loss credits if the company had no other production in the state? What is the projected net revenue or loss to the state over the life of the field? Please provide this analysis at oil prices of \$50, \$60, \$80 and \$100.*

Thank you for allowing us to make use of the interim to prepare this analysis. Based on the above request, this analysis assumes the development of known resources from a North Slope oil field by a company that has no other business activity in the state. The oil field is a standalone field that is reasonably close to existing pipeline infrastructure. Over the 30-year life of the field, the company produces approximately 50 million barrels of technically and economically recoverable light conventional oil, with oil production peaking at 15,000 barrels per day.

Capital costs to develop the field total approximately \$900 million, or about \$18 per barrel, with most of the costs incurred early in the project life. Operating costs total \$750 million over the 30-year period, and average \$15 per barrel, although during peak production, operating costs are reduced to \$11-\$13 per barrel. These costs are in the range of a “normal field,” although many of the fields on the North Slope left to develop likely have specific challenges that may make them more costly to develop. With respect to State revenue, more costly projects generally lower the overall take for the State, since any net operating losses would be greater and there would be fewer net profits on which to levy production tax.

We also assume that the company that develops the field receives cash refunds from the State for production tax credits received in excess of any production tax liability.

On the following pages are some of the results of the 30-year life cycle modeling given the assumptions above. Please note that the charts assume two classes of fields for production tax purposes: (1) Non-Gross Value Reduction fields, sometimes called “legacy” fields, which are presented in graphs 1-9; and (2) Gross Value Reduction (GVR) fields at the 20% GVR level, sometimes called “new” fields, presented in graphs 10-18. The end of the report includes a table showing net present values of total State/Municipal Revenues over the 30-year period, as well as an approximation of State General Fund Unrestricted Revenue (GFUR) over the 30-year period. The discount rate for the net present value calculations is the same as the Permanent Fund Corporation’s September 2015 earnings rate of 6.15%.

I hope you find the enclosed analysis to be useful. Please do not hesitate to contact me if you would like further analysis or if you have any questions.

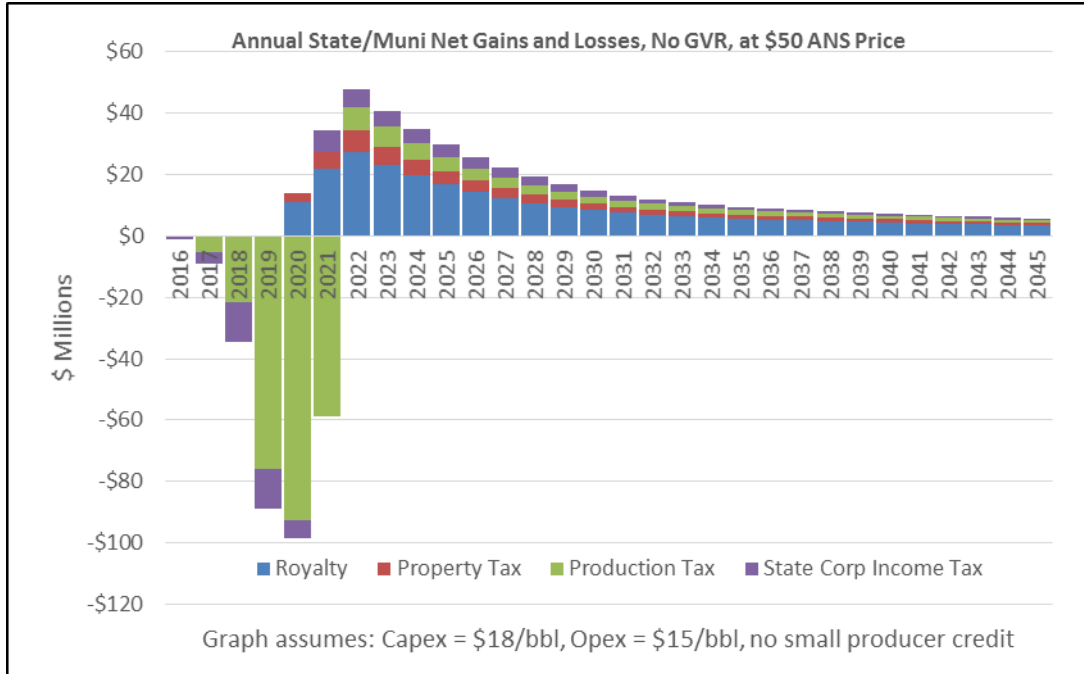
Sincerely,

A handwritten signature in blue ink, appearing to read 'Ken Alper', with a long horizontal flourish extending to the right.

Ken Alper  
Tax Division Director

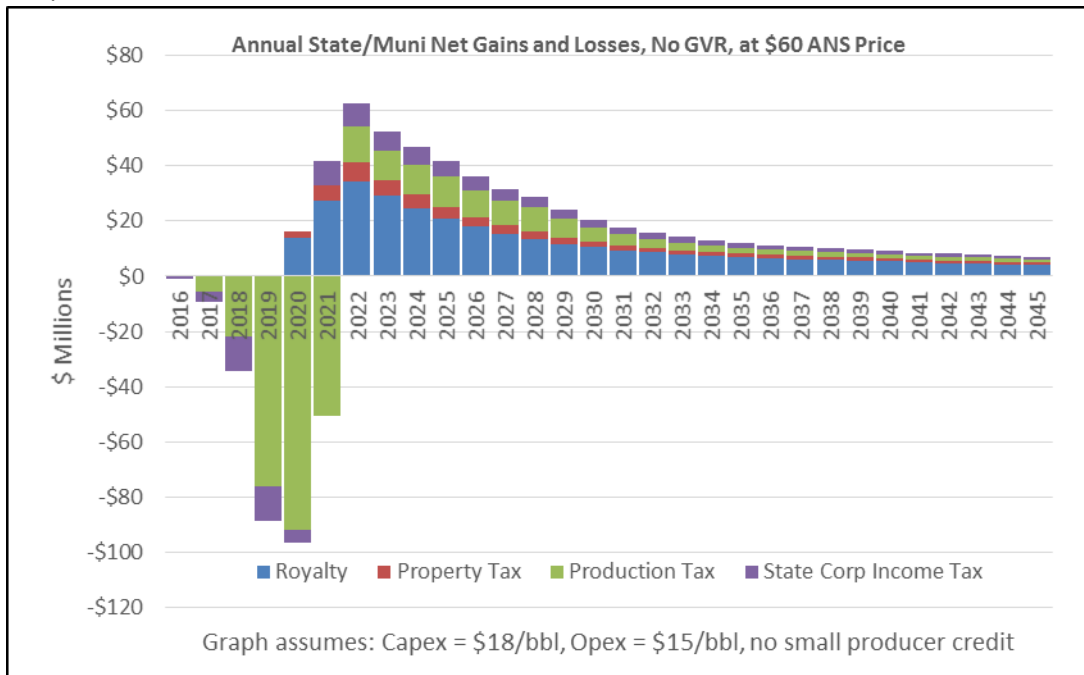
# NO GVR, Legacy Fields Analysis

Graph 1: Annual State/Muni Net Gains and Losses and NPV 6.15%, No GVR, \$50 ANS



Total Annual State/Muni Losses = \$243 million
Total Annual State/Muni Gains = \$379 million
<b>Net State/Muni Gain (Loss) = \$136 million</b>
State/Muni NPV 0.0615 = \$-13 million

