



# Alaska Department of Revenue



Revenue Forecast  
Presentation to Senate Finance Committee  
January 23, 2015

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Alaska Department of Revenue



# FALL 2014

## Revenue Forecast



# Methods: What Do We Forecast at DOR?

## Mostly Petroleum and Non-petroleum Revenue

- We directly forecast **Petroleum Revenue**
  - the largest component, accounting for 88% of state unrestricted revenue in FY 2014
  - “Petroleum Revenue” includes severance taxes, royalties, corporate income tax, and all other revenue from oil companies
- We directly forecast **Non-petroleum Revenue**
- We use someone else’s forecast for **Investment Revenue**
- We use the Federal Revenue authorized for spending as the forecast
  - It is typically 20%-30% more than actually gets spent.
- DOR compiles all different revenue streams and compiles them in the annual Revenue Sources Book

# Oil Revenue Forecasting

## Three Factors for Production Tax Revenue Forecast

$\text{REVENUE} = (\text{Net value} * \text{Tax Rate}) - \text{Credits}$   
taken against liability

$\text{Net value} = (\text{Price} * \text{Production}) - \text{Costs}$

1. Price

2. Production

3. Costs

1. Capital expenditures

2. Operating expenditures

3. Transportation cost



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## FALL 2014 HIGHLIGHTS

- Input changes relative to the 2014 Spring Forecast
  - Oil price levels have been reduced sharply in the near-term.
  - Oil production has been increased for all years.
  - Correspondingly, unrestricted revenues have been revised downward.
- Revenue impacts largely due to changes in oil price assumptions.
- Lease expenditure (or investment) in the oil fields maintained high levels which has increased expected production.

# FALL 2014

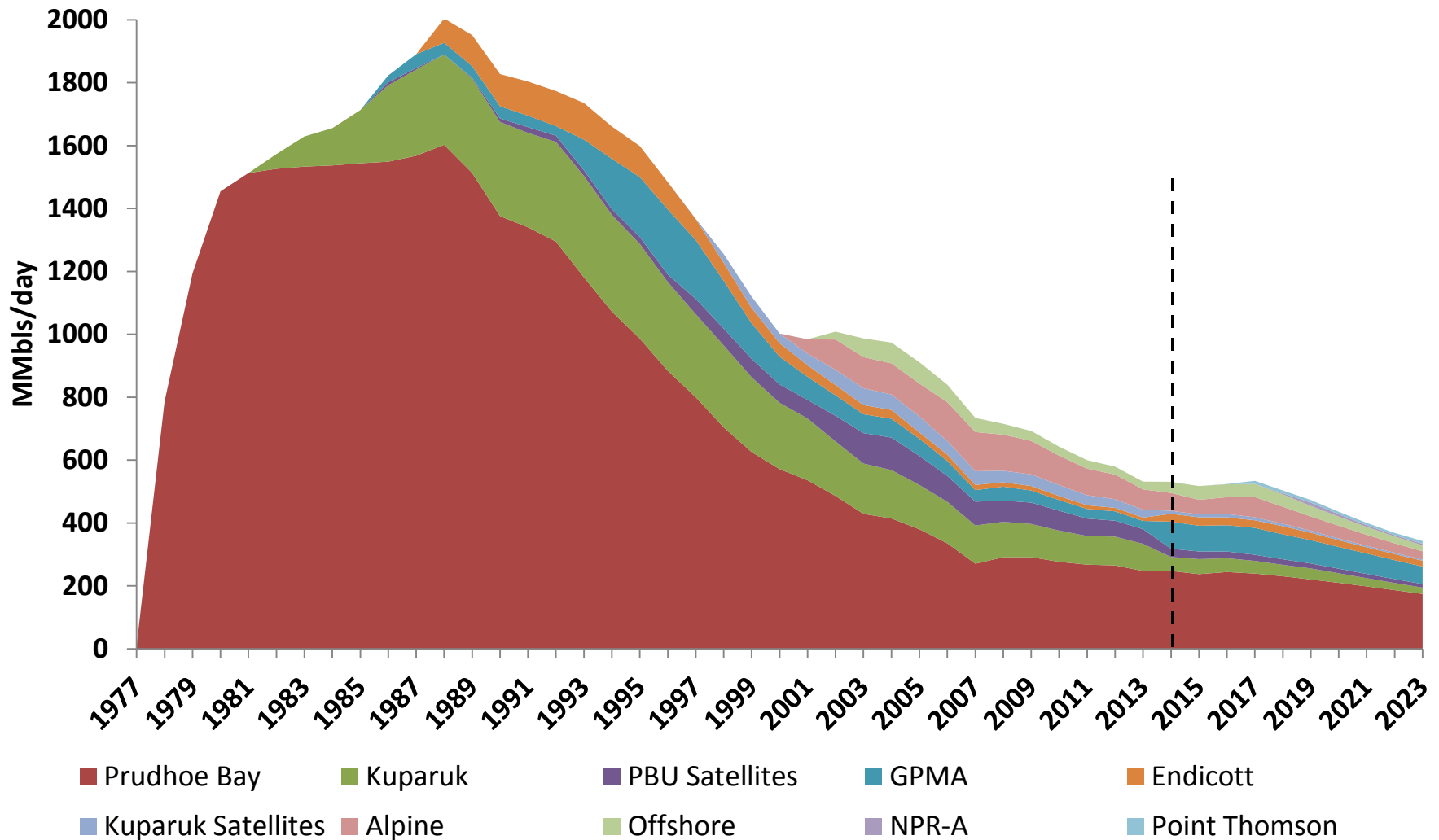
## Production Forecast



# DEPT. OF REVENUE INVESTMENT CASES

- **Unrisked Investment Case:**
  - This is a technical forecast provided by a DOR consulting petroleum engineering service.
  - It is based upon the expectations and best estimates of oil companies.
  - It includes forecasts from the production from developed, undeveloped oil reserves and contingent resources
- **Adjusted Expected Investment Case:**
  - This is the official revenue forecast.
  - Unrisked investment case adjusted for risks and uncertainties.
  - It is used for forecasting revenue beyond two years.
  - All developed reserves remain un-risked, but less certain projects are weighted over time.
- **Low Investment Case:**
  - This includes forecasts strictly from projects and wells that are already developed. This is risk weighted only at the technical level.
  - If no new projects came to fruition, this is what we would expect the future to look like.

