



2009 Minerals Yearbook

OHIO

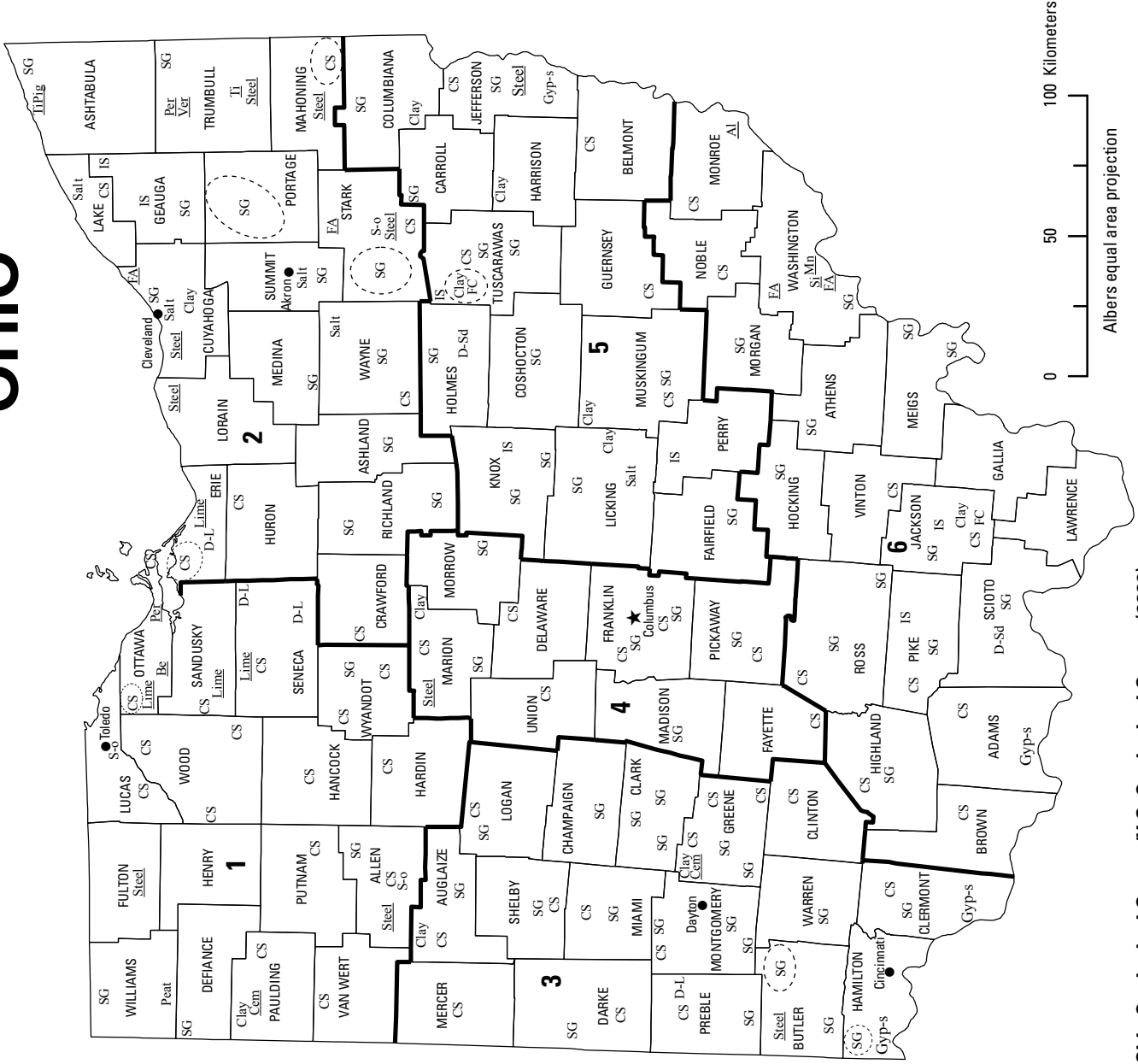
OHIO

LEGEND

- County boundary
- ★ Capital
- City
- Crushed stone/sand and gravel district boundary

MINERAL SYMBOLS
(Principal producing areas)

- Al Aluminum plant
- Be Beryllium plant
- Cem Cement plant and quarry
- Clay Common clay
- CS Crushed stone
- D-L Dimension limestone
- D-Sd Dimension sandstone
- EA Ferroalloys plant
- FC Fire clay
- Gyp-s Synthetic gypsum
- IS Industrial sand
- Lime Lime plant and quarry
- Mn Manganese plant
- Peat Peat
- Per Perlite
- Salt Salt
- S-o Sulfur (oil)
- SG Construction sand and gravel
- Si Silicon metal plant
- Steel Steel plant
- Ti Titanium metal plant
- TiPig Titanium pigment plant
- Ver Vermiculite plant
- Concentration of mineral operations



Source: Ohio Geological Survey/U.S. Geological Survey (2009).