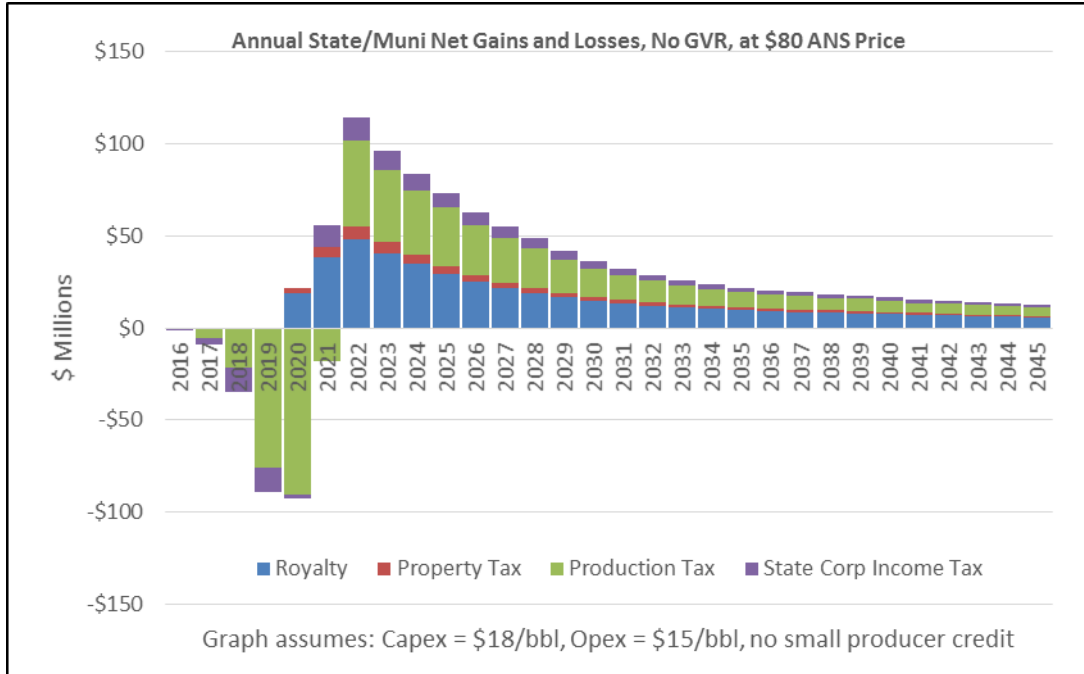
Graph 2: Annual State/Muni Net Gains and Losses and NPV 6.15%, No GVR, \$60 ANS



Total Annual State/Muni Losses = \$222 million
Total Annual State/Muni Gains = \$507 million
<b>Net State/Muni Gain (Loss) = \$285 million</b>
State/Muni NPV 0.0615 = \$63 million

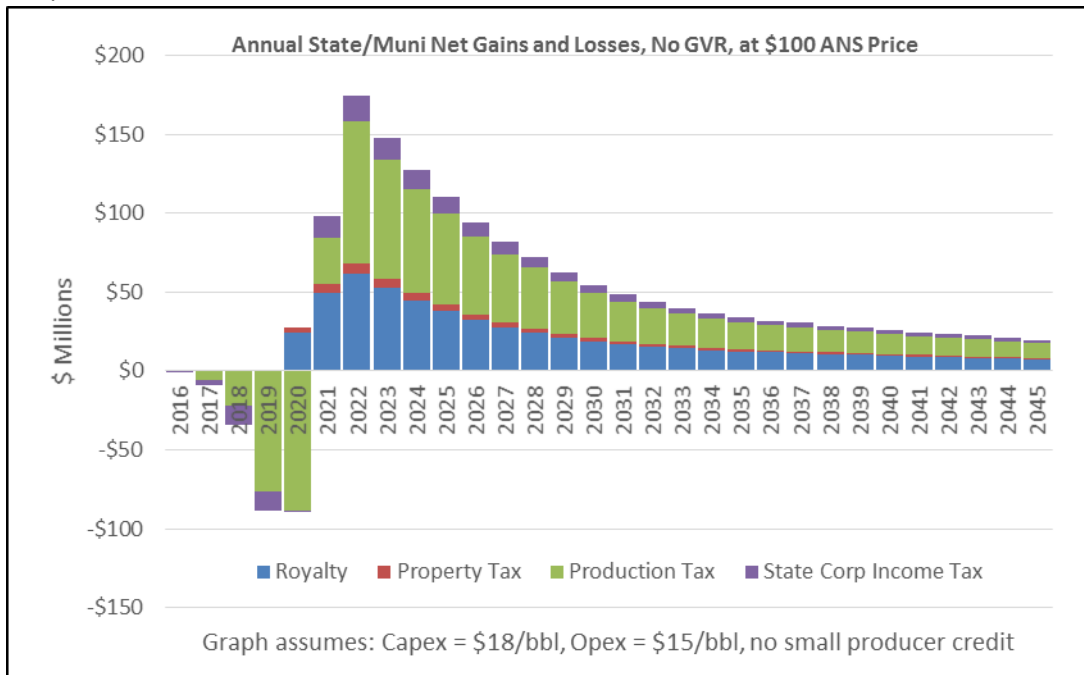
# NO GVR, Legacy Fields Analysis

Graph 3: Annual State/Muni Net Gains and Losses and NPV 6.15%, No GVR, \$80 ANS



Total Annual State/Muni Losses = \$204 million
Total Annual State/Muni Gains = \$944 million
<b>Net State/Muni Gain (Loss) = \$740 million</b>
State/Muni NPV 0.0615 = \$288 million