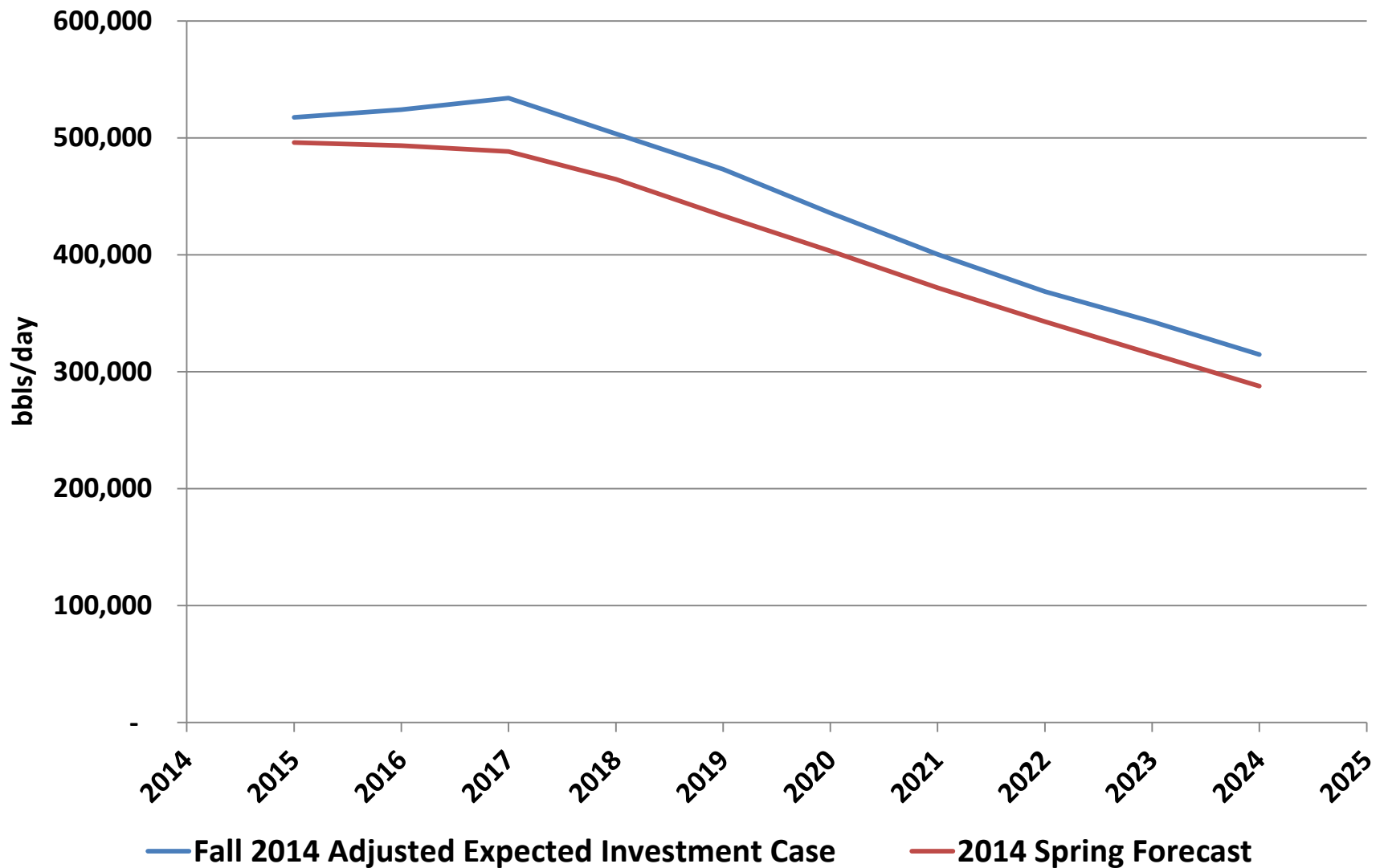
# PRODUCTION HISTORY WITH ADJUSTED EXPECTED INVESTMENT CASE



