

New Mexico Oil Royalty Forecast Process

Introduction

This article explains the process that the Bureau of Business and Economic Research (BBER) uses to forecast oil royalties¹ for the New Mexico State Land Office (SLO). BBER also forecasts natural gas royalties for the SLO, but the process is nearly identical, so it is not explained in this article. The SLO uses the royalty forecasts to estimate the non-renewable revenue contribution it will make to the Land Grant Permanent Fund (LGPF). Oil and gas royalties account for about 97% of non-renewable revenues.

LGPF investments and distributions are made by the New Mexico State Investment Council. The distributions are based on the fund's 5-year average ending market value, with the largest share made to New Mexico public education.

The SLO has authority, under Section 19-10-1 NMSA 1978, to enter into leases for "... exploration, development, and production of oil and natural gas, from ..." certain lands. From these oil and gas leases, royalties are one of the revenue streams that accrue to the SLO. Royalties are based on a fraction of the value of the sale of oil and gas after allowed

deductions are taken, which include marketing, processing, and transportation costs. The royalty rate that is applied is specified in the lease and can be 1/8, 1/6, 3/16, or 1/5.

The process that BBER uses to forecast oil royalties will be explained in multiple sections. In the first section, we explain that oil royalties are dependent upon oil sale values and describe their relationship, and assume that this relationship will hold for future royalties and future sale values. We then forecast sale values as the product of forecasted oil price and forecasted oil production. In the second section, we explain that forecasted prices are based upon the forecasted West Texas Intermediate (WTI) crude oil price and the historic relationship between the average New Mexico oil price and WTI crude oil price. In the last section, we explain that forecasted production is based upon the forecasted growth rate of Southwest Region oil production and recent New Mexico oil production. Figure 1 displays the flow chart.

Section 1: Historic Relationship between Oil Royalties and Oil Sale Values

Figure 2 on page 2 displays the historic relationship between royalties and sale values from 1996 through 2011, with royalty (continued on page 2)

¹ Royalties are payments made to the owner (New Mexico State Land Office) of an asset (minerals) for use (exploration, production, and distribution) of that asset.

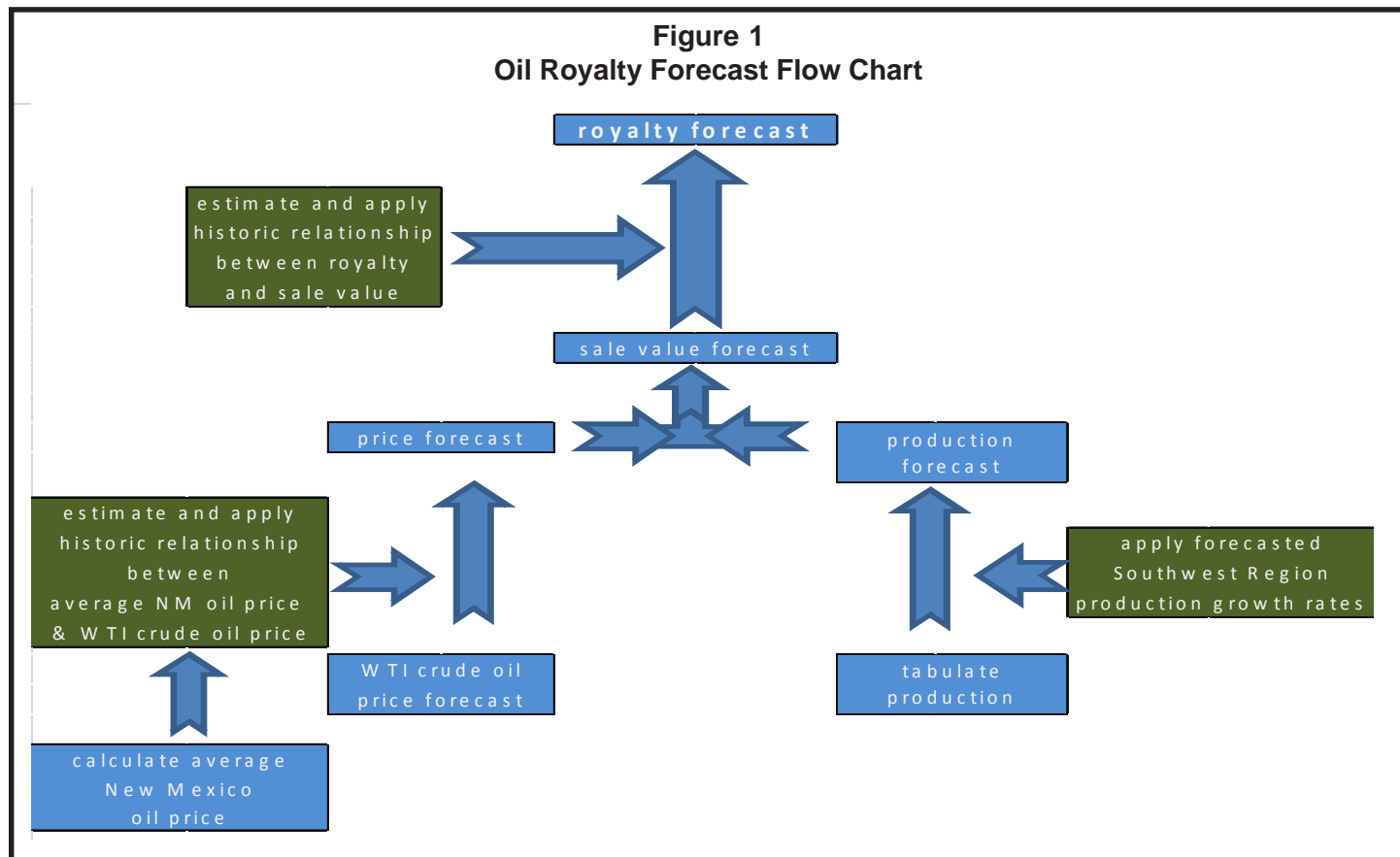
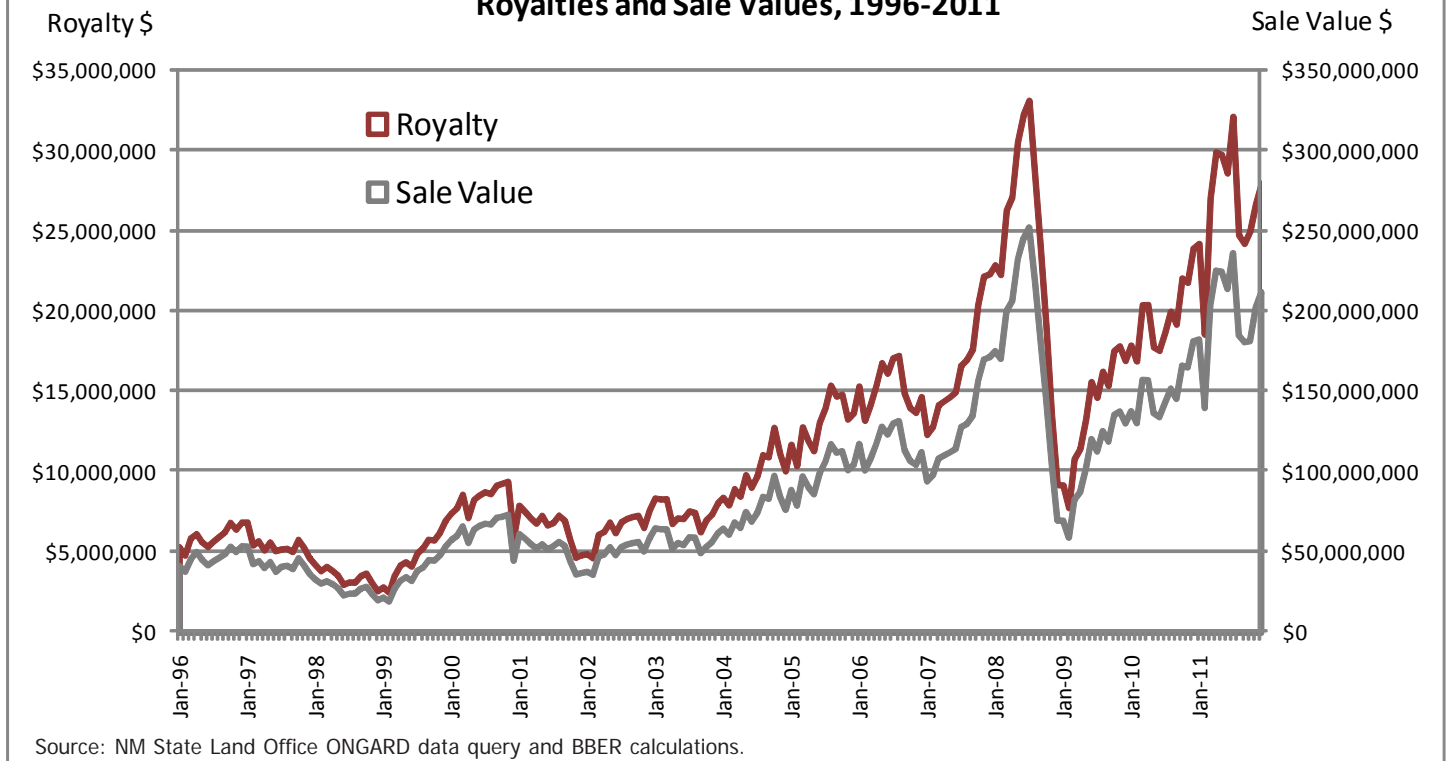