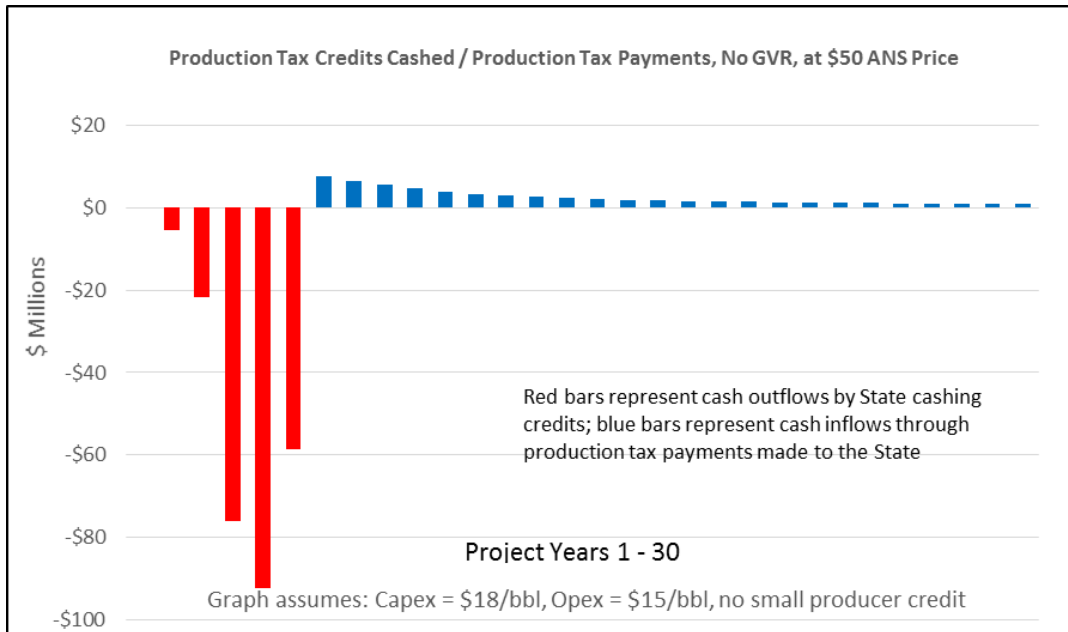
Graph 4: Annual State/Muni Net Gains and Losses and NPV 6.15%, No GVR, \$100 ANS



Total Annual State/Muni Losses = \$195 million
Total Annual State/Muni Gains = \$1481 million
<b>Net State/Muni Gain (Loss) = \$1286 million</b>
State/Muni NPV 0.0615 = \$556 million

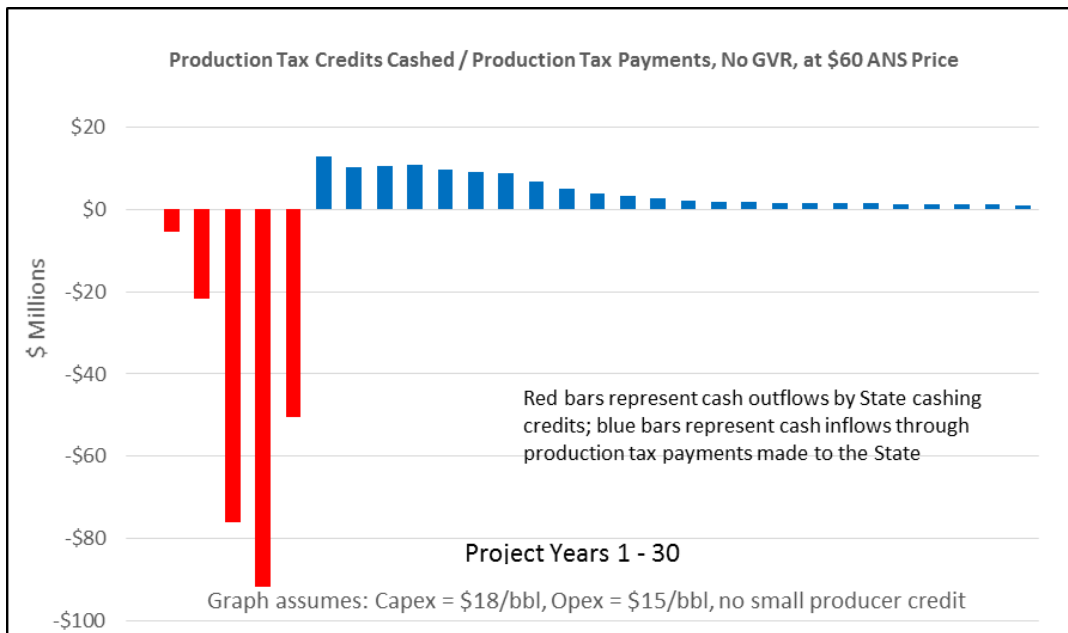
## No GVR, Legacy Fields Analysis – Production Tax Specific

Graph 5: Production Tax Credits Cashed / Production Tax Payments and NPV 6.15%, No GVR, \$50 ANS



Production Tax Credits Used = \$254 million
Production Tax Paid = \$61 million
<b>Net Production Tax = \$-194 million</b>
Production Tax NPV 0.0615 = \$-165 million

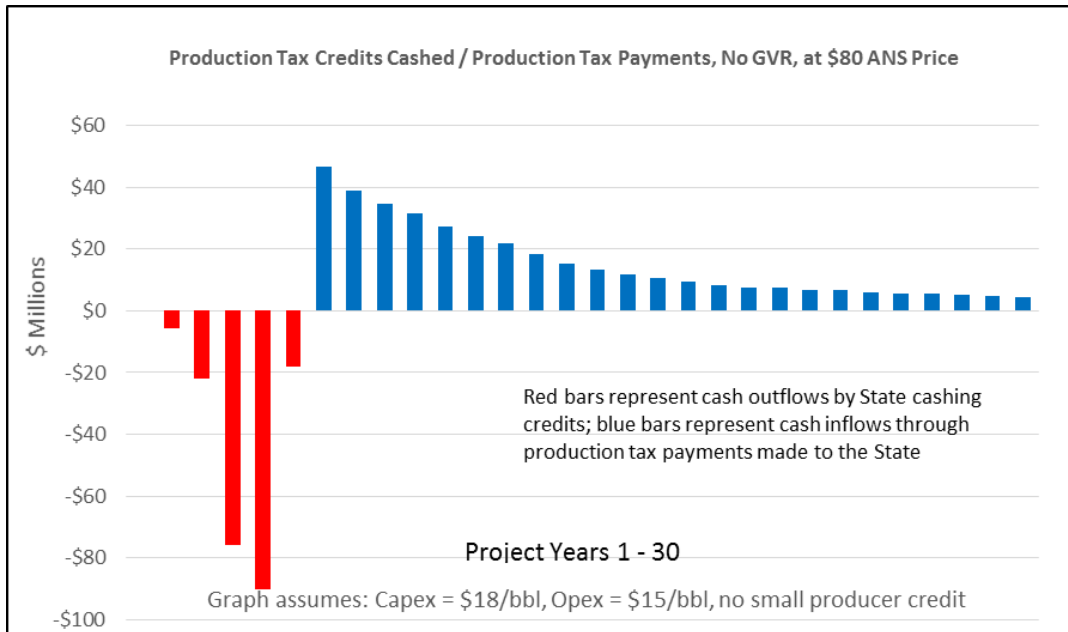
Graph 6: Production Tax Credits Cashed / Production Tax Payments and NPV 6.15%, No GVR, \$60 ANS