Source: Department of Revenue - Revenue Sources Book Fall 2014



# ANS PRODUCTION COMPARISON

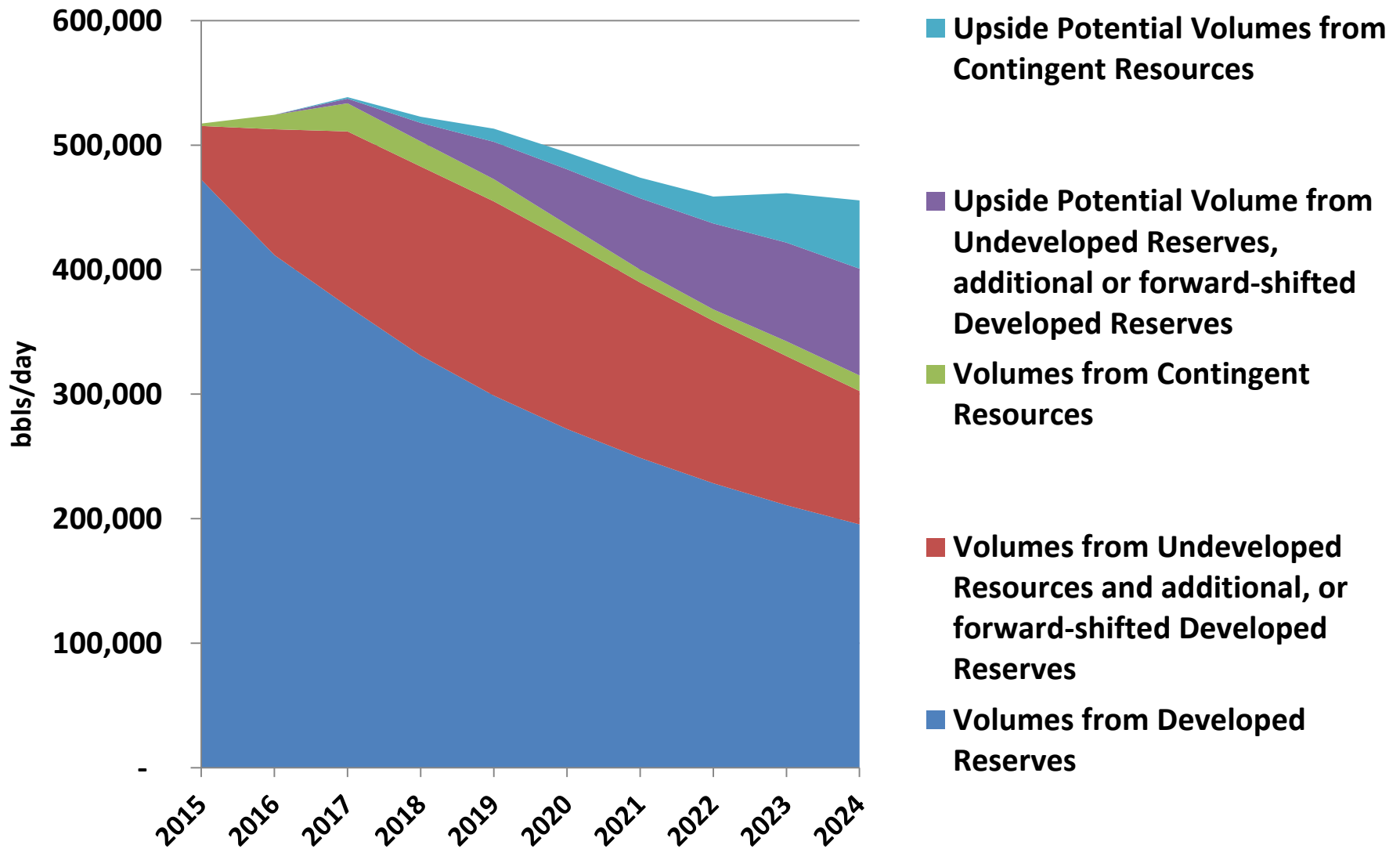


Source: Department of Revenue - Revenue Sources Book Fall 2014 / Spring 2014

# ANS OIL PRODUCTION FORECAST

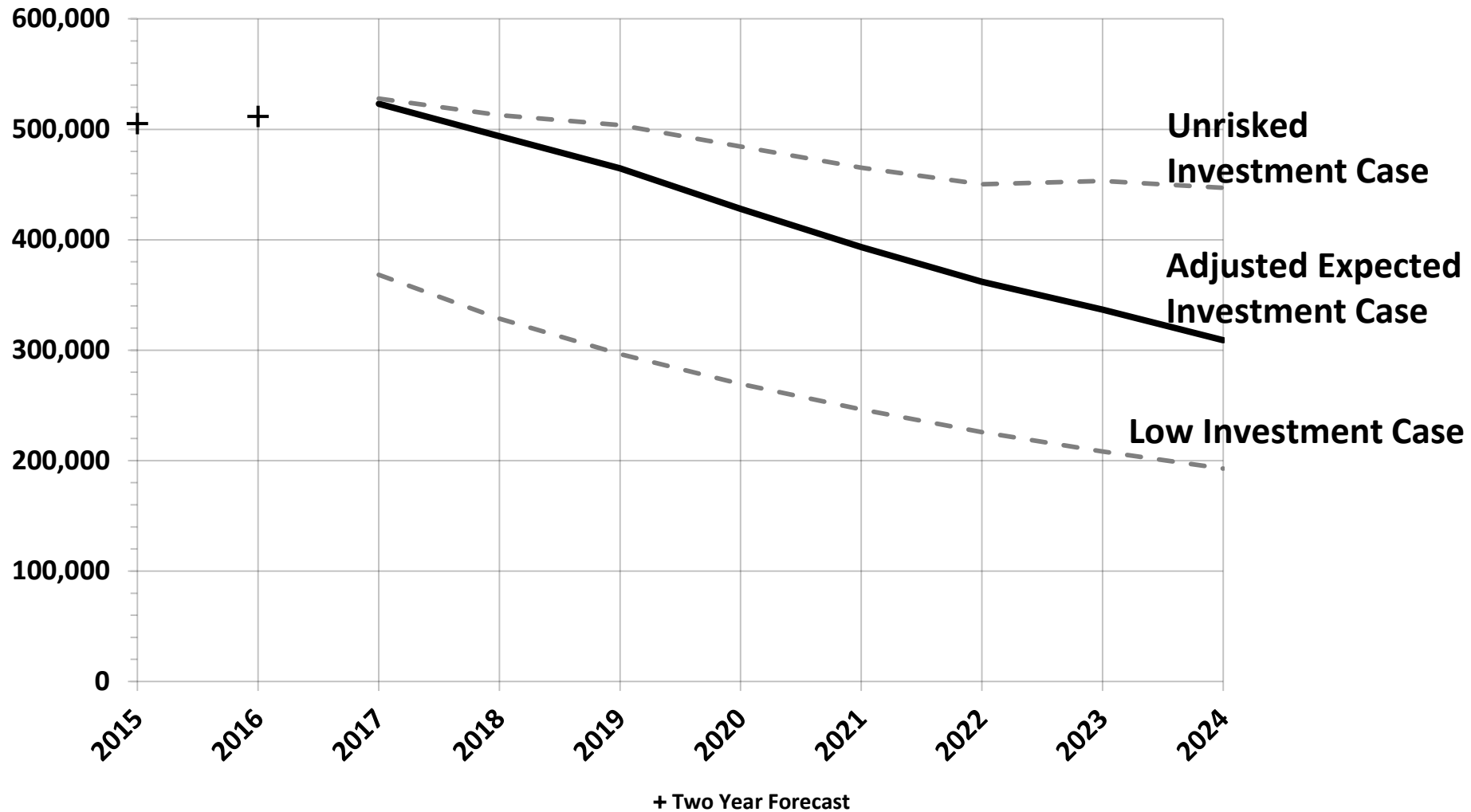
- **Volumes from Developed Reserves (Currently Producing):**
  - Oil from wells that are in production and following typical reservoir engineering optimization without major investment.
  - These volumes are from projects already in place and thus remain unadjusted for risk.
- **Volumes from Undeveloped Reserves and additional/accelerated Developed Reserves:**
  - Oil from projects that will add incremental oil to existing fields or will bring new fields into production.
  - Must have senior management approval and be allocated funds in the company's budget.
  - These volumes are risk-adjusted for commercial uncertainty.
- **Volumes from Contingent Resources:**
  - Oil from projects that are likely to occur in the future, but have not met the requirements of the previous category.
  - Oil reserves must be known and recovery is technically possible with current technology.
  - These volumes are more strongly risk-adjusted due to the commercial uncertainty and other risks.
- **DR + UDR + CR = Unrisked Investment Case**