THE MINERAL INDUSTRY OF OHIO

This chapter has been prepared under a Memorandum of Understanding between the U.S. Geological Survey and the Ohio Department of Natural Resources, Division of Geological Survey, for collecting information on all nonfuel minerals.

In 2009, Ohio's nonfuel raw mineral production was valued¹ at \$1.13 billion, based upon annual U.S. Geological Survey (USGS) data. This was a \$114-million, or 9.2%, decrease from the State's total nonfuel mineral production value of \$1.25 billion in 2008, which had decreased \$35 million, or 3%, from a total of \$1.28 billion in 2007. The State rose to 16th from 19th in rank among the 50 States in total nonfuel raw mineral production value and accounted for 1.9% of the U.S. total value.

Crushed stone, by production value, remained Ohio's leading nonfuel mineral, followed by salt, construction sand and gravel, lime, portland cement, and industrial sand and gravel (in descending order of value). This order of leading mineral commodities remained unchanged from 2008. Crushed stone accounted for 34% of the State's total nonfuel mineral production value, about the same as for 2007 and 2008. In 2009, the largest increase in production value took place with salt, up almost 8% from 2008, though production remained essentially unchanged (actual production values withheld—company proprietary data). Dimension stone, peat, and gemstones also had increases or remained unchanged from production value totals of 2008.

The largest decrease in production and production value took place with crushed stone, down by \$58 million, or 13%, from a total of \$446 million in 2008 to \$388 million, and with production down by 11.4 million metric tons (Mt), or 21%, from a total quantity produced of 54.1 Mt in 2008 to 42.7 Mt in 2009. Lime and portland cement were the next largest decreases in production value, down \$37 million and \$21 million, respectively. Lime production was down by 540,000 metric tons (t), or 33%, and portland cement production was down by 212,000 t, or 28%. Other significant decreases included common clays, construction sand and gravel, masonry cement, and industrial sand and gravel.

In 2009, Ohio continued to rank 3d in the quantity of fire clays; 4th in the quantities of common clays, lime, and salt; 9th in the quantity of crushed stone produced; 10th in the quantity of industrial sand and gravel; and 11th in the quantity of construction sand and gravel produced. Additionally, significant quantities of cement and dimension stone were produced in the State.

In 2009, the State continued to be the Nation's second leading raw steel-manufacturing State with an estimated output of almost 6.6 million metric tons (Mt), down about 55% from the nearly 14.8 Mt that was produced in 2008, which in turn

was down by 8.5% from the 16.1 Mt produced in 2007, as reported by the American Iron and Steel Institute (American Iron and Steel Institute, 2010, p. 74). Notwithstanding a significant decrease in the production, Ohio remained fifth among 11 primary aluminum-producing States; the production value of aluminum produced in the State was down by 45% from that of 2008 (actual values withheld—company proprietary data). Metals produced in the State, including aluminum, beryllium, ferroalloys, raw steel, and silicon, were processed from materials received from foreign and other State domestic sources.

The Ohio Department of Natural Resources, Division of Geological Survey² (ODGS), provided the following narrative information based upon its own surveys and estimates³ (Ohio Division of Geological Survey, 2010a).

Employment

In 2009, Ohio's total annual average employment for its nonfuel mineral industry was about 3,620 people (2,580 production employees and 1,040 nonproduction employees). The total wages for all employees at industrial mineral operations was \$153 million, a decrease from \$185 million in 2008. The average annual wage based on those employees was around \$42,200 (Ohio Division of Geological Survey, 2010a, p.12).

Commodity Review

Industrial Minerals

Clay and Shale.—Belden Brick Co. was the leading producer of building brick in the State and, with four clay operations, had the greatest number of clay-producing facilities in Ohio. Several other operators produced millions of bricks and other ceramic products at plants in Columbiana (tiles), Harrison (pipe), Licking (pipe), and Marion Counties (brick). Large quantities of Ohio clay and shale continued to be used in cement manufacture, lightweight aggregate applications, and in other clay products. In 2009, based upon ODGS production and sales data and estimates, total clay and shale production was 761,000 t (Ohio Division of Geological Survey, 2010a, p. 123–127).

