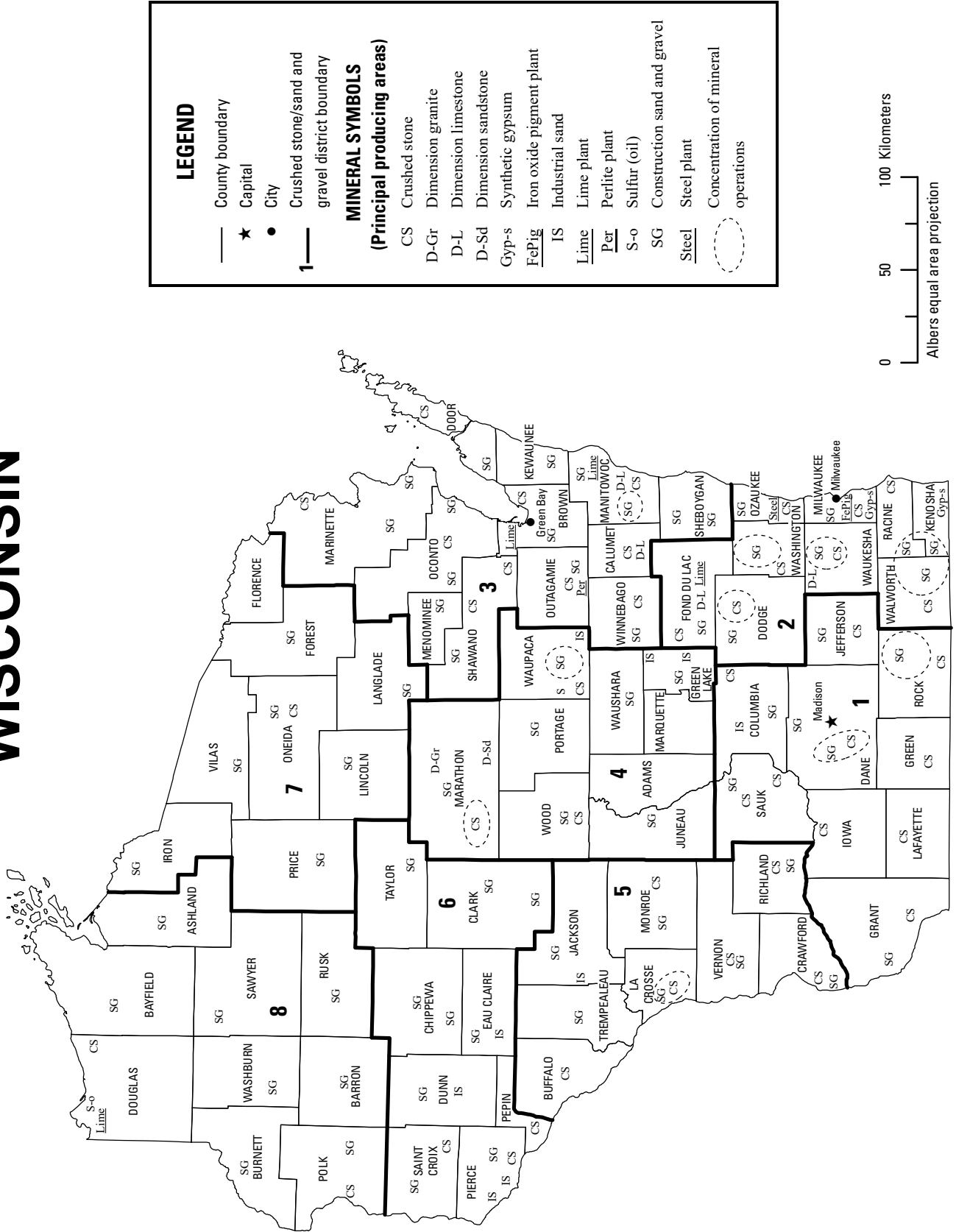




2010–2011 Minerals Yearbook

WISCONSIN

WISCONSIN

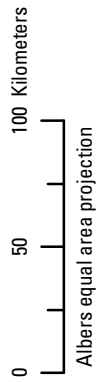


LEGEND

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

MINERAL SYMBOLS
(Principal producing areas)