Production Tax Credits Used = \$245 million
Production Tax Paid = \$114 million
<b>Net Production Tax = \$-132 million</b>
Production Tax NPV 0.0615 = \$-132 million

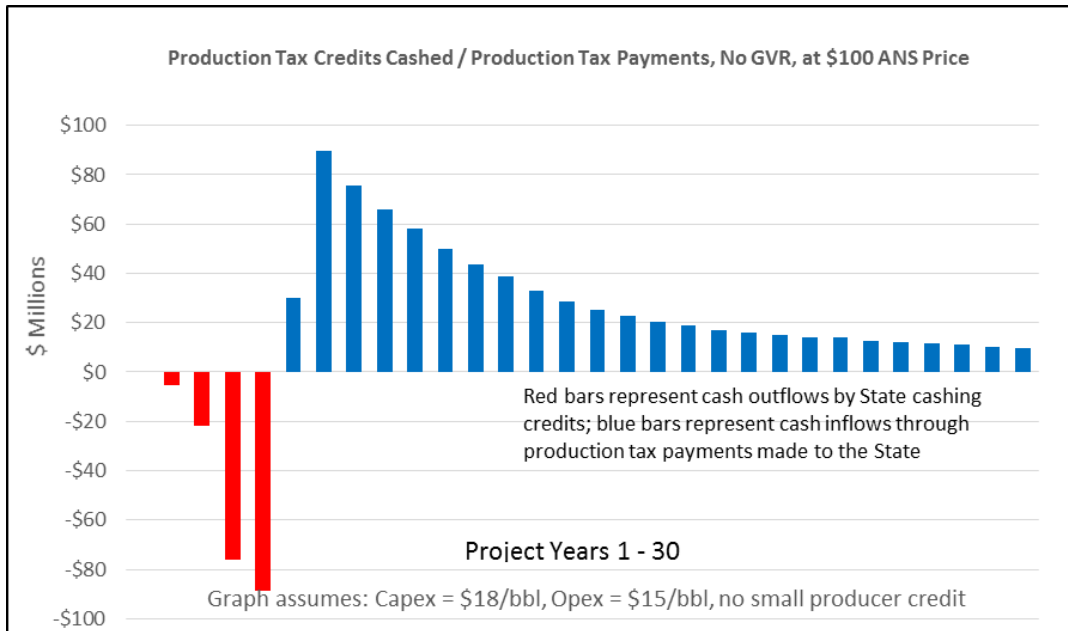
## No GVR, Legacy Fields Analysis – Production Tax Specific

Graph 7: Production Tax Credits Cashed / Production Tax Payments and NPV 6.15%, No GVR, \$80 ANS



Production Tax Credits Used = \$211 million
Production Tax Paid = \$372 million
<b>Net Production Tax = \$161 million</b>
Production Tax NPV 0.0615 = \$13 million

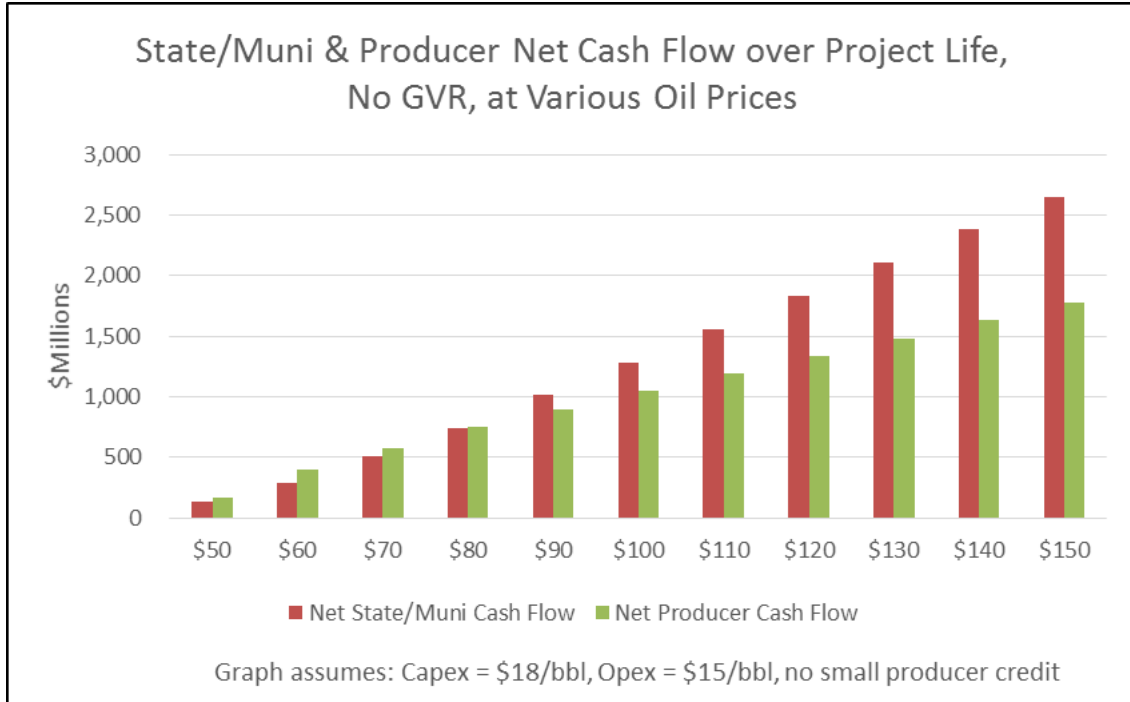
Graph 8: Production Tax Credits Cashed / Production Tax Payments and NPV 6.15%, No GVR, \$100 ANS



Production Tax Credits Used = \$192 million
Production Tax Paid = \$743 million
<b>Net Production Tax = \$551 million</b>
Production Tax NPV 0.0615 = \$204 million