Figure 2: Historic Relationship Between Monthly Oil Royalties and Sale Values, 1996-2011



Oil Royalty Forecasting... (cont. from pg. 1)

value measured on the left axis and sale value measured on the right axis. For example, in January 2011, royalty amounted to about \$24 million and sale value was about \$182 million. Individual sales transaction data were supplied by the SLO. Summary data can be queried from the ONGARD² system that is very similar to the individual sales transaction data supplied. There is a very strong graphical relationship between royalties and sale values. Whenever the sale value increases so does the royalty and whenever sale value decreases so does the royalty. It appears that royalty is generally 10 times less than sale value throughout this period. We assume that this relationship will hold for future royalties and sale values.

The historic relationship between royalty and sale value was estimated via Ordinary Least Squares (OLS) regression and a very strong fit was achieved with an adjusted R square of nearly 1 (R²=1.000). The slope coefficient was estimated to be .13 and the intercept coefficient was estimated to be -162,237. To estimate the royalty in a certain month, take 13% of sale value for that certain month and subtract \$162,237 from it. The slope coefficient reinforces our previous graphical observation that royalty is about 10 times less than sale value.

We assume that this relationship holds for future royalties and sale values. We then forecast sale values as the product

of forecasted price and forecasted production. To forecast the royalty for a certain future month, take 13% of forecasted sale value for that certain future month and subtract \$162,237 from it.

Section 2: Forecasted New Mexico Oil Price

Forecasted New Mexico oil prices are based upon forecasted West Texas Intermediate (WTI) crude oil prices and the historic relationship between New Mexico oil price and WTI crude oil price.

Figure 3, on the top of page 9, graphs the historic New Mexico oil price and WTI oil price from 1996 through 2011. There is a very strong graphical relationship between New Mexico and WTI crude oil prices. The two are geographically close and share the same delivery infrastructure, as opposed to international oil that is shipped in. The two prices track very closely to each other with the New Mexico oil price consistently below the WTI crude oil price. We assume that this relationship will hold for future prices.

The historic relationship between NM oil price and WTI oil price was estimated via OLS regression and a very strong fit was achieved with an adjusted R square of nearly 1 (R²= .997). The slope coefficient was estimated to be .96 and the intercept coefficient was estimated to be -1.57. To estimate the NM oil price in a certain month, take 96% of WTI price for that certain month and subtract \$1.57 from it. The intercept coefficient reinforces our previous graphical observation that NM oil prices are consistently below WTI oil prices.

We assume that this relationship holds for future NM oil prices and WTI oil prices. To forecast the NM oil price for a

² The ONGARD system can be accessed via www.ongard.state.nm.us and following these tabs; Industry Access\TAXATION AND REVENUE DEPARTMENT INQUIRIES\TAX RESEARCH\COUNTY VOL\VAL REPORT BY SALE PERIOD (PCVV). The ONGARD Web Site provides information to the Oil and Gas Industry and the Energy, Minerals and Natural Resources Department, the State Land Office, and the Taxation and Revenue Department.