# NORTH SLOPE PRODUCTION FORECAST



Source: Department of Revenue - Revenue Sources Book Fall 2014

# PRODUCTION FORECAST

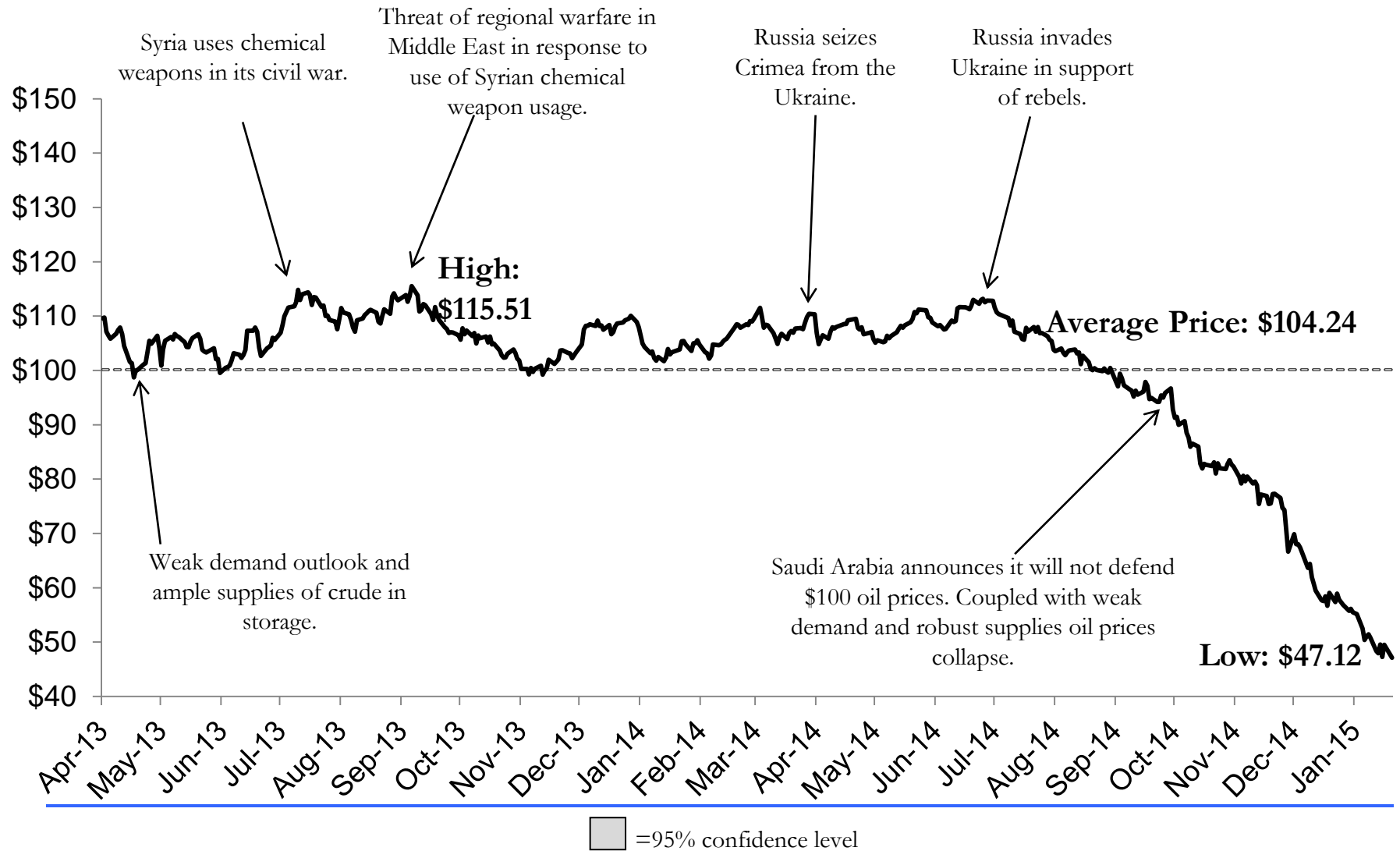


Source: Department of Revenue - Revenue Sources Book Fall 2014

# FALL 2014 Price Forecast

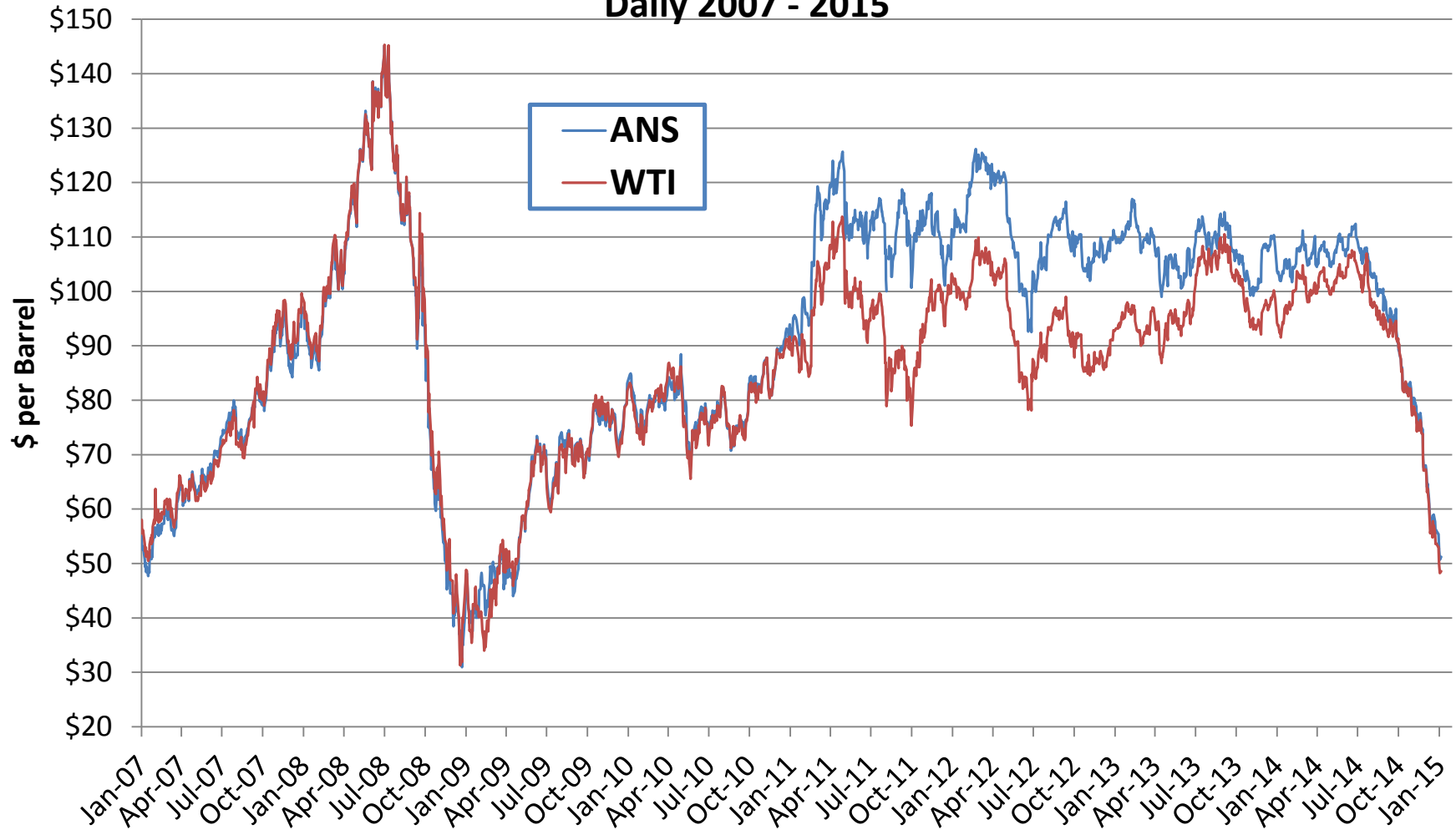


# Alaska North Slope Crude West Coast Price



# Alaska North Slope Crude West Coast and West Texas Intermediate Prices

**ANS and WTI Prices  
Daily 2007 - 2015**



Source: Prevailing Values, DOR Tax Division website

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# KEY OIL PRICE DRIVERS

- Supply & Demand
  - There are two main factors to monitor.
    - Global spare capacity, since it is both a reflection of supply and demand. In other words, the Organization of Petroleum Exporting Countries (OPEC) spare capacity (flipping a switch) is key.
    - Cost of developing new oil supply.
- Current Events
  - Weak global demand
  - Saudi trades market share for lower prices



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# PRICE FORECAST METHODOLOGY

- Price Forecasting Session
  - Held a day long oil price forecasting session on October 7, 2014.
  - Speakers provided insight into oil markets, probability and analysis, modeling, and financial aspects of commodity markets.
  - 37 participants from state government, academia and the private sector.
    - DOR, DNR, DOL, OMB, University, Legislative Finance and outside participants.
  - Participants were asked to forecast P10, median, and P90 real ANS prices for the West Coast.
    - Real prices were converted to nominal using a 2.25% inflation assumption.
    - Official forecast is based on probabilistic outcomes from Price Forecast Session and DOR price model.

## Fall 2014 ANS Revenue Forecast Prices

	FY 2015 Q1	FY 2015 Q2	FY 2015 Q3	FY 2015 Q4	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
90%		82.41	98.02	100.69	95.74	104.02	130.69	138.97	145.38	150.89	160.00	163.60	172.06	179.59	184.88
80%		83.25	87.32	89.55	90.48	91.25	122.44	129.42	134.84	140.92	147.99	151.52	158.75	165.74	170.34
70%		81.49	82.08	83.60	87.25	84.99	115.92	121.94	126.51	132.62	138.32	141.66	148.05	154.50	158.55
60%		80.11	78.12	79.03	84.77	80.31	110.10	115.31	119.07	124.93	129.57	132.64	138.37	144.28	147.81
50%	101.82	78.72	74.31	74.88	82.43	76.12	104.55	109.04	112.00	117.36	121.14	123.87	129.04	134.39	137.41
40%		77.08	69.87	70.32	79.77	71.62	99.01	102.81	104.93	109.54	112.61	114.92	119.61	124.34	126.85
30%		75.00	63.80	64.60	76.31	66.03	93.18	96.30	97.51	101.08	103.54	105.33	109.60	113.61	115.56
20%		72.15	54.05	55.76	70.94	57.72	86.66	89.06	89.20	91.25	93.25	94.33	98.25	101.37	102.69
10%		67.69	33.65	35.35	59.63	40.84	78.41	80.00	78.70	78.24	80.00	80.00	83.64	85.52	86.00

- Official forecast is one value within a range of possible outcomes
- Probabilities as of early December 2014
- FY 2015 & FY 2016 are from an internal DOR probabilistic pricing model.
- FY 2017 and beyond are from the Fall 2014 price forecast session held on October 7, 2014.

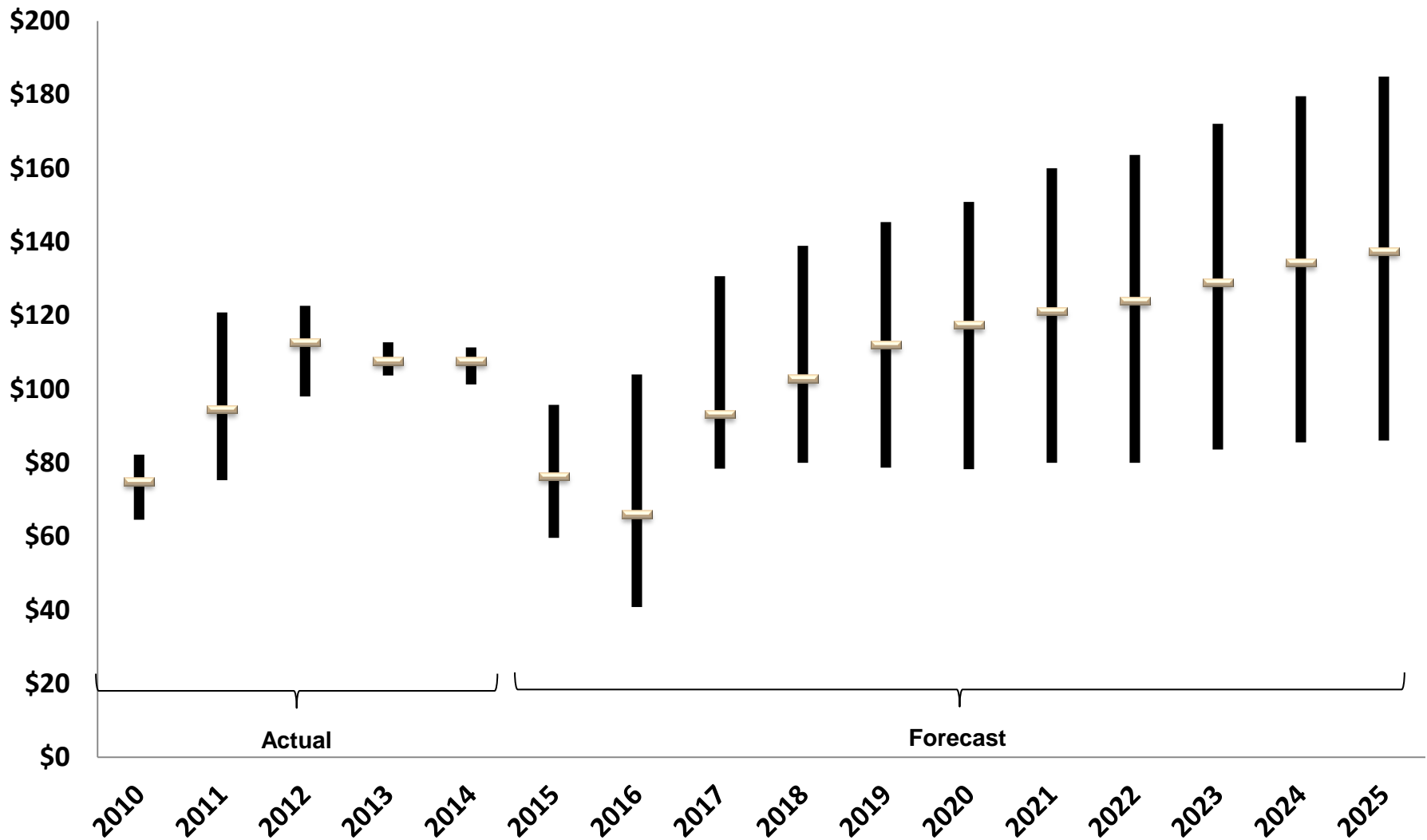
## “What if the oil price is...” for the last half of FY 2015