- CS Crushed stone
- D-Gr Dimension granite
- D-L Dimension limestone
- D-Sd Dimension sandstone
- Gyp-s Synthetic gypsum
- FePig Iron oxide pigment plant
- IS Industrial sand
- Lime Lime plant
- Per Perlite plant
- S-o Sulfur (oil)
- SG Construction sand and gravel
- Steel Steel plant
- Concentration of mineral operations



THE MINERAL INDUSTRY OF WISCONSIN

This chapter has been prepared under a Memorandum of Understanding between the U.S. Geological Survey and the Wisconsin Geological and Natural History Survey for collecting information on all nonfuel minerals.

In 2011, Wisconsin's nonfuel mineral production¹ was valued at \$683 million, based upon annual U.S. Geological Survey (USGS) data. This was a \$154 million (29%) increase from the State's total nonfuel mineral value of \$529 million in 2010, which was \$6 million (1%) less than 2009. The State ranked 30th among the 50 States in nonfuel mineral production value and accounted for less than 1% of the U.S. total production value of \$74.7 billion. On a per capita basis, Wisconsin's nonfuel mineral production had a value of \$120, half the U.S. average of \$240.

Industrial sand and gravel, construction sand and gravel, and crushed stone were the State's leading mineral commodities, accounting for 80% of the State's total nonfuel mineral production value. In 2011, industrial sand and gravel, which accounted for 41% of the State's total nonfuel mineral production value, had the largest increase in production value, up by \$124 million (80%), and the largest increase in production quantity, up by 1.8 million metric tons (Mt). This was driven by demand for sand suitable for use in hydraulic fracturing applications. Dimension stone increased significantly in production value by \$15.4 million (66%) and in quantity by 26,000 metric tons (t) (18%). The production value of lime and construction sand and gravel increased by \$14.7 million (18%) and by \$10.7 million (8%), respectively. Crushed stone,

down by \$11.2 million (8%), was the only mineral commodity produced in the State to decrease in 2011. Although not significant compared to other mineral commodities in terms of production value, peat production stayed about the same as in 2010.

In 2010, industrial sand and gravel and lime were the only mineral commodities produced by the State to increase in production value. Industrial sand and gravel increased significantly in production value by \$40 million (35%) and in quantity by 740,000 t (25%). Lime increased in production value, up by \$11.2 million (16%). The quantity of lime produced also increased, up by 117,000 t (16%). Crushed stone had the largest decrease in production value, down by \$44.3 million (27%), though there was only a slight decrease of 503,000 t (2%) in production. The production value and production quantity of dimension stone decreased by \$6.6 million (22%) and 63,000 t (30%), respectively. The quantity of construction sand and gravel produced declined by 2.3 Mt (8%), and the production value declined by \$6.2 million (4.5%). Peat, last produced in 2008, was produced again in 2010.

In 2010 and 2011, Wisconsin remained ranked ninth in the production of lime, among 33 producing States. In the production of construction sand and gravel, Wisconsin rose to 8th in 2011, up from 12th in 2010. The State dropped in rank from second in 2009 to third in 2010 and 2011 in the production of industrial sand and gravel, among 33 producing States, and accounted for 13% of the Nation's total industrial sand and gravel production of 43.7 Mt in 2011. Wisconsin also declined in rank in the production tonnage of dimension stone to fourth from second between 2009 and 2010, but rose to third in 2011. Steel and iron oxide pigments were produced at locations throughout the State, but from material obtained from other domestic and foreign sources.

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 USGS mineral production data published in this chapter are those available as of May 2013. Data in this report are rounded to three significant digits and percentages are calculated from unrounded data. All USGS Mineral Industry Surveys and USGS Minerals Yearbook chapters—mineral commodity, State, and country—can be retrieved over the Internet at <http://minerals.usgs.gov/minerals>.

