Coal extraction data

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Climate Mitigation Services
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CONSOL Energy, USA

www.consolenergy.com Pittsburgh

yellow column indicates original reported units

Production / Extraction data

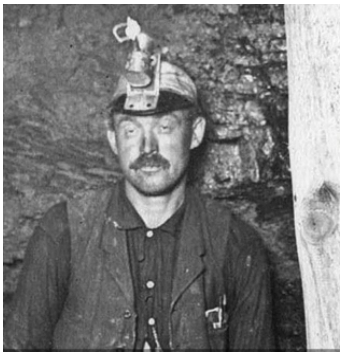
Year	Misc. & metallurgical		Bituminous		Total Coal		Natural Gs	
	Net production	Net production	Net production	Net production	Net production	Net production	Net production	Net production
	Million tons/yr	Million tonnes/yr	Million tons/yr	Million tonnes/yr	Million tons/yr	Million tonnes/yr	Bcf/yr	Bcf/yr
			Consolidation Coal / Conoco / CONSOL	Consolidation Coal / Conoco / CONSOL	Consolidation Coal / Conoco / CONSOL	Consolidation Coal / Conoco / CONSOL		
			Mined by Consolidated	Mined by lessees				
1863			million tons	million tons				
1864			0.034	Consolidated Coal data	0.0	**0.0**		
1865			0.058	Consolidated Coal data	0.1	**0.1**		
1866			0.09	interpolated	0.1	**0.1**		
1867			0.12	interpolated	0.1	**0.1**		
1868			0.16	interpolated	0.2	**0.1**		
1869			0.19	interpolated	0.2	**0.2**		
1870			0.22	interpolated	0.2	**0.2**		
1871			0.25	interpolated	0.3	**0.2**		
1872			0.29	interpolated	0.3	**0.3**		
1873			0.32	interpolated	0.3	**0.3**		
1874			0.35	interpolated	0.4	**0.3**		
1875			0.38	interpolated	0.4	**0.3**		
1876			0.42	interpolated	0.4	**0.4**		
1877			0.45	interpolated	0.4	**0.4**		
1878			0.48	interpolated	0.5	**0.4**		
1879			0.51	interpolated	0.5	**0.5**		
1880			0.55	interpolated	0.5	**0.5**		
1881			0.58	interpolated	0.6	**0.5**		
1882			0.61	interpolated	0.6	**0.6**		
1883			0.65	interpolated	0.6	**0.6**		
1884			0.68	interpolated	0.7	**0.6**		
1885			0.71	interpolated	0.7	**0.6**		
1886			0.74	interpolated	0.7	**0.7**		
1887			0.78	interpolated	0.8	**0.7**		
1888			0.81	interpolated	0.8	**0.7**		
1889			0.84	interpolated	0.8	**0.8**		
1890			0.87	interpolated	0.9	**0.8**		
1891			0.91	interpolated	0.9	**0.8**		
1892			0.94	interpolated	0.9	**0.9**		
1893			0.97	interpolated	1.0	**0.9**		
1894			1.00	interpolated	1.0	**0.9**		
1895			1.04	interpolated	1.0	**0.9**		
1896			1.07	interpolated	1.1	**1.0**		
1897			1.10	interpolated	1.1	**1.0**		
1898			1.13	interpolated	1.1	**1.0**		
1899			1.17	interpolated	1.2	**1.1**		
1900			1.20	CONSOL historic films	1.2	**1.1**		
1901			3.47	interpolated	3.5	**3.1**		
1902			5.73	interpolated	5.7	**5.2**		
1903			8.00	CONSOL historic films	8.0	**7.3**		
1904			8.21	interpolated	8.2	**7.4**		
1905			8.42	interpolated	8.4	**7.6**		
1906			8.63	interpolated	8.6	**7.8**		
1907			8.83	interpolated	8.8	**8.0**		
1908			9.04	interpolated	9.0	**8.2**		
1909			9.25	interpolated	9.3	**8.4**		
1910			9.46	interpolated	9.5	**8.6**		
1911			9.67	interpolated	9.7	**8.8**		
1912			9.88	interpolated	9.9	**9.0**		
1913			10.08	interpolated	10.1	**9.1**		
1914			10.29	interpolated	10.3	**9.3**		
1915			10.50	interpolated	10.5	**9.5**		
1916			10.71	interpolated	10.7	**9.7**		
1917			10.92	interpolated	10.9	**9.9**		
1918			11.13	interpolated	11.1	**10.1**		
1919			11.33	interpolated	11.3	**10.3**		
1920			11.54	interpolated	11.5	**10.5**		
1921			11.75	interpolated	11.8	**10.7**		
1922			11.96	interpolated	12.0	**10.8**		
1923			12.17	interpolated	12.2	**11.0**		
1924			12.38	interpolated	12.4	**11.2**		
1925			12.58	interpolated	12.6	**11.4**		
1926			12.79	interpolated	12.8	**11.6**		
1927			13.00	CONSOL historic films	13.0	**11.8**		
1928			12.02	interpolated	12.0	**10.9**		
1929			11.05	interpolated	11.0	**10.0**		
1930			10.07	interpolated	10.1	**9.1**		
1931			9.09	interpolated	9.1	**8.3**		
1932			8.12	interpolated	8.1	**7.4**		
1933	straight interpolation		7.14	1.24	7.1	**6.5**		
1934	for example only		8.37	1.38	8.4	**7.6**		
1935	7.54		7.54	1.55	7.5	**6.8**		
1936	9.13		8.6	interpolated	8.6	**7.8**		
1937	10.71		9.7	interpolated	9.7	**8.8**		
1938	12.30		10.8	interpolated	10.8	**9.8**		
1939	13.88		11.9	interpolated	11.9	**10.8**		
1940	15.47		13.0	interpolated	13.0	**11.8**		
1941	17.06		14.1	interpolated	14.1	**12.8**		
1942	18.64		15.1	interpolated	15.1	**13.7**		