## NO GVR, Legacy Fields Analysis

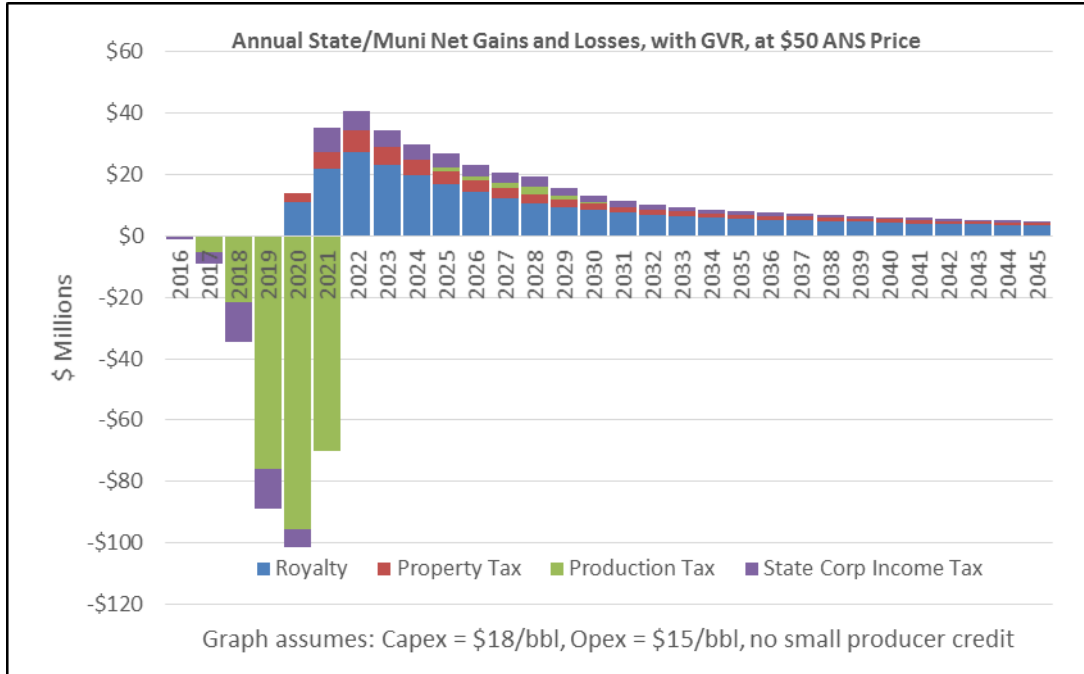
Graph 9: State/Muni & Producer Net Cash Flow over Project Life, No GVR



Please see the following pages for analyses of new fields receiving the Gross Value Reduction of 20%.

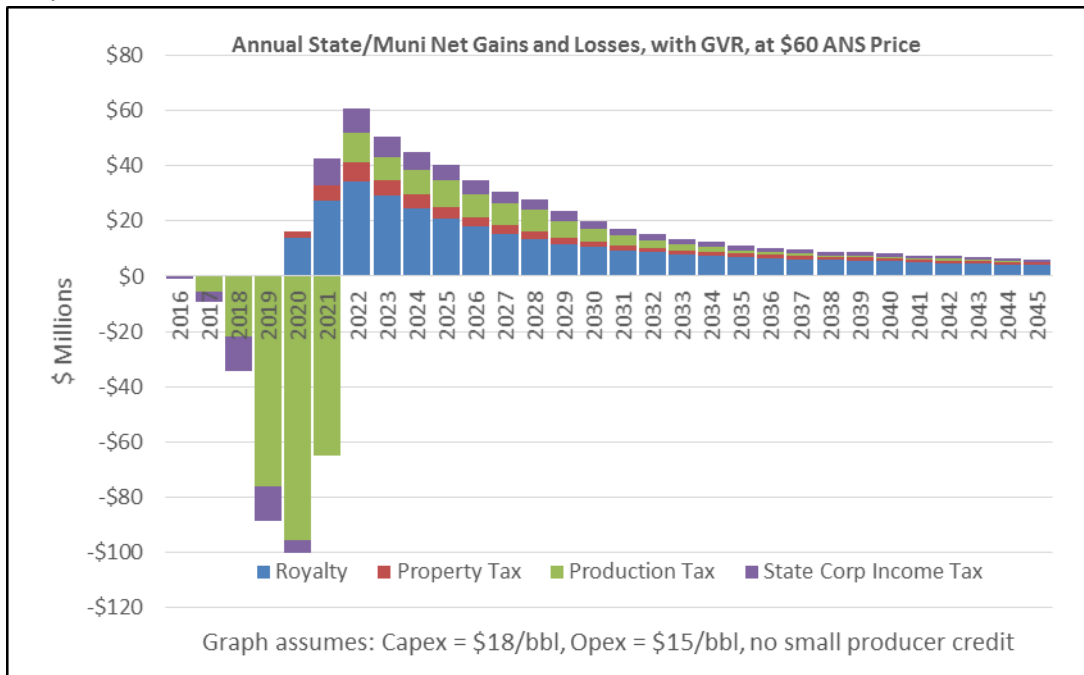
## WITH 20% GVR, New Fields Analysis

Graph 10: Annual State/Muni Net Gains and Losses and NPV 6.15%, With 20% GVR, \$50 ANS



Total Annual State/Muni Losses = \$256 million
Total Annual State/Muni Gains = \$331 million
<b>Net State/Muni Gain (Loss) = \$75 million</b>
State/Muni NPV 0.0615 = \$-44 million

Graph 11: Total Annual State/Muni Net Gains and Losses and NPV 6.15%, With 20% GVR, \$60 ANS