		ANS Price Sensitivity									
"What if price is..."		\$ 90	\$ 85	\$ 80	\$ 75	\$ 70	\$ 65	\$ 60	\$ 55	\$ 50	
Actual	7/1/2014	107.63	107.63	107.63	107.63	107.63	107.63	107.63	107.63	107.63	
	8/1/2014	101.78	101.78	101.78	101.78	101.78	101.78	101.78	101.78	101.78	
	9/1/2014	96.05	96.05	96.05	96.05	96.05	96.05	96.05	96.05	96.05	
	10/1/2014	84.91	84.91	84.91	84.91	84.91	84.91	84.91	84.91	84.91	
	11/1/2014	77.41	77.41	77.41	77.41	77.41	77.41	77.41	77.41	77.41	
Estimate	12/1/2014	90.00	85.00	80.00	75.00	70.00	65.00	60.00	55.00	50.00	
	1/1/2015	90.00	85.00	80.00	75.00	70.00	65.00	60.00	55.00	50.00	
	2/1/2015	90.00	85.00	80.00	75.00	70.00	65.00	60.00	55.00	50.00	
	3/1/2015	90.00	85.00	80.00	75.00	70.00	65.00	60.00	55.00	50.00	
	4/1/2015	90.00	85.00	80.00	75.00	70.00	65.00	60.00	55.00	50.00	
	5/1/2015	90.00	85.00	80.00	75.00	70.00	65.00	60.00	55.00	50.00	
	6/1/2015	90.00	85.00	80.00	75.00	70.00	65.00	60.00	55.00	50.00	
Forecast Price		\$ 91.48	\$ 88.57	\$ 85.65	\$ 82.73	\$ 79.82	\$ 76.90	\$ 73.98	\$ 71.07	\$ 68.15	

Forecast as of December 1, 2014

Source for actuals: Prevailing Values, DOR Tax Division website

# HISTORICAL ANS WEST COAST FY OIL PRICE BANDS: ANNUAL AVERAGE AND OFFICIAL FY2014 FORECAST



Source: Department of Revenue - Revenue Sources Book Fall 2014

# FALL 2014

## Revenue Forecast



# GENERAL FUND UNRESTRICTED OIL REVENUES

(\$ millions)	Actual		Forecast			
Revenue Type	2014	Percent	2015	Percent	2016	Percent
<b>Petroleum Revenue</b>						
Net Royalty (less PF & SF)	\$1,712.4	31.7%	\$1,117.5	44.3%	\$1,007.1	46.5%
Production Tax	\$2,598.2	48.2%	\$523.6	20.8%	\$308.4	14.2%
Corporate Income Tax	\$316.6	5.9%	\$249.2	9.9%	\$195.4	9.0%
Property Tax	\$128.1	2.4%	\$128.9	5.1%	\$125.2	5.8%
<b>Total Petroleum Revenue</b>	<b>\$4,755.3</b>	<b>88.2%</b>	<b>\$2,019.5</b>	<b>80.1%</b>	<b>\$1,636.1</b>	<b>75.6%</b>
<b>Non-petroleum Revenue</b>	<b>\$638.7</b>	<b>9.4%</b>	<b>\$532.3</b>	<b>19.9%</b>	<b>\$560.6</b>	<b>24.4%</b>
<b>Total Revenue</b>	<b>\$5,394.0</b>	<b>100.0%</b>	<b>\$2,551.5</b>	<b>100.0%</b>	<b>\$2,196.7</b>	<b>100.0%</b>

Source: Department of Revenue - Revenue Sources Book Fall 2014

# GENERAL FUND UNRESTRICTED REVENUES

## NON-PETROLEUM

(\$ millions)	Actual		Forecast			
Revenue Type	2014	Percent	2015	Percent	2016	Percent
<b>Taxes</b>						
Non-petroleum						
Corporate Income	\$104	16.3%	\$114	15.4%	\$125	21.3%
Mining License Tax	\$24	3.8%	\$33	7.9%	\$35	7.0%
Insurance Premium	\$55	8.6%	\$57	9.5%	\$59	9.4%
Tobacco	\$43	6.7%	\$44	7.7%	\$42	7.2%
Motor Fuel	\$39	6.1%	\$40	7.2%	\$40	6.8%
Other Taxes	<u>\$70</u>	11.0%	<u>\$66</u>	11.5%	<u>\$64</u>	11.2%
<b>Subtotal Taxes</b>	<b>\$335</b>	<b>52.4%</b>	<b>\$355</b>	<b>59.3%</b>	<b>\$365</b>	<b>62.9%</b>
<b>Investments</b>	<b>\$130</b>	<b>20.3%</b>	<b>\$30</b>	<b>15.1%</b>	<b>\$32</b>	<b>14.2%</b>
<b>Other</b>	<b>\$174</b>	<b>27.2%</b>	<b>\$147</b>	<b>25.6%</b>	<b>\$164</b>	<b>22.9%</b>
<b>Total Non-petroleum</b>	<b>\$639</b>	<b>100.0%</b>	<b>\$532</b>	<b>100.0%</b>	<b>\$561</b>	<b>100.0%</b>