U.S. ECONOMIC INDICATORS

	Current		% Chg. Year Ago	Previous Mo./Qtr. Data
	Mo./Qtr.	Data		
Consumer Price Index (1982-84=100)				
All Urban Consumers				
All items	Nov 11	226.2	3.4	226.4
Food and Beverages	Nov 11	230.7	4.4	230.9
Housing	Nov 11	220.0	1.9	220.1
Apparel	Nov 11	127.3	4.8	127.6
Transportation	Nov 11	211.4	8.0	212.1
Medical Care	Nov 11	404.9	3.4	403.4
Other Goods and Services	Nov 11	390.8	1.9	389.1
Urban Wage Earners and Clerical Workers				
All Items	Nov 11	222.8	3.8	223.0
Gross domestic product ¹ (\$Bil. constant)	4Q 11	\$13,422.4	1.6	\$13,331.6
Prime interest rate ² (% per annum)	Nov 11	3.25	-	3.25
Mortgage interest rate ³ (% per annum)	Nov 11	4.26	-	4.19
3 month treasury bill ⁴ (% per annum)	Nov 11	0.01	-	0.02
Industrial production ⁵ (2007=100)	Nov 11	94.9	3.8	95.1
Manufacturers new orders ⁵ (\$Bil.)	Nov 11	\$460.9	12.0	\$450.9

Note: Selected data items subject to revision. **1** 2005 dollars at seasonally adjusted annual rates. **2** Closing rate for month. **3** Effective rate (in the primary market) on conventional mortgages reflecting fees and charges as well as contract rate and assumed, on the average, repayment at end of 10 years. **4** High bill rate at auction, issue date within period, bank-discount basis. Data are stop yields from uniform-price auctions. **5** Monthly data seasonally adjusted. **Source:** U.S. Bureau of Labor Statistics, consumer price index data; U.S. Council of Economic Advisors, *Economic Indicators*, all other data.

NEW MEXICO AND U.S. ECONOMIC COMPARISONS

	New Mexico				United States		
	Current Mo./Qtr.	Current Mo./Qtr. Data	% Chg. Year Ago	Previous Mo./Qtr. Data	Current Mo./Qtr. Data	% Chg. Year Ago	Previous Mo./Qtr. Data
Employment (000)	Nov 11	883.9	0.5	878.2	141,070	1.2	140,987
Unemployment rate (%)	Nov 11	6.3	-	6.4	8.2	-	8.5
Nonagricultural employment (000)	Nov 11	809.8	0.8	811.5	133,172	1.3	132,870
Personal income ¹ (\$Mil.)	3Q 11	\$72,093	4.0	\$72,013	\$12,953,429	4.1	\$12,934,733
Housing units permitted							
Single	Nov 11	184	-25.8	257	30,900	4.4	33,600
Multi	Nov 11	5	-	240	19,400	71.7	16,900

- Percent change can't be calculated because of division by zero.

p Preliminary.

¹ Quarterly data seasonally adjusted at annual rates.

Note: Selected data items subject to revision.

Sources: New Mexico Dept. of Workforce Solutions and U.S. Bureau of Labor Statistics, employment and unemployment data; U.S. Dept. of Commerce, Bureau of Economic Analysis, income data; U.S. Dept. of Commerce, Bureau of the Census and individual permit-issuing agencies, construction data.

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NEW MEXICO ECONOMIC INDICATORS

	Current Mo./Qtr.	Current Data	%Chg. From a Year Ago	12-Mo/4-Qtr. Averages	
				Current	%Chg. From Previous ¹
1. GENERAL					
Civilian labor force ² (000s)	Nov 11	943.2	-1.7	941.8	-1.1
Employment (000s)	Nov 11	883.9	0.5	873.1	0.1
Unemployment (000s)	Nov 11	59.3	-26.2	68.7	-13.7
Unemployment rate (%)	Nov 11	6.3	-	7.3	-
Weekly new unemployment insurance claims	Nov 11	1,802	5.8	1,759	-1.3
Nonagricultural wage & salary employment ^{r,3} (000s)	Nov 11	809.8	0.8	802.7	0.1
All industries average weekly wages (\$) ^{p,4}	2Q 11	\$763	2.8	\$766	2.9
Personal income ⁵ (\$ mil.)	3Q 11	\$72,093	4.0	\$71,325	5.0
2. AGRICULTURE					
Receipts for all agricultural commodities (\$ mil.)	Nov 11	\$496.3	22.0	\$328.6	25.7
Livestock (\$ mil.)	Nov 11	\$315.0	31.4	\$255.8	28.4
Crops (\$ mil.)	Nov 11	\$181.3	8.6	\$72.8	16.9
Milk production (mil. lbs.)	Nov 11	673	6.3	680	3.9
Milk cows (000s head)	Nov 11	333	4.4	328	2.2
Milk per cow (lbs. per head)	Nov 11	2,020	1.8	2,077	1.6
3. MINING & LOGGING					
Total employment ^{r,3} (000s)	Nov 11	20.7	8.9	19.8	8.3
Mining average weekly wages (\$) ^{p,4}	2Q 11	\$1,344	10.8	\$1,469	13.9
Coal production (000 short tons)	Nov 11	2,074	23.7	1,868	5.4
Oil sales (\$ mil.) ^f	Oct 11	\$506.6	13.0	\$523.3	30.5
Oil volume of production (mil. bbls.) ^f	Oct 11	6.2	6.4	5.9	8.9
Gas sales (\$ mil.) ^f	Oct 11	\$593.4	10.4	\$594.3	2.3
Gas volume of production (bil. cf.) ^f	Oct 11	102.7	-3.4	101.7	-4.0
4. CONSTRUCTION					
Total employment ^{r,3} (000s)	Nov 11	39.6	-13.3	41.0	-6.8
Average weekly wages (\$) ^{p,4}	2Q 11	\$768	1.1	\$783	-0.7
Residential units permitted	Nov 11	189	-23.8	344	-11.7
Residential building permit value (\$ mil.)	Nov 11	\$34.8	-24.7	\$56.3	-17.2
Nonresidential const. contract value (\$ mil.)	Nov 11	\$71.5	-7.2	\$82.4	-14.2
Nonbuilding const. contract value (\$ mil.)	Nov 11	\$50.2	-2.8	\$101.3	-2.0
5. MANUFACTURING					
Total employment ^{r,3} (000s)	Nov 11	29.4	1.0	28.9	-0.4
Average weekly wages (\$) ^{p,4}	2Q 11	\$1,016	0.6	\$1,027	4.9
6. WHOLESALE TRADE					
Total employment ³ (000s)	Nov 11	23.3	6.9	22.7	4.0
Average weekly wages (\$) ^{p,4}	2Q 11	\$909	1.8	\$944	2.1
7. RETAIL TRADE					
Total employment ^{r,3} (000s)	Nov 11	94.1	2.7	92.4	2.9
Average weekly wages (\$) ^{p,4}	2Q 11	\$482	-0.6	\$488	2.2
Taxable gross receipts (\$ mil.) ^{f *}	4Q11	\$3,909.8	-0.2	\$3,730.0	3.2
8. TRANSPORTATION, WAREHOUSING & UTILITIES					
Total employment ^{r,3} (000s)	Nov 11	22.1	-1.8	22.0	1.7
Transp. & warehousing average weekly wages (\$) ^{p,4}	2Q 11	\$803	5.7	\$791	4.6
Utilities average weekly wages (\$) ^{p,4}	2Q 11	\$1,267	-2.8	\$1,347	0.9