Salt.—Rock salt was produced from two large underground mines beneath Lake Erie near Cleveland by Cargill Inc.

¹The terms "nonfuel mineral production" and related "values" encompass variations in meaning, depending upon the mineral products. Production may be measured by mine shipments, mineral commodity sales, or marketable production (including consumption by producers) as is applicable to the individual mineral commodity.

All 2009 USGS mineral production data published in this chapter are those available as of September 2011. All USGS Mineral Industry Surveys and USGS Minerals Yearbook chapters—mineral commodity, State, and country—can be retrieved over the Internet at URL <http://minerals.usgs.gov/minerals>.

²Mark E. Wolfe, a Senior Geologist with the Ohio Division of Geological Survey, authored the text of the State mineral industry information provided by that State agency.

³Includes reported and estimated values and published production figures. Some operations reporting sales did not report a value for those sales. A countywide- or statewide-average price per ton was calculated for each industrial mineral commodity based on sales for which the value was reported. These calculated averages were used to estimate the value of the sales for which the actual values were not reported.

(Cargill Salt Division) and Morton International Inc. These two companies were the major rock salt producers in Ohio and also operated artificial brine operations in Coventry, Summit County, and Milton, Wayne County, respectively. Two other companies operated natural brine solution operations in Madison and Newark Townships in Licking County (Ohio Division of Geological Survey, 2010a, p. 129).

Sand and Gravel, Construction.—In 2009, Shelly Materials Inc. (Thornville, OH) led the State in construction sand and gravel production, with about 2.7 Mt from 13 operations. This was followed by, in descending order of production: Martin Marietta Aggregates (Raleigh, NC), which produced 2.4 Mt from nine operations; Olen Corp. (Columbus, OH), which produced 1.7 Mt from four operations; Watson Gravel Inc. (Middletown, OH), which produced 1.4 Mt from seven operations; and, Barrett Paving Materials Inc. (Roseland, NJ), which produced 915,000 t from nine operations. ODGS reported that 25.5 Mt was produced in total for 2009 (Ohio Division of Geological Survey, 2010a, p. 95–96).

Sand and Gravel, Industrial.—The State has an abundance of high silica sandstone that can be used for glass manufacture and other industrial applications. Best Sand Corp. produced about 507,000 t of industrial sand from the Pennsylvanian-age Sharon conglomerate in Geauga and Jackson Counties. Ogleby Norton Industrial Sands, Inc. produced about 128,000 t of high silica sand from operations in Knox and Perry Counties. Production came from the Mississippian-age Black Hand Sandstone and the Pennsylvanian-age Massillon Sandstone, respectively (Ohio Division of Geological Survey, 2010a, p. 115–117).

Stone, Crushed.—In 2009, 104 active quarries, operated by 53 companies, produced or sold limestone and dolomite in the State, with a total production of 38 Mt (Ohio Division of Geological Survey, 2010a, p. 85).

Government Programs

The 2009 Report on Ohio Mineral Industries, prepared by the ODGS, contains detailed production, employment, and geologic information on each industrial mineral operation in the State (Ohio Division of Geological Survey, 2010a). Included with the report is a legislatively mandated map showing active mineral industry operations in the State. A Web-based Geographic Information System (GIS) version of the Ohio mineral industries map from the report allows a user to directly access updated data and a summary of industrial information listed by permitted operation (Ohio Division of Geological Survey, 2010b).

References Cited

- American Iron and Steel Institute, 2010, Table 24—Raw steel production by States, in American Iron and Steel Institute—AISI 2010 ASR: Washington, DC, American Iron and Steel Institute, 140 p.
- Ohio Division of Geological Survey, 2010a, 2009 report on Ohio mineral industries—An annual summary of the State’s economic geology: Columbus, OH, Ohio Division of Geological Survey annual report, 125 p. (Accessed January 15, 2013, at http://www.dnr.state.oh.us/Portals/10/pdf/min_ind_report/MinInd09.pdf.)
- Ohio Division of Geological Survey, 2010b, 2009 map of active mineral industry operations in Ohio: Columbus, OH, Ohio Division of Geological Survey map, November, 1 p. (Accessed January 15, 2013, at <http://www.dnr.state.oh.us/website/geosurvey/INDUSTRIAL/viewer.htm> and via <http://www.dnr.state.oh.us/tabid/8409/Default.aspx>.)