Source: Department of Revenue - Revenue Sources Book Fall 2014

# TOTAL REVENUE FORECAST – FY 2015 & 2016

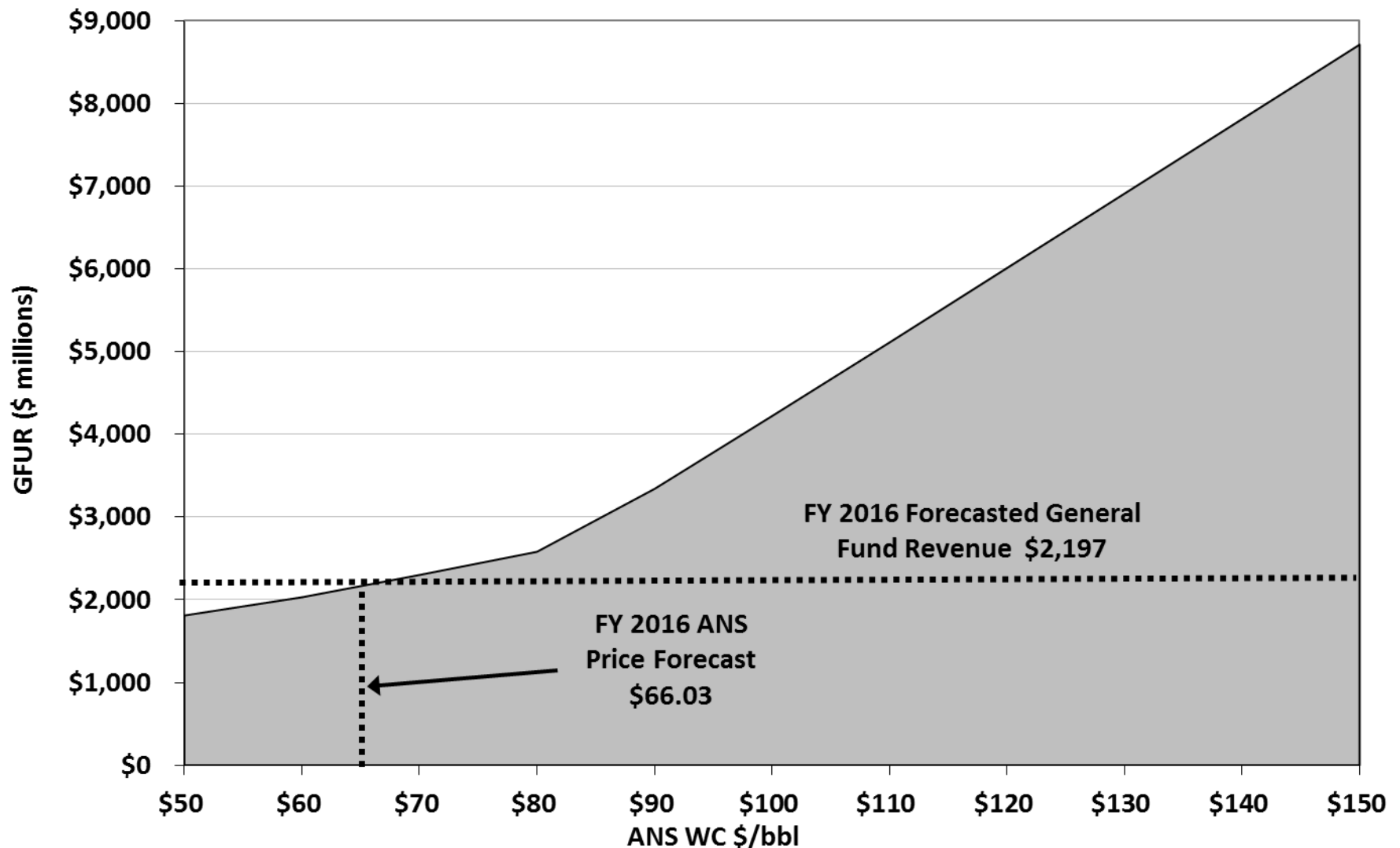
(\$ millions)		Actual		Forecast	
Revenue Type		FY 2014	FY 2015	FY 2016	
<b>Unrestricted General Fund</b>					
Oil Revenue		4,755.3	2,019.2	1,636.1	
Non-Oil Revenue*		508.5	502.3	528.2	
Investment Revenue		130.2	30.0	32.4	
<b>Total Unrestricted Revenue</b>		<b>5,394.0</b>	<b>2,551.5</b>	<b>2,196.7</b>	
<b>Designated General Fund</b>					
Non-Oil Revenue*		289.6	323.1	322.1	
Investment Revenue		66.3	20.4	35.8	
<b>Subtotal</b>		<b>355.9</b>	<b>343.5</b>	<b>357.9</b>	
<b>Other Restricted Revenue</b>					
Oil Revenue		927.6	512.9	465.6	
Non-Oil Revenue*		183.9	229.2	230.4	
Investment Revenue		7,861.4	3,319.2	3,537.2	
<b>Subtotal</b>		<b>8,972.9</b>	<b>4,061.3</b>	<b>4,233.2</b>	
<b>Federal Revenue</b>					
Oil Revenue		6.8	5.0	5.0	
Federal Receipts		2,511.9	3,126.4	3,126.4	
<b>Subtotal</b>		<b>2,518.7</b>	<b>3,131.4</b>	<b>3,131.4</b>	
<b>Total State Revenue</b>		<b>17,241.5</b>	<b>10,087.7</b>	<b>9,919.2</b>	

\*Except Federal and Investment

Source: Department of Revenue - Revenue Sources Book Fall 2014



## FY 2016 General Fund Unrestricted Revenue, with Price Sensitivity



Source: Fall 2014 Revenue Sources Book, page 83

# Changes from Spring 2014 Forecast



# COMPARISON – FALL 2014 vs. SPRING 2014 FORECASTS

<b>FY 2015</b>	<b>Spring 2014</b>	<b>Fall 2014</b>	<b>Difference</b>	<b>Change</b>
<b>Oil Price (ANS West Coast per barrel)</b>	\$105.06	\$76.31	(\$28.75)	-27.4%
<b>ANS Oil Production (MMbbls/day)</b>	495.9	509.5	13.63	2.7%
<b>GFUR (\$ millions)</b>	4,522.9	\$2,551.5	(\$1,971.4)	-43.6%

<b>FY 2016</b>	<b>Spring 2014</b>	<b>Fall 2014</b>	<b>Difference</b>	<b>Change</b>
<b>Oil Price (ANS West Coast per barrel)</b>	\$107.69	\$66.03	(\$41.66)	-38.7%
<b>ANS Oil Production (MMbbls/day)</b>	493.5	524.1	\$30.59	6.2%
<b>GFUR* (\$ millions)</b>	4,744.2	\$2,196.7	(\$2,547.5)	-53.7%

## CONTRIBUTORS OF CHANGE IN FY2015 REVENUE FORECAST

Component	Spring 2014 Forecast	Fall 2014 Forecast	Change
ANS Production (MMbbls/day)	495.9	509.5	13.6
ANS Price	\$105.06	\$76.31	(\$28.75)
ANS Deductible Lease Expenditures (\$ millions)	7,266	7,049	(217 )
Transportation Costs (\$/barrel)	9.82	9.31	(0.51)

Average Production Tax Value per barrel is reduced by \$27.

Simplified calculation, does not represent any specific company value.

Assumes 12.5% royalty.