* Data from quarterly gross receipts reports may differ from monthly averages. **na** Not available. **p** Preliminary. **r** Revised. **1** For example, in the report that contains Nov. 2011 figures this would be the percent change from the average of Dec. 2009-Nov. 2010 to the average of Dec. 2010-Nov. 2011. For quarterly data, the average column represents the average of four quarters. **2** Number of employed and unemployed persons by place of residence. **3** Number of jobs by place of work. **4** Wages represent gross pay, including commissions, bonuses and over time. **5** Quarterly data seasonally adjusted at annual rates. **6** Does not include insurance and real estate agents working on commission. **7** Includes Albuquerque, Rio Rancho, Bernalillo/Algodones, Placitas, Corrales, the East Mountains and Valencia County. **8** Includes Santa Fe City and Santa Fe County only. **9** Based on information from Santa Fe Assoc. of REALTORS® MLS for the period Oct. 2011 to Dec. 2011. This representation is based in whole or in part on data supplied by SFAR MLS who does not guarantee nor is in any way responsible for its accuracy. Data maintained by SFAR MLS may not reflect all real estate activity in the market. **10** Commercial passenger traffic includes enplanements and deplanements.

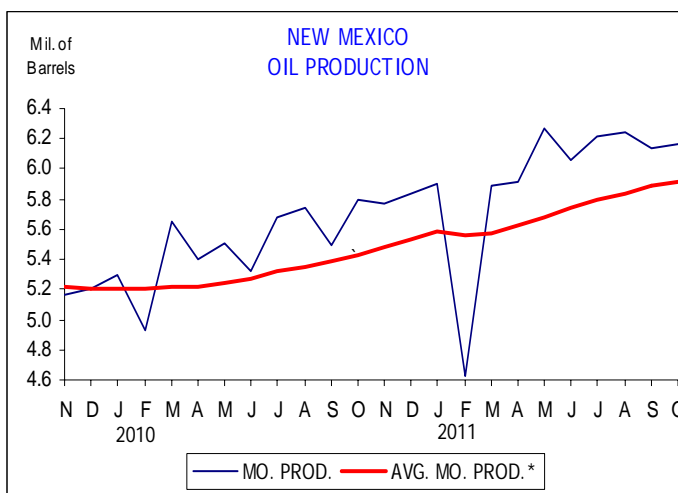
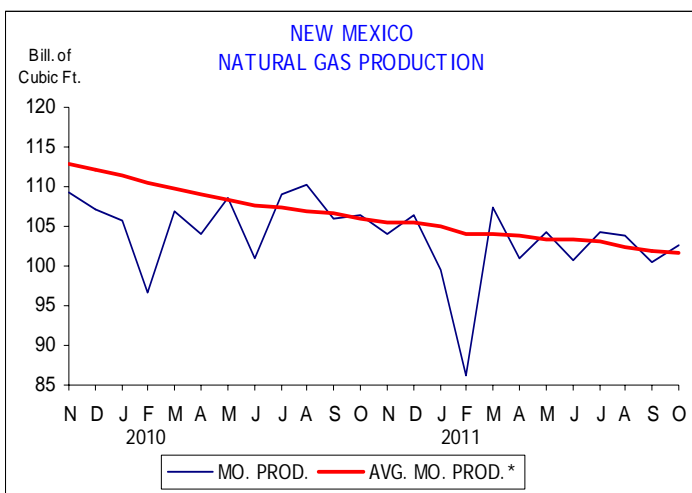
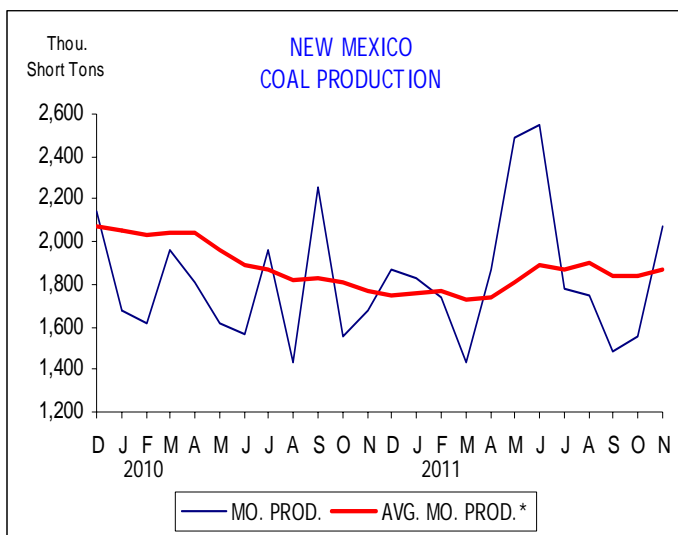
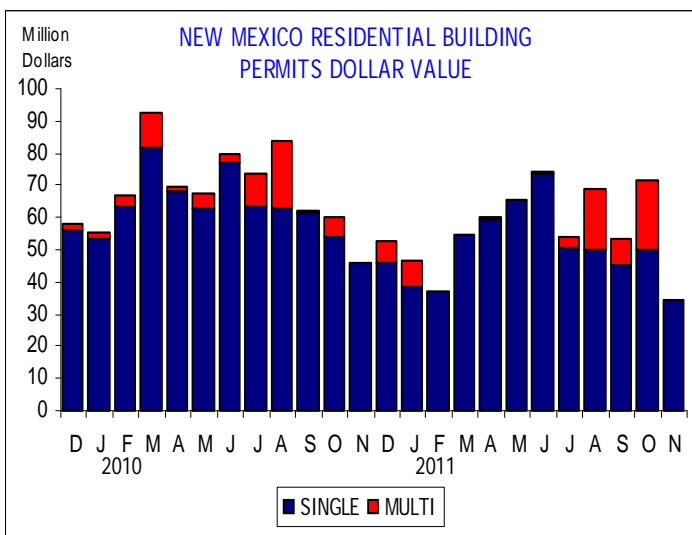
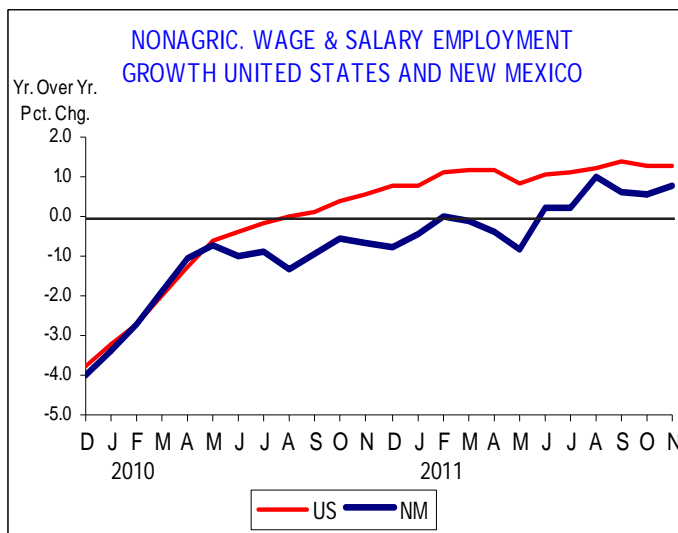
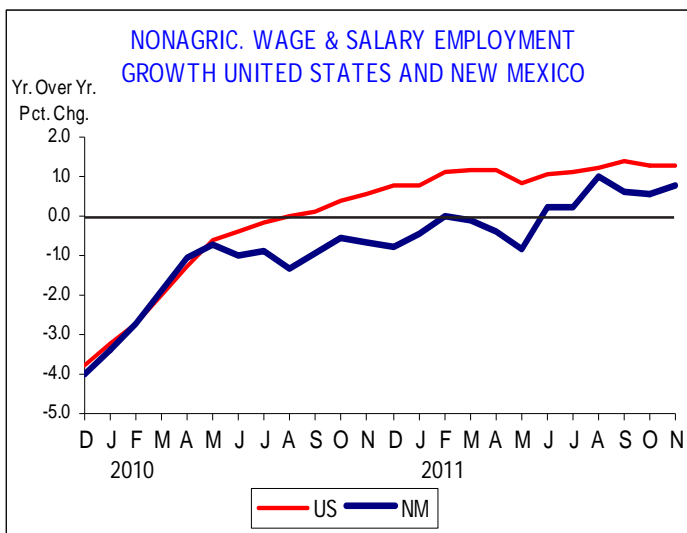
11 Includes recurring and non-recurring revenues.