TABLE 1
NONFUEL RAW MINERAL PRODUCTION IN OHIO^{1,2}

(Thousand metric tons and thousand dollars)

Mineral	2007		2008		2009	
	Quantity	Value	Quantity	Value	Quantity	Value
Cement, portland	916	92,000 ^e	762	74,000 ^e	550	53,000 ^e
Clays, common	1,190	16,500	983	15,900	770	13,400
Gemstones, natural	NA	4	NA	4	NA	4
Lime	1,690	159,000	1,670	166,000	1,130	129,000
Sand and gravel:						
Construction	41,000 ^r	272,000 ^r	33,800 ^r	244,000 ^r	27,200	241,000
Industrial	1,080	33,000	1,010	34,300	849	26,300
Stone:						
Crushed	68,000	448,000	54,100 ^r	446,000 ^r	42,700	388,000
Dimension	37	6,050	29 ^r	3,660 ^r	26	4,790
Combined values of cement (masonry), clays (fire), peat, salt	XX	254,000	XX	262,000 ^r	XX	277,000
Total	XX	1,280,000	XX	1,250,000 ^r	XX	1,130,000

^eEstimated. ^rRevised. NA Not available. XX Not applicable.

¹Production as measured by mine shipments, sales, or marketable production (including consumption by producers).

²Data are rounded to no more than three significant digits; may not add to totals shown.

TABLE 2
OHIO: CRUSHED STONE SOLD OR USED, BY TYPE¹

Type	2008			2009		
	Number of quarries	Quantity (thousand metric tons)	Value (thousands)	Number of quarries	Quantity (thousand metric tons)	Value (thousands)
Limestone ²	94 ^r	50,900 ^r	\$420,000 ^r	89	40,400	\$368,000
Dolomite	6	2,720	22,400	5	1,530	11,300
Sandstone and quartzite	6	444	3,820	5	426	3,870
Miscellaneous stone	--	--	--	2	326	4,060
Total	XX	54,100 ^r	446,000 ^r	XX	42,700	388,000

^rRevised. XX Not applicable. -- Zero.

¹Data are rounded to no more than three significant digits; may not add to totals shown.

²Includes limestone-dolomite reported with no distinction between the two.

TABLE 3
OHIO: CRUSHED STONE SOLD OR USED BY PRODUCERS
IN 2009, BY USE¹

(Thousand metric tons and thousand dollars)

Use	Quantity	Value
Construction:		
Coarse aggregate (+1½ inch):		
Macadam	W	W
Riprap and jetty stone	36	401
Filter stone	W	W
Other coarse aggregate	425	3,790
Coarse aggregate, graded:		
Concrete aggregate, coarse	174	1,240
Bituminous aggregate, coarse	245	2,610
Bituminous surface-treatment aggregate	7	59
Railroad ballast	W	W
Other graded coarse aggregate	5,910	51,400
Fine aggregate (-¾ inch):		
Stone sand, concrete	W	W
Stone sand, bituminous mix or seal	107	1,540
Screening, undesignated	57	353
Other fine aggregate	885	7,800
Coarse and fine aggregates:		
Graded road base or subbase	1,480	10,300
Unpaved road surfacing	W	W
Crusher run or fill or waste	159	1,250
Other coarse and fine aggregates	1,810	13,800
Other construction materials	33	252
Agricultural, limestone	W	W
Other miscellaneous uses and specified uses not listed	3	70
Unspecified: ²		
Reported	19,100	197,000
Estimated	11,800	92,800
Total	42,700	388,000

W Withheld to avoid disclosing company proprietary data; included in "Total."

¹Data are rounded to no more than three significant digits; may not add to totals shown.

²Reported and estimated production without a breakdown by end use.

TABLE 4
OHIO: CRUSHED STONE SOLD OR USED BY PRODUCERS IN 2009, BY USE AND DISTRICT¹

(Thousand metric tons and thousand dollars)