## CONTRIBUTORS OF CHANGE IN FY2016 REVENUE FORECAST

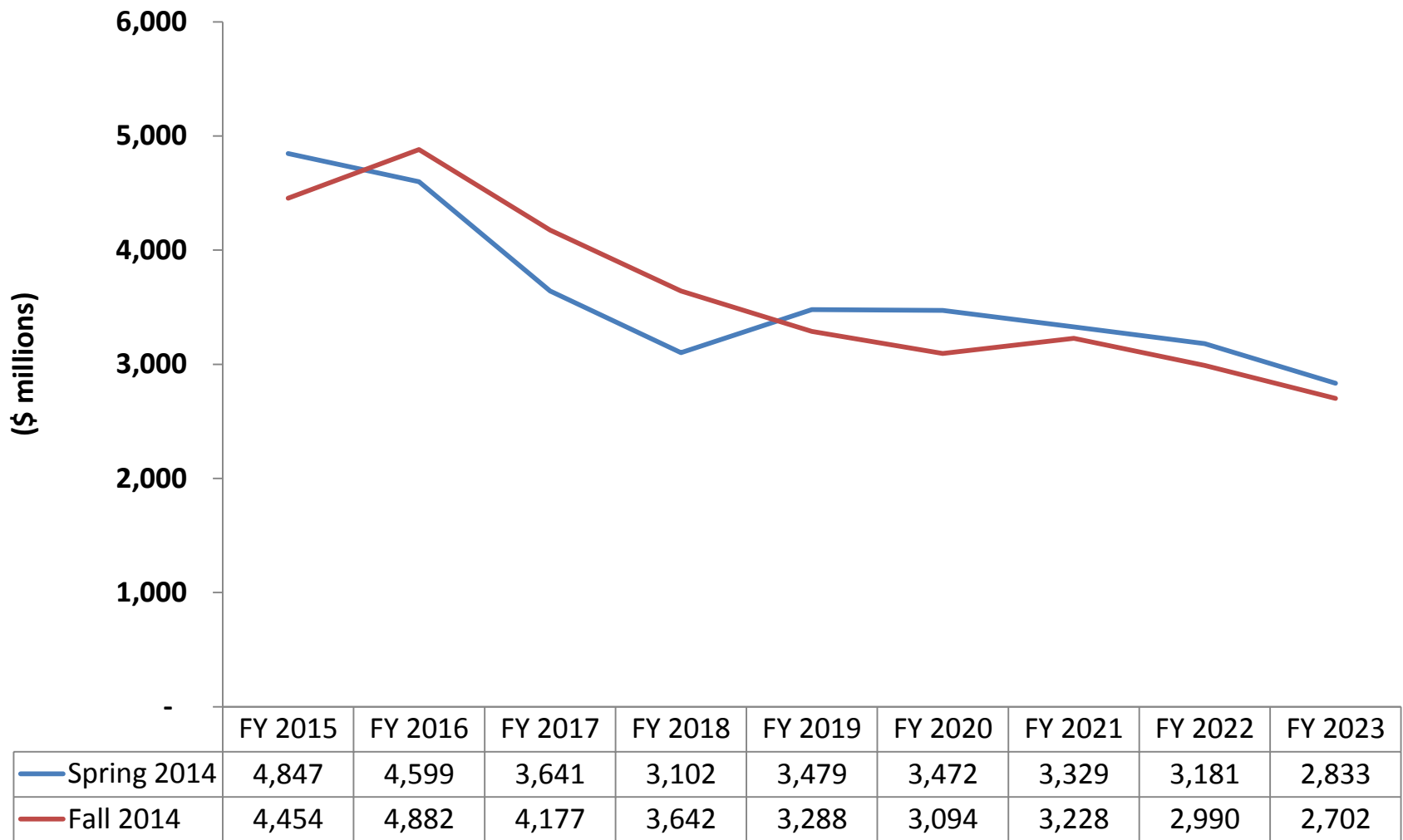
Component	Spring 2014 Forecast	Fall 2014 Forecast	Difference
ANS Production (MMbbls/day)	493.5	524.1	30.6
ANS Price	\$107.69	\$66.03	(\$41.66)
ANS Deductible Lease Expenditures (\$ millions)	7,146	7,273	127
Transportation Costs (\$/barrel)	9.62	9.17	(0.45)

Average Production Tax Value per barrel is reduced by \$39.

Simplified calculation, does not represent any specific company value.

Assumes 12.5% royalty.

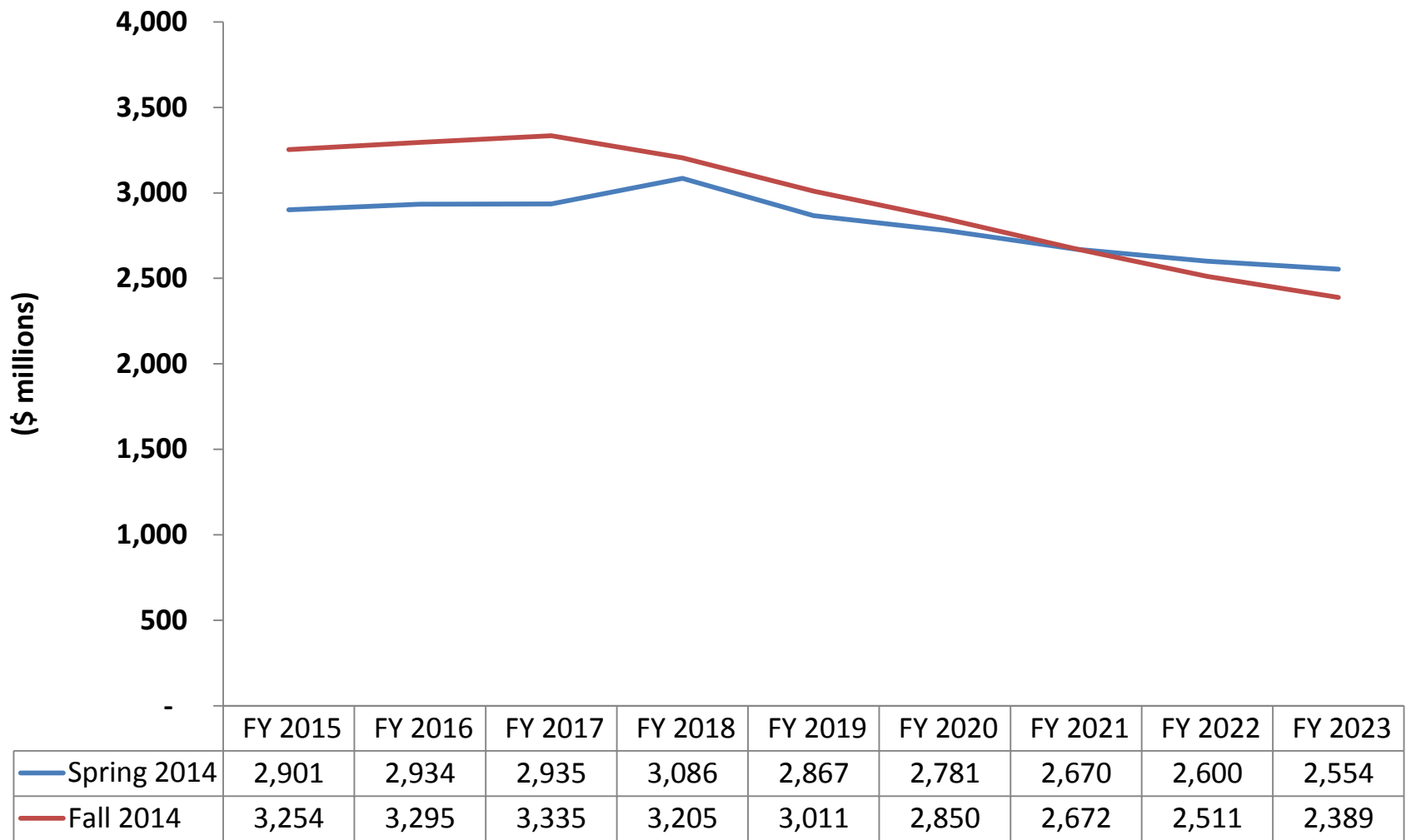
# NORTH SLOPE CAPITAL EXPENDITURE FORECAST CHANGE



Note: These estimates include lease expenditures by companies that are not expected to have a tax liability.