NEW MEXICO ECONOMIC INDICATORS (continued)

	Current Mo./Qtr.	Current Data	%Chg. From a Year Ago	12-Mo./4-Qtr. Averages	
				Current	% Chg. From Previous ¹
9. INFORMATION					
Total employment ^{r,3} (000s)	Nov 11	14.1	-2.8	14.0	-3.1
Average weekly wages (\$) ^{p,4}	2Q 11	\$827	13.0	\$846	7.8
10. FINANCIAL ACTIVITIES					
Total employment ^{r,3} (000s)	Nov 11	35.1	9.3	33.8	2.3
Finance & insurance average weekly wages (\$) ^{p,4,6}	2Q 11	\$901	4.6	\$995	6.2
Real estate & rental & leasing avg. wkly. wages (\$) ^{p,4,6}	2Q 11	\$666	9.0	\$660	8.6
Albuquerque Area ⁷ Median Sales Price:					
Existing Single-Family Detached (\$000s)	4Q 11	\$162.7	-9.1	-	-
Existing Condo/Townhome Attached (\$000s)	4Q 11	\$127.8	-9.8	-	-
Santa Fe City/County ⁸ Median Sales Price ⁹ :					
Existing Single-Family Detached (\$000s)	4Q 11	\$350.0	2.9	-	-
Existing Condo/Townhome Attached (\$000s)	4Q 11	\$225.0	-2.2	-	-
11. PROFESSIONAL & BUSINESS SERVICES					
Total employment ^{r,3} (000s)	Nov 11	92.5	0.0	92.9	-6.2
Professional & technical serv. avg. wkly. wages (\$) ^{p,4}	2Q 11	\$1,319	2.3	\$1,351	3.4
Mgt. of cos. & enterprises avg. weekly wages (\$) ^{p,4}	2Q 11	\$1,051	-1.2	\$1,145	1.1
Admin. & waste & remed. serv. avg. wkly. wages (\$) ^{p,4}	2Q 11	\$630	5.4	\$624	2.1
12. EDUCATIONAL & HEALTH SERVICES					
Total employment ^{r,3} (000s)	Nov 11	128.3	5.1	124.7	4.3
Educational services average weekly wages (\$) ^{p,4}	2Q 11	\$652	2.8	\$640	2.5
Health care & social assist. avg. weekly wages (\$) ^{p,4}	2Q 11	\$702	0.0	\$729	1.3
13. LEISURE AND HOSPITALITY					
Total employment ^{r,3} (000s)	Nov 11	83.7	2.2	84.7	1.3
Arts, entertainment & recreation avg. wkly. wages (\$) ^{p,4}	2Q 11	\$347	-1.1	\$366	0.8
Accommodation & food serv. avg. weekly wages (\$) ^{p,4}	2Q 11	\$294	1.7	\$295	1.9
Eating & drinking place taxable gross receipts (\$ mil.)	4Q 11	\$642.1	0.7	\$664.8	4.6
Visits to state parks (000s)	Nov 11	147.1	-28.0	323.5	-18.5
Visits to national parks/monuments (000s)	Nov 11	79.1	-15.1	123.0	-10.0
Passenger traffic at Albuquerque airport ¹⁰ (000s)	Nov 11	460.4	1.0	475.1	-1.7
Lodgers tax receipts (\$000s)	3Q 11	\$11,853.0	-0.6	\$10,102.0	-1.5
Lodging occupancy rates (%)	Nov 11	49.6	-	59.1	-
14. OTHER SERVICES					
Total employment ^{r,3} (000s)	Nov 11	27.9	-0.4	28.9	1.6
Average weekly wages (\$) ^{p,4}	2Q 11	\$537	3.5	\$539	3.6
15. GOVERNMENT					
Total employment ^{r,3,9} (000s)	Nov 11	199.0	-1.8	197.0	-1.2
Federal employment ^{r,3} (000s)	Nov 11	32.2	-2.1	33.1	-1.8
State employment ^{r,3} (000s)	Nov 11	60.3	-1.8	58.1	-1.1
State education employment ^{r,3} (000s)	Nov 11	26.2	-11.5	25.3	-8.3
Local employment ^{r,3} (000s)	Nov 11	106.5	-1.8	105.8	-1.1
Local education employment ^{r,3} (000s)	Nov 11	58.1	-1.5	56.5	-2.0
Federal gov. average weekly wages (\$) ^{p,4}	2Q 11	\$1,367	11.8	\$1,294	4.0
State gov. average weekly wages (\$) ^{p,4}	2Q 11	\$874	2.5	\$897	1.1
Local gov. average weekly wages (\$) ^{p,4}	2Q 11	\$759	0.5	\$680	0.2
Total general fund revenues ¹¹ (\$ mil.)	Oct 11	\$463.5	1.5	\$473.0	5.9
Recurring (\$ mil.)	Oct 11	\$462.6	1.5	\$463.5	13.1
Nonrecurring (\$ mil.)	Oct 11	\$0.9	-14.2	\$9.5	-74.0