STATISTICS OF THE CUMBERLAND COAL TRADE FROM ITS COMMENCEMENT.

Compiled from Official Sources, by C. Slack, Mount Savage, Md.

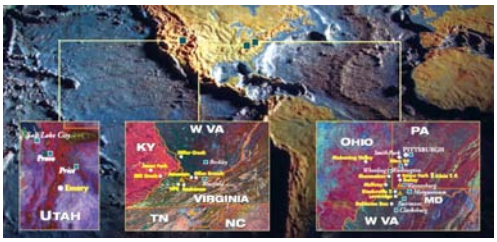
TABLE No. 1.—DETAILS OF 1865.

Cumberland (Md) coal trade table from 1865 showing Consolidated Coal prodn of 58,098 tons
Source: wikipedia


CONSOL history in films "The Great Expansion"


CONSOL history in films "The Great Expansion"


CONSOL history in films "The Great Expansion"
www.consolenergy.com/AboutUs/History.aspx

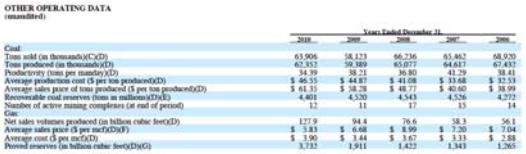


CONSOL Annual Report 2004, page 26.