Use	District 1		District 2		District 3	
	Quantity	Value	Quantity	Value	Quantity	Value
Construction:						
Coarse aggregate (+1½ inch) ²	W	W	W	W	32	331
Coarse aggregate, graded ³	W	W	2,540	19,000	W	W
Fine aggregate (-¾ inch) ⁴	246	2,530	476	4,690	W	W
Coarse and fine aggregate ⁵	1,350	9,260	W	W	694	5,440
Other construction materials	33	252	--	--	--	--
Agricultural ⁶	W	W	W	W	W	W
Other miscellaneous uses	--	--	--	--	--	--
Unspecified: ⁷						
Reported	7,880	85,300	2,430	24,800	2,560	23,400
Estimated	4,150	30,200	1,170	10,200	3,060	23,300
Total	16,200	152,000	7,570	66,900	6,660	54,700
Use	District 4		District 5		District 6	
	Quantity	Value	Quantity	Value	Quantity	Value
Construction:						
Coarse aggregate (+1½ inch) ²	--	--	--	--	W	W
Coarse aggregate, graded ³	--	--	742	6,920	W	W
Fine aggregate (-¾ inch) ⁴	--	--	--	--	W	W
Coarse and fine aggregate ⁵	--	--	--	--	W	W
Other construction materials	--	--	--	--	--	--
Agricultural ⁶	--	--	--	--	W	W
Other miscellaneous uses	--	--	--	--	3	70
Unspecified: ⁷						
Reported	4,940	51,900	286	2,330	1,030	8,810
Estimated	540	4,310	1,060	8,580	1,850	16,200
Total	5,480	56,200	2,090	17,800	4,660	39,500

W Withheld to avoid disclosing company proprietary data; included in "Total." -- Zero.

¹Data are rounded to no more than three significant digits; may not add to totals shown.

²Includes macadam, filter stone, riprap and jetty stone, and other coarse aggregate.

³Includes bituminous aggregate (coarse), bituminous surface-treatment aggregate, concrete aggregate (coarse), railroad ballast, and other graded coarse aggregate.

⁴Includes screening (undesignated), stone sand (bituminous mix or seal), stone sand (concrete), and other fine aggregate.

⁵Includes crusher run or fill or waste, graded road base or subbase, unpaved road surfacing, and other coarse and fine aggregates.

⁶Includes limestone.

⁷Reported and estimated production without a breakdown by end use.

TABLE 5
OHIO: CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN 2009,
BY MAJOR USE CATEGORY¹

Use	Quantity (thousand metric tons)	Value (thousands)	Unit value
Concrete aggregate (including concrete sand)	5,870	\$44,100	\$7.50
Plaster and gunite sands	399	1,610	4.04
Concrete products (blocks, bricks, pipe, decorative, etc.)	79	788	9.97
Asphaltic concrete aggregates and other bituminous mixtures	2,290	15,900	6.94
Road base and coverings ²	1,220	8,800	7.24
Fill	1,960	12,000	6.15
Snow and ice control	108	566	5.24
Other miscellaneous uses ³	263	2,010	7.65
Unspecified: ⁴			
Reported	14,000	148,000	10.60
Estimated	1,020	7,110	7.00
Total or average	27,200	241,000	8.87

¹Data are rounded to no more than three significant digits, except unit value; may not add to totals shown.

²Includes road and other stabilization (cement).

³Includes filtration and railroad ballast.

⁴Reported and estimated production without a breakdown by end use.

TABLE 6
OHIO: CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN 2009,
BY USE AND DISTRICT¹

(Thousand metric tons and thousand dollars)

Use	District 1		District 2		District 3	
	Quantity	Value	Quantity	Value	Quantity	Value
Concrete aggregates and concrete products ²	279	1,980	648	4,310	2,100	16,300
Asphaltic concrete aggregates and road base materials ³	319	2,320	730	5,740	958	6,910
Fill	156	772	608	4,150	566	2,830
Snow and ice control	--	--	27	206	W	W
Other miscellaneous uses ⁴	26	196	109	929	33	174
Unspecified: ⁵						
Reported	92	667	5,200	37,400	4,980	39,100
Estimated	--	--	627	4,390	37	258
Total	871	5,940	7,940	57,100	8,670	65,600
Use	District 4		District 5		District 6	
	Quantity	Value	Quantity	Value	Quantity	Value
Concrete aggregates and concrete products ²	565	5,020	1,150	7,640	1,620	11,200
Asphaltic concrete aggregates and road base materials ³	346	2,620	854	5,380	296	1,700
Fill	322	2,140	276	2,010	31	133
Snow and ice control	W	W	41	195	6	30
Other miscellaneous uses ⁴	71	569	40	161	17	118
Unspecified: ⁵						
Reported	124	887	2,120	58,400	1,450	11,500
Estimated	--	--	49	343	303	2,120
Total	1,430	11,200	4,530	74,100	3,720	26,800

W Withheld to avoid disclosing company proprietary data; included in "Other miscellaneous uses." -- Zero.

¹Data are rounded to no more than three significant digits; may not add to totals shown.

²Includes plaster and gunite sands.

³Includes road and other stabilization (cement).

⁴Includes filtration and railroad ballast.

⁵Reported and estimated production without a breakdown by end use.