Note: Selected data items subject to revision. Wage data through 2009 have been revised. **Sources:** NM Dept. of Workforce Solutions, Economic Research and Analysis, Sections 1, 3 through 15; U.S. Bureau of Labor Statistics, Sections 1, 3 through 15; U.S. Dept. of Commerce, Bureau of Economic Analysis, Section 1; U.S. Dept. of Agriculture, Section 2; NM Taxation and Revenue Dept., Sections 3, 7, 13; U.S. Dept. of Energy, Energy Information Admin., Section 3; U.S. Dept. of Commerce, Bureau of the Census and individual building permit-issuing agencies, Section 4; McGraw Hill Construction, *Dodge Local Construction Potentials*, Section 4; Greater Albuquerque Association of REALTORS®, Section 10; Santa Fe Association of REALTORS®, Section 10; NM Energy Minerals and Natural Resources Dept., Park and Recreation Div., Section 13; U.S. National Park Service, Section 13; City of Albuquerque, Albuquerque International Sunport, Section 13; NM Dept. of Finance and Admin., Local Government Div., Section 13; *Rocky Mountain Lodging Report*, Section 13; NM Dept. of Finance and Admin., Section 15.

CURRENT NEW MEXICO AND U.S. ECONOMIC INDICATORS



* 12 month average. For example, the point for November 2011 represents an average of December 2010 through November 2011.

ECONOMIC INDICATORS FOR CITIES AND METRO AREAS**Taxable Gross Receipts^{*,1,2} from Retail Trade, Selected Cities (\$000)**

City	Current	% Chg.	Previous	City	Current	% Chg.	Previous
	3 Month	Average	3 Month		3 Month	Average	3 Month
	Average ³	Year	Average ³		Average ³	Year	Average ³
	Sep-Nov ⁴	Ago	Jun-Aug ⁴		Sep-Nov ⁴	Ago	Jun-Aug ⁴
Alamogordo	\$24,677	2.8	\$25,031	Las Cruces	\$82,252	1.8	\$84,110
Albuquerque	403,415	1.1	418,185	Las Vegas	9,660	3.2	9,885
Artesia	14,180	4.9	13,741	Los Alamos	5,919	-4.3	5,766
Carlsbad	27,445	27.3	25,346	Portales	8,265	3.2	8,466
Clovis	28,453	0.6	28,407	Rio Rancho	29,449	0.8	30,007
Deming	10,259	9.2	9,273	Roswell	36,599	-1.7	38,712
Espanola	13,014	1.1	14,522	Ruidoso	6,694	-2.2	8,983
Farmington	69,768	1.5	69,505	Santa Fe	95,395	1.7	101,998
Gallup	30,380	5.4	31,083	Silver City	14,107	4.9	14,315
Hobbs	43,339	17.8	41,992	Taos	14,288	-2.1	16,882
				State total	1,236,942	3.6	1,286,691

* The NM Taxation and Revenue Dept. has identified overestimation in some sectors that will be corrected with future revisions.

1 Taxable gross receipts are total retail sales less all applicable exemptions and deductions. Deductions are designed to make the gross receipts tax reach only receipts from sales to final users. **2** Includes taxable gross receipts and food and medical deductions.