	B	D	E	G	H	J	K
98	1943	20.23		16.2	interpolated	16.2	14.7
99	1944	21.81		17.3	interpolated	17.3	15.7
100	1945	23.40		18.4	interpolated	18.4	16.7
101	1946	24.99		19.5	interpolated	19.5	17.7
102	1947	26.57		20.6	interpolated	20.6	18.7
103	1948	28.16		21.7	interpolated	21.7	19.6
104	1949	29.75		22.7	interpolated	22.7	20.6
105	1950	31.33		23.8	interpolated	23.8	21.6
106	1951	32.92		24.9	interpolated	24.9	22.6
107	1952	34.50		26.0		26.0	23.6
108	1953	36.09		28.1	interpolated	28.1	25.5
109	1954	37.68		30.2	interpolated	30.2	27.4
110	1955	39.26		32.4	interpolated	32.4	29.4
111	1956	40.85		34.5	interpolated	34.5	31.3
112	1957	42.43		36.6	interpolated	36.6	33.2
113	1958	44.02		38.7	interpolated	38.7	35.1
114	1959	45.61		40.8	interpolated	40.8	37.0
115	1960	47.19		42.9	interpolated	42.9	39.0
116	1961	48.78		45.1	interpolated	45.1	40.9
117	1962	50.37		47.2	interpolated	47.2	42.8
118	1963	51.95		49.3	interpolated	49.3	44.7
119	1964	53.54		51.4	interpolated	51.4	46.6
120	1965	55.12		53.5	interpolated	53.5	48.6
121	1966	56.71		55.6	interpolated	55.6	50.5
122	1967	58.30		57.8	interpolated	57.8	52.4
123	1968	59.88		59.9		59.9	54.3
124	1969			60.9		60.9	55.2
125	1970			64.1		64.1	58.1
126	1971		Conoco purchased Consolidation Coal in 1966	54.8		54.8	49.7
127	1972			64.9		64.9	58.9
128	1973			60.5		60.5	54.9
129	1974			51.8		51.8	46.9
130	1975			54.9		54.9	49.8
131	1976			55.9		55.9	50.7
132	1977			48.0		48.0	43.5
133	1978			41.8		41.8	37.9
134	1979			50.1		50.1	45.5
135	1980			49.0		49.0	44.4
136	1981		DuPont purchased Conoco in 1981	42.1		42.1	38.2
137	1982			47.0		47.0	42.6
138	1983			42.2		42.2	38.3
139	1984			46.7		46.7	42.3
140	1985			42.7		42.7	38.7
141	1986			41.5		41.5	37.7
142	1987			52.5		52.5	47.6
143	1988			54.9		54.9	49.8
144	1989			53.5		53.5	48.5
145	1990			54.6		54.6	49.5
146	1991			55.2		55.2	50.1
147	1992			56.3		56.3	51.1
148	1993			45.6		45.6	41.4
149	1994			70.5		70.5	64.0
150	1995			69.1		69.1	62.7
151	1996		Rheinbraun acq Consolidated from DuPont in 1998	70.1		70.1	63.6
152	1997		Renamed CONSOL Energy in 1999	72.8		72.8	66.1
153	1998			73.2		73.2	66.4
154	1999			69.9		69.9	63.4
155	2000			69.4		69.4	63.0
156	2001			73.7		73.7	66.9
157	2002			66.2		66.2	60.1
158	2003			60.4		60.4	54.8
159	2004		CONSOL AnnRpt 2005 p. 5	67.7		67.7	61.5
160	2005			69.1		69.1	62.7
161	2006			67.4		67.4	61.2
162	2007	CONSOL metallurgical coal		64.6	bituminous coal	64.6	58.6
163	2008	2.3		65.1	2008 Form 10-K	65.1	59.0
164	2009	7.0		55.1	2010 Form 10-K	57.4	52.1
165	2010		Mt	55.8		62.8	57.0
166			metallurgical coal				
167	Total	9	-	3,798	4	3,807	3,454
168							
169					2009-2010 total:	120	-
170	Coal Types:	Lignite:	0.00%	Bituminous	92.3%	Metallurgical	7.7%
171							

CONSOL est. prodn 1864-2010 exceeds actual production by ~6 percent

CONSOL Energy Our History in film clips: "Innovation"
cumulative coal production 1864-1964: "close to 1 billion tons"
estimate above, cumulative production, including interpolated production:
1,192.8 tons
Note: the interpolated data exceeds CONSOL's estimate, and the production history will be corrected with actual CONSOL production 1864-1964.



OTHER OPERATING DATA
(unaudited)

	Years Ended December 31,				
	2010	2009	2008	2007	2006
Coal					
Tons sold (in thousands)(C)(D)	63,906	58,123	66,236	65,462	68,920
Tons produced (in thousands)(D)	62,352	59,389	65,077	64,617	67,432
Productivity (tons per manday)(D)	34.59	38.21	36.80	41.29	38.41
Average production cost ($ per ton produced)(D)	$ 46.55	$ 44.87	$ 41.08	$ 33.68	$ 32.53
Average sales price of tons produced ($ per ton produced)(D)	$ 61.35	$ 58.28	$ 48.77	$ 40.60	$ 38.99
Recoverable coal reserves (tons in millions)(D)(E)	4,401	4,520	4,543	4,526	4,272
Number of active mining complexes (at end of period)	12	11	17	15	14
Gas:					
Net sales volumes produced (in billion cubic feet)(D)	127.9	94.4	76.6	58.3	56.1
Average sales price ($ per mcf)(D)(F)	$ 5.83	$ 6.68	$ 8.99	$ 7.20	$ 7.04
Average cost ($ per mcf)(D)	$ 3.90	$ 3.44	$ 3.67	$ 3.33	$ 2.88
Proved reserves (in billion cubic feet)(D)(G)	3,732	1,911	1,422	1,343	1,265

CONSOL AnnRpt, 2010, page 71.