Source: Department of Revenue - Revenue Sources Book Fall 2014 / Spring 2014

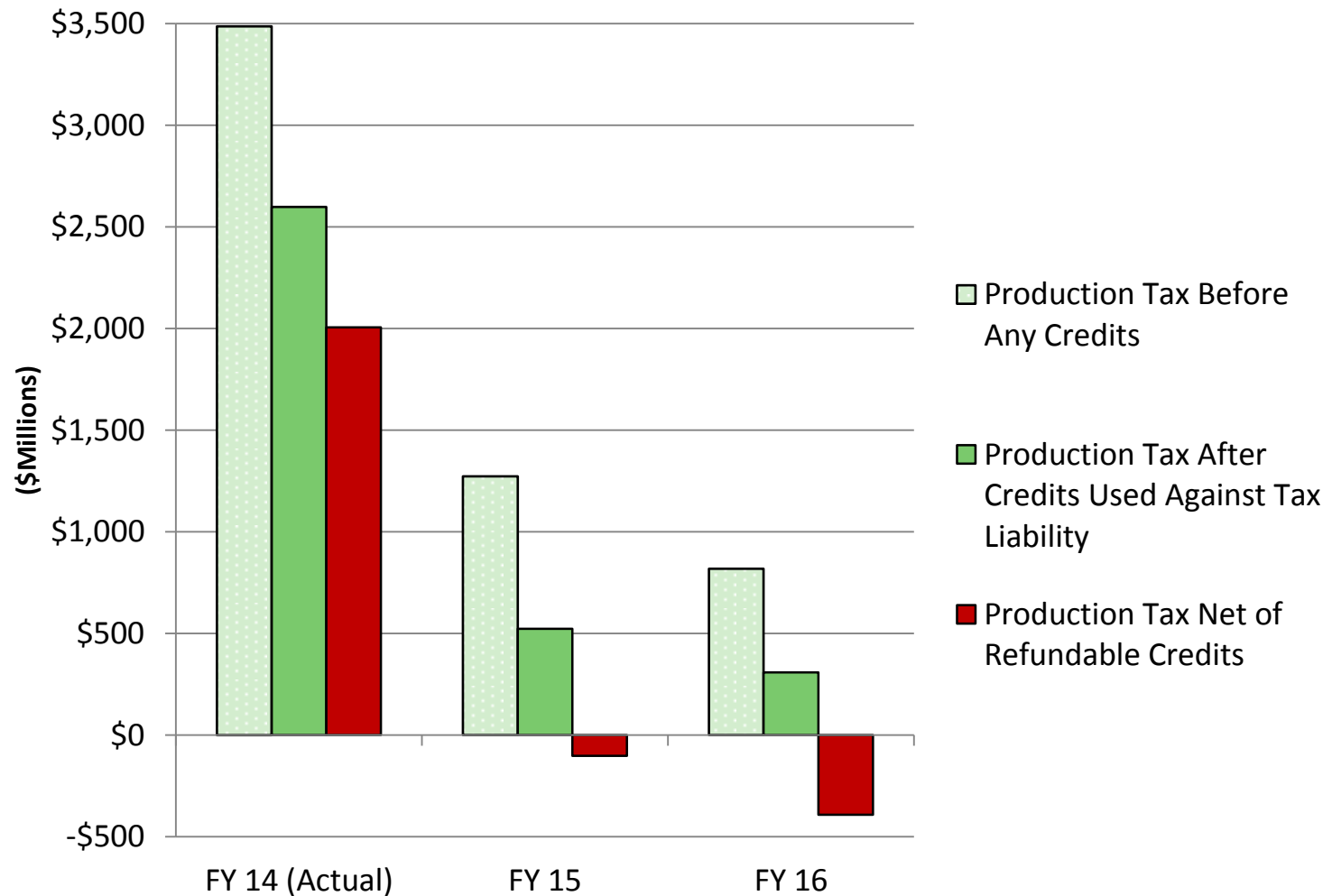
# NORTH SLOPE OPERATING EXPENDITURE FORECAST CHANGE



Note: These estimates include lease expenditures by companies that are not expected to have a tax liability.

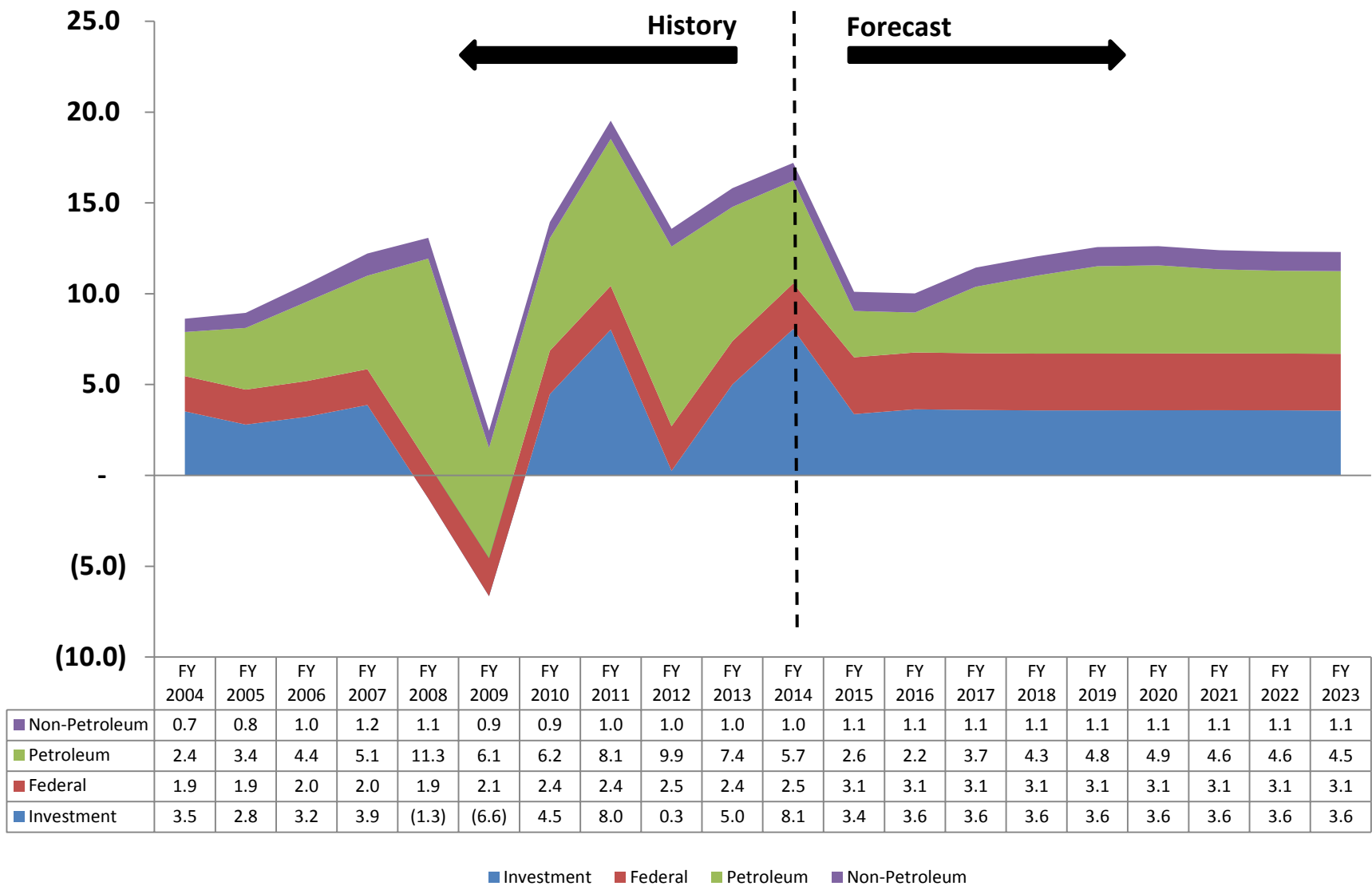
Source: Department of Revenue - Revenue Sources Book Fall 2014 and Spring 2014 forecast

## Net Tax Credits versus Production Tax





# FALL 2014 TOTAL REVENUE FORECAST



Source: Department of Revenue - Revenue Sources Book Fall 2014

\*GFUR does not reflect true investment revenue forecast.

# UNRESTRICTED REVENUE FORECAST 2015-2023

	Actual		Forecast								
	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
<b>ANS WC Oil Price (\$/bbl)</b>	107.57	107.57	76.31	66.03	93.18	102.81	112.00	117.36	121.14	123.87	129.04
<b>Total ANS Production (State + Federal) (MMbbls/day)</b>	531.6	531.1	509.5	524.1	534.1	503.5	473.2	435.8	400.4	368.5	342.9
<b>Deductible Lease Expenditures (\$ millions)</b>	4,924	6,551	7,049	7,273	7,096	6,569	6,087	5,733	5,654	5,291	4,959
<b>General Fund Unrestricted Revenues* (\$ millions)</b>	6,929	5,394	2,552	2,197	3,657	4,292	4,808	4,853	4,628	4,556	4,548
<b>PTV per Taxable Barrel</b>	\$67.76	\$57.56	\$22.37	\$13.43	\$41.22	\$50.93	\$59.84	\$63.81	\$63.74	\$64.86	\$68.83

Source: Department of Revenue - Revenue Sources Book Fall 2014

# THANK YOU

Please find our contact information below:

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