3 Averages are used to smooth out fluctuations in the data which are not caused by changes in economic conditions.

4 Receipts based on month of activity. **Source:** NM Taxation and Revenue Dept.

Estimated Civilian Labor Force and Employment

	New Mexico		Albuquerque MSA ¹		Farmington MSA ²		Las Cruces MSA ³		Santa Fe MSA ⁴	
	% Chg.		% Chg.		% Chg.		% Chg.		% Chg.	
	Nov 2011	Year Ago	Nov 2011	Year Ago	Nov 2011	Year Ago	Nov 2011	Year Ago	Nov 2011	Year Ago
Total Civilian Labor Force ^{5,p}	943,155	-1.7	403,811	-2.1	55,871	-1.3	92,769	-2.2	77,437	-0.2
Employment	883,859	0.5	376,668	0.2	52,354	1.6	86,923	-0.2	73,586	2.0
Unemployment	59,296	-26.2	27,143	-25.2	3,517	-31.2	5,846	-24.3	3,851	-28.9
Unemployment rate (%)	6.3	-	6.7	-	6.3	-	6.3	-	5.0	-
Total Nonagricultural Wage & Salary Employment ^{5,r}	809,800	0.8	372,100	-0.4	49,000	1.0	69,700	-0.7	61,900	1.5
Private Sector	610,800	1.7	288,500	-0.1	37,200	0.3	48,100	0.8	45,600	2.9
<i>Goods Producing</i>	89,700	-4.4	35,900	-7.9	10,500	1.0	6,200	-4.6	3,600	-7.7
<i>Services Providing</i>	521,100	2.8	252,600	1.1	26,700	0.0	41,900	1.7	42,000	4.0
Mining & Logging & Construction	60,300	-6.8	18,500	-14.4	*	-	3,600	-2.7	2,800	-9.7
Mining & Logging	20,700	8.9	#	-	*	-	#	-	#	-
Construction	39,600	-13.3	#	-	*	-	#	-	#	-
Manufacturing	29,400	1.0	17,400	0.0	*	-	2,600	-7.1	800	0.0
Wholesale Trade	23,300	6.9	12,400	0.0	*	-	1,300	8.3	1,000	0.0
Retail Trade	94,100	2.7	41,800	-0.7	*	-	7,200	1.4	9,000	3.4
Transp., Whsing & Utilities	22,100	-1.8	9,300	-1.1	*	-	1,700	0.0	700	0.0
Information	14,100	-2.8	8,400	1.2	*	-	900	0.0	900	-18.2
Financial Activities	35,100	9.3	17,200	-2.3	*	-	2,400	4.3	2,700	3.8
Professional & Business Services	92,500	0.0	56,000	0.2	*	-	7,600	1.3	4,400	2.3
Educational & Health Services	128,300	5.1	56,800	3.6	*	-	12,100	1.7	11,000	5.8
Leisure & Hospitality	83,700	2.2	39,100	3.7	*	-	7,100	1.4	9,500	9.2
Other Services	27,900	-0.4	11,600	0.0	*	-	1,600	0.0	2,800	-3.4
Government	199,000	-1.8	83,600	-1.4	11,800	3.5	21,600	-4.0	16,300	-2.4
Federal	32,200	-2.1	15,300	-0.6	1,800	0.0	3,800	-7.3	1,000	-9.1
State	60,300	-1.8	27,100	0.4	500	0.0	9,100	-4.2	8,100	-2.4
Local	106,500	-1.8	41,200	-2.8	9,500	4.4	8,700	-2.2	7,200	-1.4

Suppressed. Included in "Mining & Logging & Construction" super sector. * Suppressed. Included in total. **p** Preliminary. **r** Revised.

1 Bernalillo, Sandoval, Torrance and Valencia counties. **2** San Juan Co. **3** Dona Ana Co. **4** Santa Fe Co. **5** Civilian labor force data are by place of residence and include self-employed persons and agricultural workers. Wage and salary employment data are by place of work.

Note: Data have been revised and are subject to future revisions. **Source:** NM Dept. of Workforce Solutions, Economic Research & Analysis.

ECONOMIC INDICATORS FOR CITIES AND METRO AREAS (continued)**New Mexico Construction^{1, p} Selected Cities**

	Number of Building Units or Permits ²					Value of Building Permits (\$000)				
	Nov 2011	Nov 2010	Cumulative Total			Nov 2011	Nov 2010	Cumulative Total		
			Nov 2011	Nov 2010	% Chg.			Nov 2011	Nov 2010	% Chg.
New Residential³										
Albuquerque	51	39	927	909	2.0	\$8,894	\$6,482	\$141,982	\$138,338	2.6
Single Family	51	39	718	688	4.4	8,894	6,482	120,331	107,851	11.6
Multi Family	0	0	209	221	-5.4	0	0	21,650	30,488	-29.0
Carlsbad	4	3	275	51	439.2	1,086	476	22,880	7,652	199.0
Clovis	11	10	149	149	0.0	2,411	2,613	30,516	31,361	-2.7
Farmington	4	3	139	200	-30.5	628	518	19,508	28,687	-32.0
Gallup	0	0	2	4	-50.0	0	0	495	658	-24.8
Hobbs	0	1	25	78	-67.9	0	142	3,857	11,706	-67.1
Las Cruces	25	36	422	687	-38.6	4,845	6,312	75,910	104,536	-27.4
Los Alamos	0	0	7	3	133.3	0	0	1,864	600	210.7
Rio Rancho	12	25	392	438	-10.5	2,277	4,799	59,864	80,606	-25.7
Roswell	3	2	25	36	-30.6	443	366	3,709	5,455	-32.0
Ruidoso	2	4	43	53	-18.9	419	143	8,736	11,778	-25.8
Santa Fe	9	11	128	228	-43.9	1,638	2,195	25,625	44,277	-42.1
New Nonresidential										
Albuquerque	4	5	35	33	6.1	\$2,547	\$5,066	\$47,609	\$38,479	23.7
Carlsbad	1	1	13	10	30.0	49	25	10,371	9,444	9.8
Clovis	1	0	17	13	30.8	25	0	7,447	4,424	68.3
Farmington	0	1	13	8	62.5	0	210	7,024	7,084	-0.8
Gallup	0	1	7	2	250.0	0	56	5,128	906	466.0
Hobbs	4	2	24	11	118.2	1,928	420	12,484	4,833	158.3
Las Cruces	2	3	22	20	10.0	1,293	3,013	25,523	8,642	195.4
Los Alamos	0	1	0	3	-100.0	0	550	0	8,850	-100.0
Rio Rancho	4	2	23	8	187.5	1,101	452	9,906	20,667	-52.1
Roswell	1	3	46	55	-16.4	600	8	2,201	1,746	26.0
Ruidoso	0	1	6	7	-14.3	0	68	468	1,477	-68.3
Santa Fe	2	0	17	8	112.5	850	0	24,074	2,843	746.7

N Not available. **p** Preliminary. **r** Revised. **1** Data refer only to permits authorized for private construction projects. Public buildings are excluded. **2** Residential data show the number of permitted units while nonresidential data show the number of permits. **3** Residential data include both single- and multi-family units. **Sources:** U.S. Dept. of Commerce, Bureau of the Census, and local permit-issuing agencies.

Oil Royalty Forecasting... (cont. from pg. 2)

certain future month, take 96% of forecasted WTI oil price for that *certain future* month and subtract \$1.57 from it. The historic relationship between NM oil price and WTI oil price was applied to IHS Global Insight's projected average price of WTI to project the NM oil price. IHS Global Insight's average price of WTI oil was used because we have a high degree of confidence in their forecasts and use them in our FOR-UNM quarterly forecast of the New Mexico economy.