	Consol natural gas Billion cf	
	24.9	
	33.9	
	41.3	
	44.5	
	54.6	2005 Ann Rpt, p. 55.
	54.4	2005 Ann Rpt
	56.1	
	58.3	
CBM +	89.8	2008 Form 10-K
conventional +	93.6	2010 Form 10-K
Marcellus gas	126.2	
	678	

Cell: D11
Comment: Rick Heede:
Coal production by coal mining companies and state-owned enterprises, including subsidiaries of oil and gas companies.

Coal types produced are not ordinarily reported by coal operators (except for metallurgical coal). We distinguish, where possible and reasonably well known, between hard (bituminous and subbituminous) and soft (lignite or peat) coals, especially for the larger companies operating in regions such as Australia and India where soft coals are predominant. Soft coals have lower carbon content per tonne than do hard coals.

Cell: G20
Comment: Rick Heede:
Wikipedia: "The Consolidation Coal Company was established in 1864 and headquartered in the city of Cumberland, Maryland for the first 85 years (1864-1945) where the company became the largest bituminous coal company in the eastern United States.

Western Maryland's coal production rose about 1 million short tons in 1865, exceeded 4 million short tons by the turn of the century, and reached an all time high of about 6 million short tons in 1907. A small amount of the coal production in the early 1900s was premium smithing coal (as in blacksmith) that was specially processed and delivered in boxcars to customers throughout the United States and Canada.

Sharp declines in coal demand after 1920, reflecting downturns in the economy, recurrent labor problems and the extensive replacement of coal by petroleum, led to further consolidations and mergers in the coal industry. In 1945, Consolidated Coal Company merged with the Pittsburgh Coal Company, and the corporate headquarters was moved from Cumberland to Pittsburgh. In 1966 the Continental Oil Company (Conoco) purchased the assets of Consolidation Coal Company, and in 1981 DuPont purchased Conoco. The Consolidation Coal Company continued to exist as a subsidiary of Dupont until 1998 when the subsidiary was purchased from Dupont by Rheinbraun. As of 1999 the company has renamed itself to Consol Energy, reflecting the diversification of the business into other forms of energy."

1860 Consolidation Coal Company is formed with the merger of several smaller coal mining firms in the Georges Creek Valley.
1864 Consolidation Coal Company is formally incorporated in Cumberland, Maryland.
1878 Offices moved from New York to Baltimore.
1921 Moved offices back to New York.
1925 Consolidation Coal Company becomes largest bituminous coal producer in the United States, a distinction it retains today.
1945 Consolidation Coal merges with Pittsburgh Coal Company.
1958 Renamed Consolidation Coal Company.
1964 One hundred year anniversary.
1966 Continental Oil Company (Conoco) acquires Consolidation Coal Company.
1981 Conoco, along with subsidiary Consolidation Coal Company, is acquired by DuPont.
1991 RWE A.G, through its direct and indirect wholly owned subsidiaries Rheinbraun A.G. and Rheinbraun U.S.A. GmbH, purchases 50 percent of Consolidation Coal. CONSOL Energy Inc. is formed as a subsidiary of DuPont Energy Company and Rheinbraun affiliates.
1998 CONSOL Energy purchases shares of its common stock from DuPont Energy. After this transaction, Rheinbraun A.G. and Rheinbraun U.S. GmbH together own about 94 percent and DuPont Energy 6 percent of outstanding shares of common stock.
1999 CONSOL Energy stock begins trading on NYSE under the symbol "CNX," with the public offering of 20.6 million shares of its total 80.3 million shares.
2000 CONSOL Energy purchases extensive coalbed methane reserves and facilities in southwestern Virginia from MCN Energy Group Inc.
2001 CNX Ventures announces agreement on joint venture with Allegheny Energy to construct 88-megawatt, coalbed-methane-fueled electricity generating facility in southwestern Virginia, which begins operating in 2002. Acquires coalbed methane gas production and gathering pipeline facilities in southwest Virginia from Conoco.
2002 Through subsidiary CNX Marine Terminal Inc., begins operation as a break bulk and general cargo and warehouse provider at facilities in Baltimore.
2003 Completes sale of Canadian coal assets and port facilities to Fording Inc.