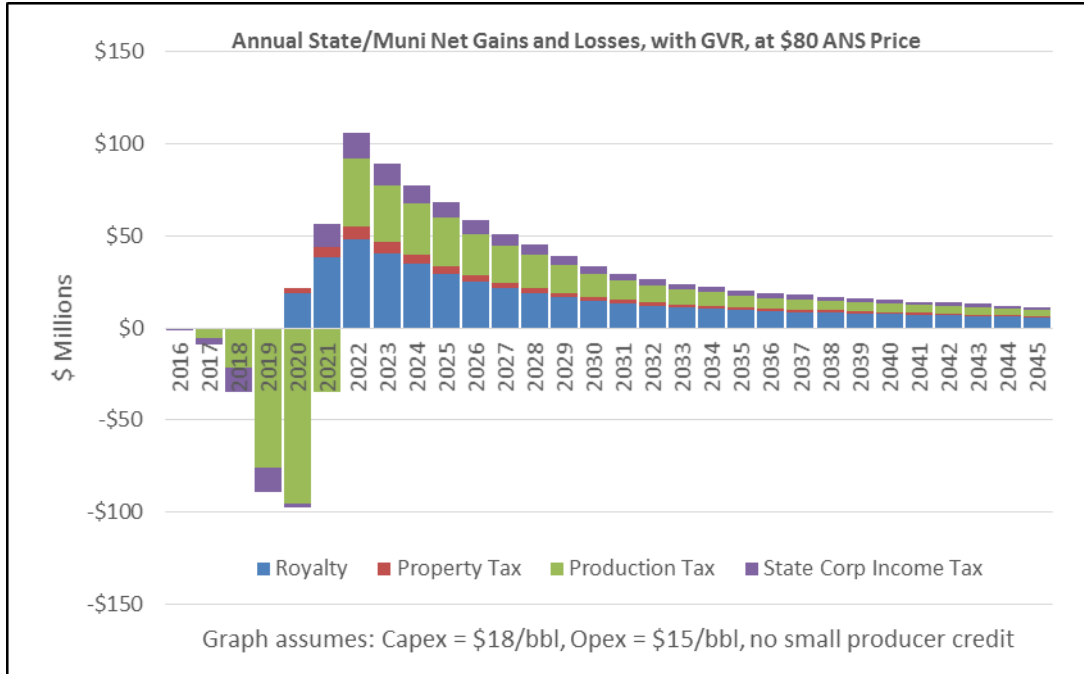


Total Annual State/Muni Losses = \$239 million
Total Annual State/Muni Gains = \$483 million
<b>Net State/Muni Gain (Loss) = \$244 million</b>
State/Muni NPV 0.0615 = \$41 million



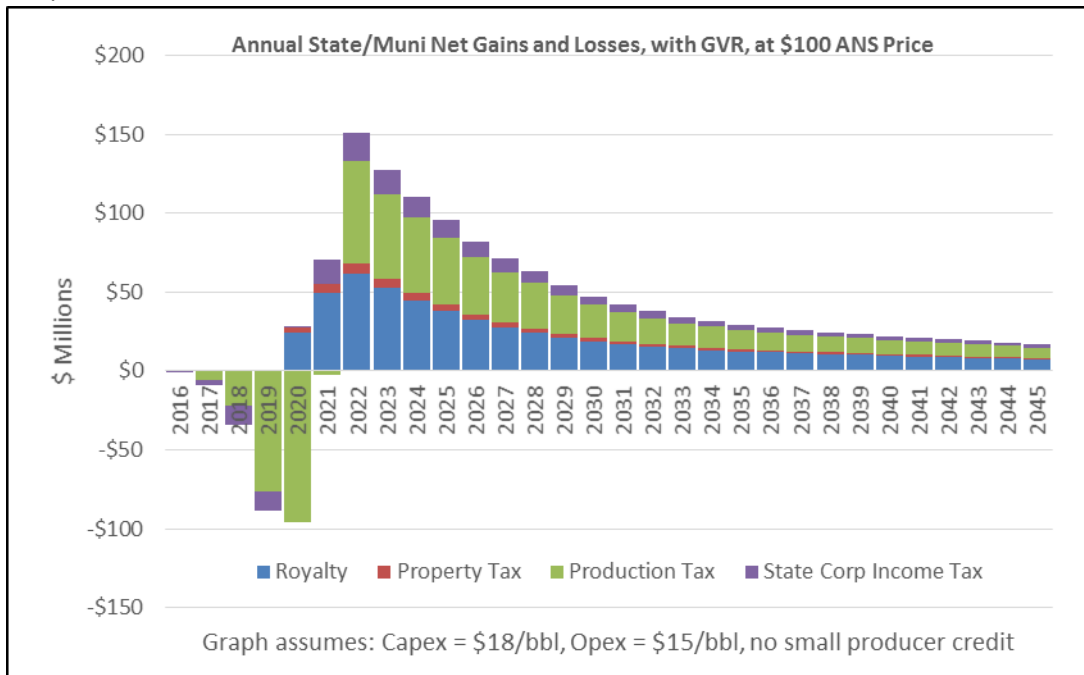
## WITH 20% GVR, New Fields Analysis

Graph 12: Total Annual State/Muni Net Gains and Losses and NPV 6.15%, With 20% GVR, \$80 ANS



Total Annual State/Muni Losses = \$209 million
Total Annual State/Muni Gains = \$861 million
<b>Net State/Muni Gain (Loss) = \$652 million</b>
State/Muni NPV 0.0615 = \$242 million

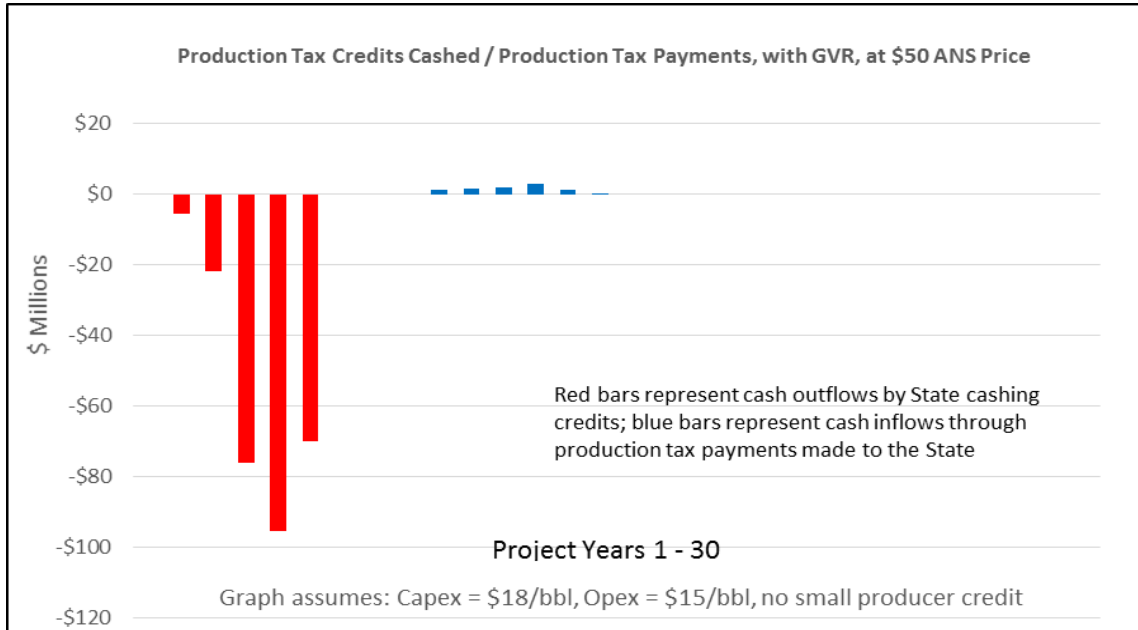
Graph 13: Total Annual State/Muni Net Gains and Losses and NPV 6.15%, With 20% GVR, \$100 ANS



