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Oil & natural gas extraction data

Richard Heede
Climate Mitigation Services
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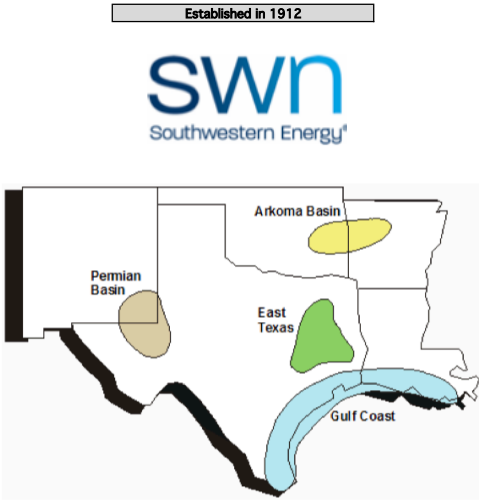


yellow column indicates original reported units

Production / Extraction data

Year	Crude Oil & NGL			Natural Gas				
	Net production	Net production	Net production	Net production	Net production	Net production		
	Thousand bbl /d	Million bbl /yr	Million tonnes/yr	Million cf/d	Million SCM/d	Billion cf/yr	Million tons/yr	Million tonnes/yr

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2018



$$\frac{R^2}{A} \rightarrow V^+$$

Southwestern's formula, 10-K 2011.

Southwestern Energy, Form 10-K for 2005, page 5: areas of operation.

	Crude oil Mb	NGL Mb	Total Mb	Natural Gas Bcf	Natural Gas Bcf			
1988	0.16		0	12.0	12			
1989	0.15		0	15.3	15			
1990	0.11		0	16.4	16			
1991	0.18		0	19.9	20			
1992	0.12		0	25.8	26			
1993	0.10		0	35.7	36			
1994	0.20		0	37.7	38			
1995	0.23		0	34.5	35			
1996	0.39		0	34.8	35			
1997	0.75		1	33.4	33			
1998	0.70		1	32.7	33			
1999	0.58		1	29.4	29			
2000	0.68		1	31.6	32			
2001	0.72		1	35.5	36			
2002	0.68		1	36.0	36			
2003	0.53		1	38.0	38			
2004	0.62		1	50.4	50			
2005	0.71		1	56.8	57			
2006	0.70		1	68.1	68			
2007	0.61		1	109.9	110			
2008	0.39		0	192.3	192			
2009	0.12		0	299.7	300			
2010	0.17		0	403.6	404			
2011	0.10	-	0	499.0	499			
2012	0.08	-	0	565.0	565			
2013	0.14	0.1	0	656.0	656			
2014	0.24	0.2	0	766.0	766			
2015	2.27	10.7	13	899.0	899			
2016	2.19	12.4	15	788.0	788			
2017	2.33	14.2	17	797.0	797			
2018	3.41	19.7	23	807.0	807			
Total	na	na	78	na	na	7,427	-	-

Cell: M11**Comment:** Rick Heede:

On this worksheet we report extractive data for each company or state-owned enterprise. Three columns under crude oil and natural gas allow for data reported in one of three formats (e.g., thousand barrels per day, or million barrels per year, or million tonnes per year). Coal is normally reported in short tons or metric tonnes per year. The subtraction of the fraction typically sequestered in petrochemicals and other non-combusted uses such as road oils, waxes, lubricants, greases, etc. Non-fuel uses are accounted for in the emission factors and applied to each entity in the oil, gas, and coal summary worksheets.

Cell: F12**Comment:** Rick Heede:

Total net worldwide crude oil plus natural gas liquids produced by each company or state-owned enterprise. Where data is available, we list net production (after royalty production is deducted). We rely on company annual reports, Form 10-k, or other company data where available. In some cases -- particularly for state-owned oil and gas companies -- we use production data from the Oil & Gas Journal in its OGJ150 and OGJ100. Crude production includes natural gas liquids (NGL) unless noted.

Cell: J12**Comment:** Rick Heede:

Natural gas is typically reported as dry gas; natural gas liquids are reported under crude oil. Carbon dioxide is normally removed from the gas flow at the production site (see "Vented Carbon Dioxide"). "SCM/d" = standard cubic meters per day. "cf/d" = cubic feet per day. Net production typically excludes a number of diverted gas streams. Quantities and fractions vary; ExxonMobil's exclusions are typical of the industry: "Net production available for sale quantities are the volumes withdrawn from ... natural gas reserves, excluding royalties and volumes due to others when produced, and excluding gas purchased from others, gas consumed in producing operations, field processing plant losses, volumes used for gas lift, gas injections and cycling operations, quantities flared, and volume shrinkage due to the removal of condensate or natural gas liquids production." ExxonMobil Corporation (2004) 2003 Financial and Operating Review, www.exxonmobil.com, p. 55.

Cell: L27**Comment:** Rick Heede:

Southwestern Energy 10-K for 2011, page 3: "Our formula, which stands for "The Right People doing the Right Things, wisely investing the cash flow from our underlying Assets will create Value+," also guides our business strategy."

Cell: D59**Comment:** Rick Heede:

Southwestern Energy 10-K for 1994, p. 14. oil production 1992-1994, in Mb. See table below.

Cell: H59**Comment:** Rick Heede:

Southwestern Energy 10-K for 1994, p. 14. Gas production 1992-1994 in Bcf.

Cell: D62**Comment:** Rick Heede:

Southwestern Energy 10-K for 1997, Appendix, page 23, oil production 1995-1997, in Mb.

Cell: H62**Comment:** Rick Heede:

Southwestern Energy 10-K for 1997, Appendix, page 23, natural gas production 1995-1997, in Bcf.

Cell: D65**Comment:** Rick Heede:

Southwestern Energy, Form 10-K for 2000, Item 7, page 22. Production, in Mb per year, for 1998-2000.

Cell: H65**Comment:** Rick Heede:

Southwestern Energy, Form 10-K for 2000, Item 7, page 22. Production, in Bcf per year, for 1998-2000.

Cell: D68**Comment:** Rick Heede:

Southwestern Energy, Form 10-K for 2005, Item 7, page 22. Production, in Mb per year, for 2001-2005.

Cell: H68**Comment:** Rick Heede:

Southwestern Energy, Form 10-K for 2005, Item 7, page 22. Production, in Bcf per year, for 2001-2005.

Cell: D73**Comment:** Rick Heede:

Southwestern Energy, Form 10-K for 2010, page 43, oil production for 2006-2010, in Mb. (See table below)

Cell: H73**Comment:** Rick Heede:

Southwestern Energy, Form 10-K for 2010, page 43, natural gas production for 2006-2010, in Bcf.

Cell: D78**Comment:** Rick Heede:

Southwestern Energy, Form 10-K for 2015, page 44, oil and NGL production for 2011-2015, in Mb.

Cell: H78**Comment:** Rick Heede:

Southwestern Energy, Form 10-K for 2015, page 44, natural gas production for 2011-2015, in Bcf.

Cell: D83**Comment:** Rick Heede:

Southwestern Energy Annual Report & 10-K for 2018, page 52. Oil and NGL production 2016-2018, in Mb. See Table below.

Cell: H83**Comment:** Rick Heede:

Southwestern Energy Annual Report & 10-K for 2018, page 52. Nat Gas production 2016-2018, in Bcf.