Cell: H55
Comment: Rick Heede:
CONSOL website: Our History in video clips: "Expansion."
Source: www.consolenergy.com/AboutUs/History.aspx

Cell: H82
Comment: Rick Heede:
CONSOL website: Our History in video clips: "Expansion." Consolidation Coal Company had become the largest coal producer in the United States by 1927, and produced 27 million tons.

Cell: G88
Comment: Rick Heede:
CONSOLIDATION COAL COMPANY
1st annual report, 1935
"Consolidation Coal Company was incorporated in Delaware on November 1, 1935 and as of that date it succeeded to the business and acquired substantially all of the properties and assets of The Consolidation Coal Company, a Maryland corporation, pursuant to the Plan of Reorganization of the latter Company confirmed in proceedings for its reorganization by the United States District Court for the District of Maryland. The predecessor Company was incorporated in 1860 and its business has been in active operation for the past seventy-five years....."

"Production of coal for the past three years from properties now owned by this Company" has been as listed here for 1933-1935. CMS enters only the quantities for "Net tons mined by the Company and its predecessor Company," and excludes "Net tons mined by lessees" (although these tonnages are listed in column H), but not included.

Cell: G122
Comment: Rick Heede:
Keystone Coal Industry Manual does not list coal production by major producers prior to 1969. Instead, a list of the "50 Biggest Bituminous Mines" is included, p. 186. The ten mines listed and owned by Consolidation Coal Company produced 24.38 million tons in 1967, or roughly half of the total tonnage in 1968. Clearly, Consolidated's many other mines are not accounted for.

Cell: G123
Comment: Rick Heede:
Keystone Coal Industry Manuals prior to 1969 do not list coal production by the largest coal producers. The 1969 edition, however, does list Consolidation Group production in 1969 as 1.7 percent higher than 1968, which we calculate here.

Cell: G124
Comment: Rick Heede:
Data from 1969-1993 from Keystone Coal Industry Manual (various years).

Cell: G155
Comment: Rick Heede:
Coal production 2000-2004 from CONSOL (2005) Annual Report 2004, p. 8 and 16.

Cell: P155
Comment: Rick Heede:
"Gas sales (net)" 2000-2004 from CONSOL (2005) Annual Report 2004, p. 11. This gas is derived from coal bed methane production systems at several of CONSOL's mines. Gross production is ~10 percent higher. Royalty holders' one-eighth interest is also deducted. 1,801 producting wells are located chiefly in Virginia; small amounts of conventional gas is also produced in PA and TN.

Annual Report (2005), p. 10: "CONSOL Energy produces gas entirely in Appalachia. Our primary producing property is our 178,000-acre tract in southwestern Virginia. We produce gas from this tract in four different ways. First, we drill wells from the surface into the coal seam. These wells, called "frac" wells, liberate the gas from the coal seam before we mine the coal. Second, from inside our Buchanan Mine, we drill horizontally into the coal seam to liberate more gas immediately prior to mining. Third, after we have mined the coal, we drill additional wells from the surface into the rubble, called "gob," left by mining, preventing the gas released in this process from seeping back into the active mining area. Fourth, we have begun drilling long holes horizontally into the coal seam from the mine's perimeter. All of these efforts have the additional benefit of enhancing mine safety."

Cell: D163
Comment: Rick Heede:

CONSOL has been a coking coal producer since the 1956 acquisition of Pocahantas Coal Company, although CONSOL's coking coal production levels are difficult to find. These results are from the 2010 Form-K field with SEC.

Cell: G163
Comment: Rick Heede:
CONSOL Energy (2009) SEC Form 10-K for 2008, page 5. Proved eserves of coal 1.683 billion tons.

Cell: P163
Comment: Rick Heede:
CONSOL Energy (2009) SEC Form 10-K , page 5: Approx 246 million cf per day in Dec08 (= 89.8 Bcf if annualized); CONSOL does not provide annuall production data. 1.4 Tcf of proved reserves (97 percent CBM).

Cell: G164
Comment: Rick Heede:
CONSOL Energy AR 2010 html, pgs 71-75; produced steam tons sold+produced high vol met tons sold+produced low vol met tons sold

Cell: P164
Comment: Rick Heede:
CONSOL 2010 10K pg 78,
coalbed methane, produced gas CBM sales volumes bcf, 2009-2010, data for 2009 and 2010 include CBM+conventional gas+marcellus gas, in that order