Total Annual State/Muni Losses = \$201 million
Total Annual State/Muni Gains = \$1263 million
<b>Net State/Muni Gain (Loss) = \$1062 million</b>
State/Muni NPV 0.0615 = \$444 million

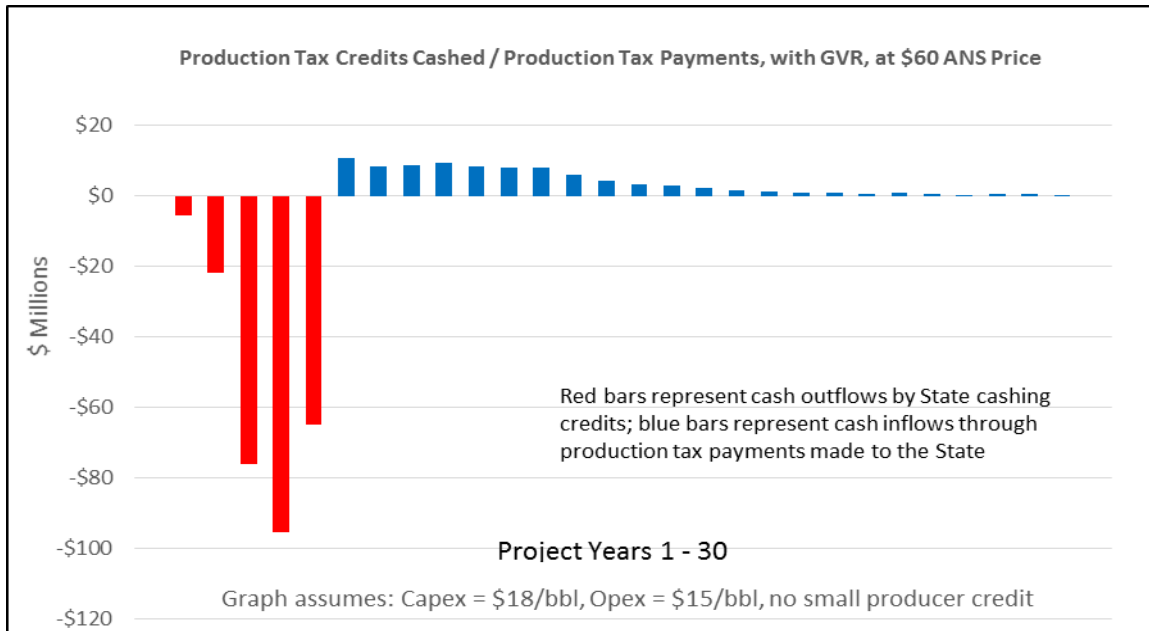
## WITH 20% GVR, New Fields Analysis – Production Tax Specific

Graph 14: Production Tax Credits Cashed / Production Tax Payments and NPV 6.15%, With 20% GVR, \$50 ANS



Production Tax Credits Used = \$269 million
Production Tax Paid = \$9 million
<b>Net Production Tax = \$-260 million</b>
Production Tax NPV 0.0615 = \$-198 million

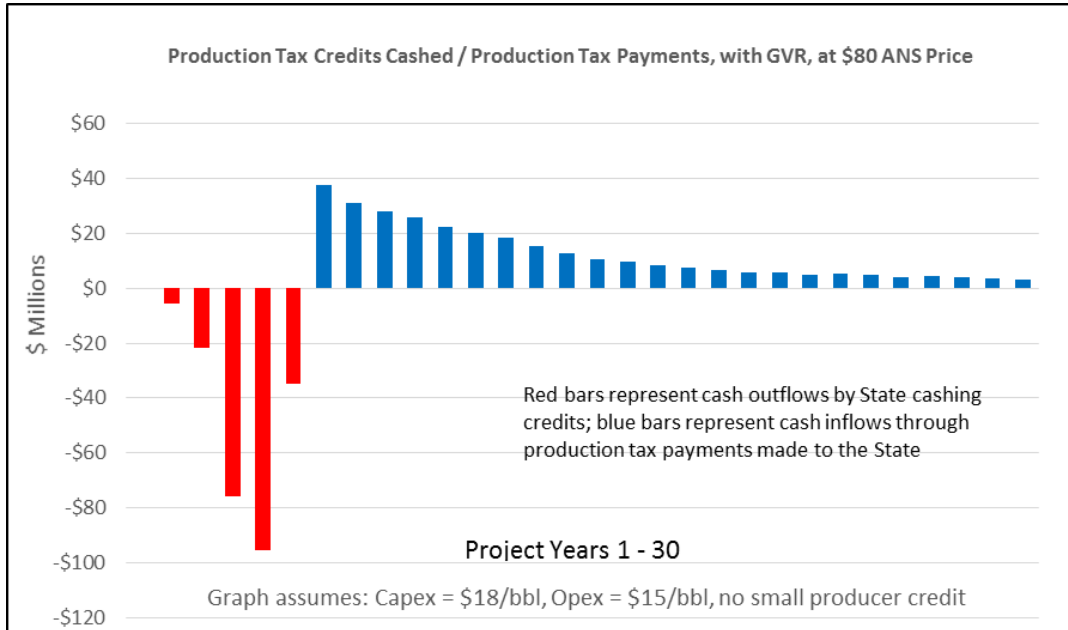
Graph 15: Production Tax Credits Cashed / Production Tax Payments and NPV 6.15%, With 20% GVR, \$60 ANS



Production Tax Credits Used = \$264 million
Production Tax Paid = \$88 million
<b>Net Production Tax = \$-175 million</b>
Production Tax NPV 0.0615 = \$-155 million