Section 3: Forecasted New Mexico Oil Production

Forecasted New Mexico oil production is based upon the U.S. Department of Energy's Energy Information Administration (EIA) forecasted Southwest Region oil production³. The Southwest Region includes the Permian Basin, which comprises the majority of oil production in New Mexico. The

EIA forecasts oil production based on expected market conditions, legislation and regulation, technology advances, and other expected issues. BBER assumed that the forecasted growth rate of New Mexico oil production will follow the forecasted growth rate of oil production for the Southwest Region.

Oil production in the Southwest region is forecasted to grow from 2010 through 2016. Table 1 on page 9 displays the forecasted annual growth rate of oil production. From 2011 to 2015, the growth rate of oil production is expected to slow from 3.2% to 1.0% and then increase to 1.9% from 2015 to 2016.

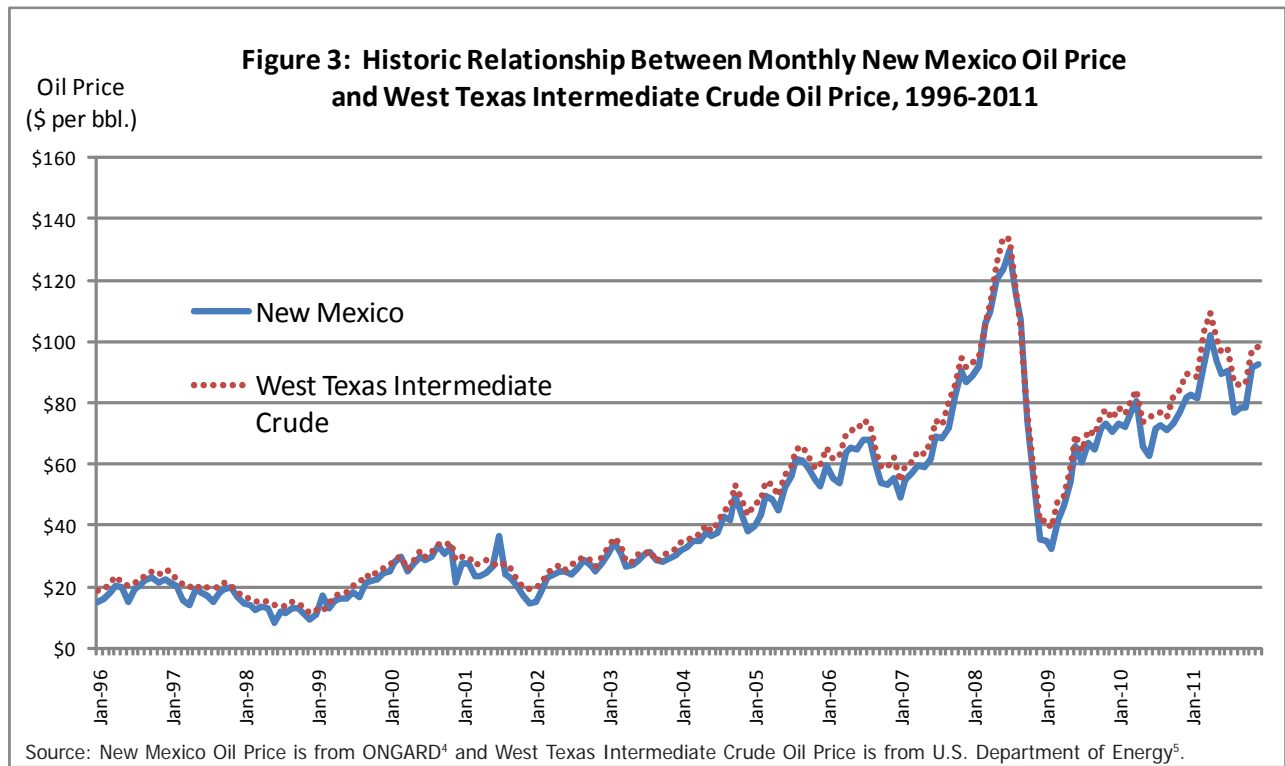
We assume that the Southwest Region oil production forecast, which includes the Permian Basin, will reflect the New Mexico oil production. To forecast NM oil production for 2012, take oil production in 2011 and increase it by 2.1%.

Summary

The process that the Bureau of Business and Economic Research uses to forecast oil royalties has multiple steps. In

(continued on page 9)

³ U.S. Department of Energy, Energy Information Administration, *Annual Energy Outlook 2011 with Projections to 2035*, Table 132, April 26, 2011. Lower 48 Crude Oil Production and Wellhead Prices by Supply Region, Reference case, Southwest Region, <http://www.eia.gov/oiaf/aeo/tablebrowser/#release=AEO2011&subject=0-AEO2011&table=71-AEO2011®ion=0-0&cases=ref2011-d020911a>.



Oil Royalty Forecasting... (cont. from pg. 8)

the first step, we establish that the oil royalties are about 13% of oil sale values with a minor adjustment downward. We assume that this relationship will hold for future royalties and sale values and forecast sale values as the product of forecasted oil sale price and forecasted oil production. In the second step, we forecasted the New Mexico oil price by taking the forecasted West Texas Intermediate crude oil price and decreasing it four percent and then subtracting \$1.57 from it. In the last step, we forecasted New Mexico oil production by applying the forecasted Southwest Region oil growth rate to recent New Mexico oil production.

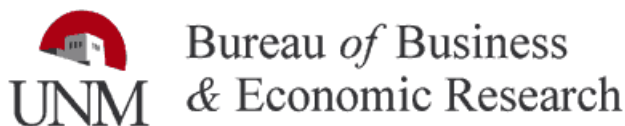
Daren Ruiz
Research Scientist

⁴ BBER calculated the weighted averaged New Mexico oil price based on individual sales transaction data supplied by the SLO. Summary data can be queried from <http://www.ongard.state.nm.us> and selecting Land Type 'S' and Product Type '01' and '02'.
⁵ U.S. Department of Energy, Energy Information Administration, Forecast & Analysis, Short-Term Energy Outlook, Custom Table Builder, http://www.eia.gov/steo/cf_query/index.cfm.

**Table 1
Forecasted Year-Over-Year
Growth Rate of Oil Production for
the Southwest Region**

Period	Year-Over-Year Growth Rate
2010-2011	3.2%
2011-2012	2.1%
2012-2013	2.0%
2013-2014	1.0%
2014-2015	1.0%
2015-2016	1.9%

Source: U.S. Dept. of Energy, Energy Information Administration.



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