TABLE 1
NONFUEL RAW MINERAL PRODUCTION IN WISCONSIN^{1,2}
(Thousand metric tons and thousand dollars)

Mineral	2009			2010			2011		
	Number of quarries	Quantity (thousand metric tons)	Value ¹ (thousand)	Number of quarries	Quantity (thousand metric tons)	Value (thousand)	Number of quarries	Quantity (thousand metric tons)	Value (thousand)
Gemstones, natural				NA	7	NA	7	NA	7
Lime	4	117	\$103,000	750 ^r	70,000 ^r	867	81,200	939	95,900
Peat	--	--	--	--	--	W	W	W	W
Sand and gravel:									
Construction				28,500 ^r	140,000 ^r	26,200	134,000	27,500	145,000
Industrial				2,930 ^r	116,000 ^r	3,670	156,000	5,510	280,000
Stone:									
Crushed				23,100 ^r	179,000 ^r	24,000	135,000	23,800	124,000
Dimension				207	29,800	144	23,200	170	38,600
Total				XX	535,000 ^r	XX	529,000	XX	683,000

^rRevised. NA Not available. W Withheld to avoid disclosing company proprietary data; excluded from "Total." XX Not applicable. -- Zero.

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
WISCONSIN: CRUSHED STONE SOLD OR USED IN THE UNITED STATES, BY TYPE¹

Type	2009			2010			2011		
	Number of quarries	Quantity (thousand metric tons)	Value ¹ (thousand)	Number of quarries	Quantity (thousand metric tons)	Value (thousands)	Number of quarries	Quantity (thousand metric tons)	Value (thousands)
Limestone ²	194 ^r	19,300 ^r	\$103,000	182	20,700	\$115,000	189	20,000	\$104,000
Dolomite	4	117	626	23	165	882	22	125	728
Marble	--	--	--	1	65	387	1	85	442
Granite	9	1,780	6,790	9	1,460	8,410	9	2,170	11,600
Traprock	4	1,420	66,400	4	1,510	9,020	3	1,200	6,180
Sandstone and quartzite ²	--	--	--	1	17	100	1	13	70
Miscellaneous stone	6	466	2,340	1	85	511	1	139	718
Total or average	XX	23,100 ^r	179,000	XX	24,000	135,000	XX	23,800	124,000

^rRevised. XX Not applicable. -- Zero.

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

²Includes limestone-dolomite

³Includes sandstone-quartzite reported with no distinction between the two kinds of stone.

TABLE 3
WISCONSIN: CRUSHED STONE SOLD OR USED BY PRODUCERS
IN 2010, BY USE¹

(Thousand metric tons and thousand dollars)

Use	Quantity	Value
Construction:		
Coarse aggregate (+1½ inch):		
Riprap and jetty stone	64	762
Filter stone	W	W
Other coarse aggregate	59	439
Coarse aggregate, graded:		
Concrete aggregate, coarse	113	803
Bituminous aggregate, coarse	413	2,940
Bituminous surface-treatment aggregate	75	448
Railroad ballast	6	34
Other graded coarse aggregate	760	5,690
Fine aggregate (-¾ inch):		
Stone sand, bituminous mix or seal	W	W
Screening, undesignated	116	562
Other fine aggregate	216	1,250
Coarse and fine aggregates:		
Graded road base or subbase	1,370	6,970
Unpaved road surface	65	328
Crusher run or fill or waste	480	2,420
Other coarse and fine aggregates	1,530	7,840
Other construction materials	81	457
Agricultural:		
Agricultural, limestone	370	3,080
Other agricultural uses	W	W
Other miscellaneous uses and specified uses not listed	91	537
Unspecified:²		
Reported	681	4,030
Estimated	16,000	90,900
Total	24,000	135,000

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
WISCONSIN: CRUSHED STONE SOLD OR USED BY PRODUCERS
IN 2011, BY USE¹

(Thousand metric tons and thousand dollars)

Use	Quantity	Value
Construction:		
Coarse aggregate (+1½ inch):		
Macadam	W	W
Riprap and jetty stone	907	2,760
Filter stone	76	641
Unspecified coarse aggregate	64	567
Coarse aggregate, graded:		
Concrete aggregate, coarse	11	66
Bituminous aggregate, coarse	27	154
Bituminous surface-treatment aggregate	84	623
Railroad ballast	(3)	1
Unspecified graded coarse aggregate	639	4,740
Fine aggregate (-¾ inch):		
Stone sand, bituminous mix or seal	60	208
Screening, undesignated	147	431
Unspecified fine aggregate	186	887
Coarse and fine aggregates:		
Graded road base or subbase	1,620	6,640
Unpaved road surface	69	375
Crusher run or fill or waste	363	1,150
Roofing granules	W	W
Unspecified coarse and fine aggregates	1,620	7,650
Unspecified and other construction materials	90	517
Agricultural:		
Agricultural, limestone	333	4,410
Unspecified and other agricultural uses	W	W
Unspecified:²		
Reported	4	23
Estimated	16,600	86,700
Total	23,800	124,000

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.