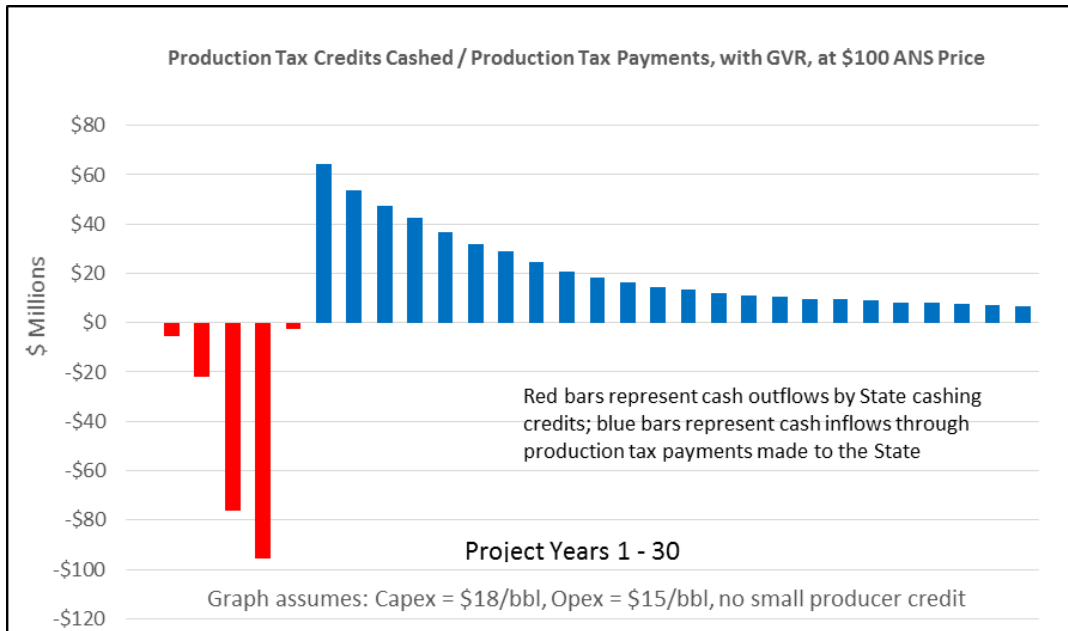
## WITH 20% GVR, New Fields Analysis – Production Tax Specific

Graph 16: Production Tax Credits Cashed / Production Tax Payments and NPV 6.15%, With 20% GVR, \$80 ANS



Production Tax Credits Used = \$234 million
Production Tax Paid = \$300 million
<b>Net Production Tax = \$67 million</b>
Production Tax NPV 0.0615 = \$-36 million

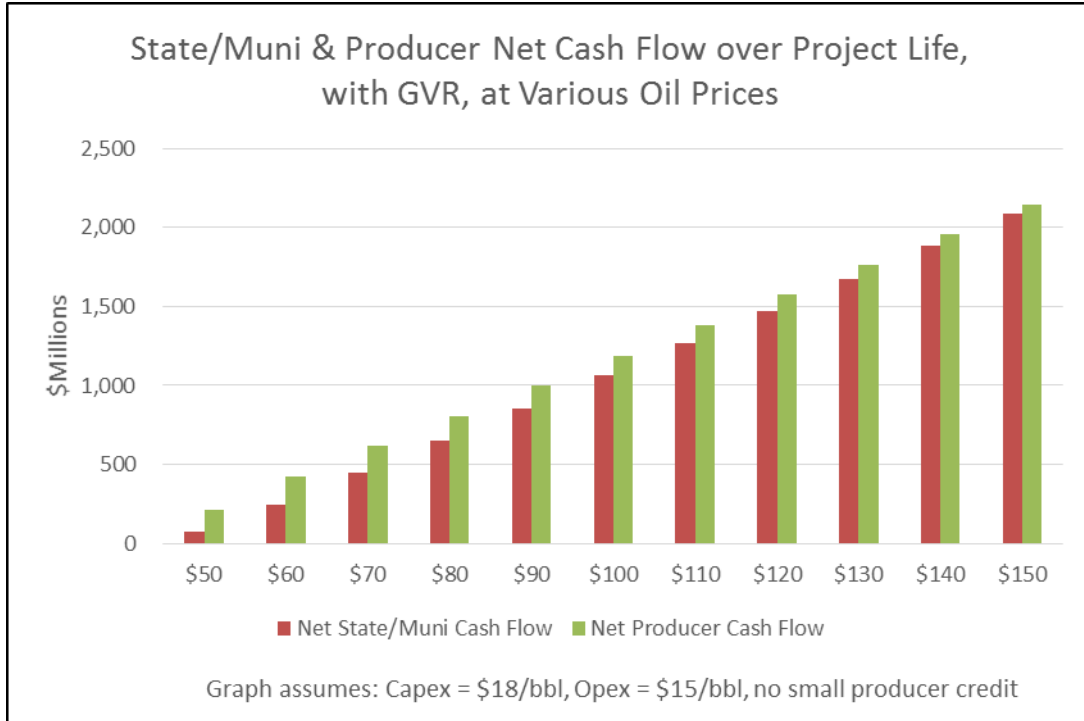
Graph 17: Production Tax Credits Cashed / Production Tax Payments and NPV 6.15%, With 20% GVR, \$100 ANS



Production Tax Credits Used = \$201 million
Production Tax Paid = \$512 million
<b>Net Production Tax = \$311 million</b>
Production Tax NPV 0.0615 = \$84 million

## WITH 20% GVR, New Fields Analysis

Graph 18: State/Muni & Producer Net Cash Flow over Project Life, with GVR



Net present values for State/Muni total revenues and an approximation of General Fund Unrestricted Revenue to the State at the prices you indicated for fields with no GVR and fields with a 20% GVR are shown below. Following that is a table with net present values for production tax only. The discount rate used in the analysis is 6.15% -- the earnings rate used Permanent Fund for investments as of September 2015.

### Net Present Value of 30-Year Project Total Revenues to State/Muni at NPV6.15%

Oil Price	NO GVR	With 20% GVR	NO GVR	With 20% GVR
	State/Muni Total Revenues NPV 6.15% in \$Millions	State/Muni Total Revenues NPV 6.15% in \$Millions	GFUR* Approximation NPV 6.15% in \$Millions	GFUR* Approximation NPV 6.15% in \$Millions
\$50	-13	-44	-72	-103
\$60	63	41	-4	-26
\$80	288	242	205	160
\$100	556	444	459	346

Note: The values shown in columns two and three of this table include all State and muni revenues from this project, including all taxes (production, corp income and property), and and all royalties. The fourth and fifth columns are the same as the previous two columns, minus 25% of royalties and minus the municipal share of property tax (about 92.5%), approximating General Fund Unrestricted Revenue from the project. The State currently receives about 7.5% of property tax collected from North Slope properties.

**Net Present Value of 30-Year Project  
Production Tax Only to State at NPV6.15%**

Oil Price	<b>NO GVR</b>	<b>With 20% GVR</b>
	<u>Production Tax Only</u> NPV 6.15% in \$Millions	<u>Production Tax Only</u> NPV 6.15% in \$Millions
\$50	-165	-198
\$60	-132	-155
\$80	13	-36
\$100	204	84

Note: The values shown in this table include only production tax revenue.