³Less than ½ unit.

TABLE 5
WISCONSIN: CRUSHED STONE SOLD OR USED BY PRODUCERS IN 2010, 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	35	325	W	W	W	W
Coarse aggregate, graded ³	71	483	W	W	344	2,270
Fine aggregate (-¾ inch) ⁴	60	306	W	W	37	154
Coarse and fine aggregates ⁵	943	4,570	1,560	7,700	356	1,740
Other construction materials	46	248	W	W	W	W
Agricultural ⁶	219	1,650	W	W	W	W
Other miscellaneous uses and specified uses not listed ⁷	--	--	--	--	91	537
Unspecified:⁸						
Reported	--	--	1	4	--	--
Estimated	2,980	17,000	4,250	22,200	3,110	18,100
Total ¹⁰	4,360	24,600	6,770	37,100	4,010	23,300
Use	District 4		District 5		District 6	
	Quantity	Value	Quantity	Value	Quantity	Value
Construction:						
Coarse aggregate (+1½ inch) ²	--	--	W	W	2	28
Coarse aggregate, graded ³	--	--	W	W	--	--
Fine aggregate (-¾ inch) ⁴	W	W	W	W	2	20
Coarse and fine aggregates ⁵	W	W	W	W	97	963
Other construction materials	--	--	--	--	--	--
Agricultural ⁶	--	--	--	--	--	--
Other miscellaneous uses and specified uses not listed ⁷	--	--	--	--	--	--
Unspecified:⁸						
Reported	680	4,030	--	--	--	--
Estimated	1,120	6,560	3,190	19,100	701	4,200
Total ¹⁰	1,960	11,400	3,260	19,600	802	5,210
Use	District 7		District 8		Unspecified districts	
	Quantity	Value	Quantity	Value	Quantity	Value
Construction:						
Coarse aggregate (+1½ inch) ²	--	--	(9)	4	45	445
Coarse aggregate, graded ³	--	--	2	23	367	2,630
Fine aggregate (-¾ inch) ⁴	--	--	7	31	36	223
Coarse and fine aggregates ⁵	--	--	19	164	292	1,600
Other construction materials	--	--	--	--	--	--
Agricultural ⁶	--	--	28	248	--	--
Other miscellaneous uses and specified uses not listed ⁷	--	--	--	--	--	--
Unspecified:⁸						
Reported	--	--	--	--	--	--
Estimated	85	511	558	3,340	--	--
Total ¹⁰	85	511	613	3,810	740	4,900

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, riprap and jetty stone, filter stone, and other coarse aggregates.

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

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

⁵Includes graded road base or subbase, unpaved road surface, terrazzo and exposed aggregate, crusher run, roofing granules, and other coarse and fine aggregates.

⁶Includes agricultural limestone, poultry grit and mineral food, and other agricultural uses.

⁷Includes drain fields, waste material, lightweight aggregate (slate), pipe bedding, refractory stone (including ganister), and other miscellaneous uses.

⁸Reported and estimated production without a breakdown by end use.

⁹Less than ½ unit.

¹⁰District totals may not add up to the published State total, owing to revisions made after the production of the table and (or) proprietary data being withheld.

TABLE 6
WISCONSIN: CRUSHED STONE SOLD OR USED BY PRODUCERS IN 2011, 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	65	608	W	W	69	537
Coarse aggregate, graded ³	W	W	W	W	358	2,540
Fine aggregate (-¾ inch) ⁴	162	683	W	W	28	131
Coarse and fine aggregates ⁵	1,140	3,840	1,560	6,540	356	1,730
Other construction materials	W	W	W	W	--	--
Agricultural ⁶	173	1,390	W	W	16	209
Unspecified:⁷						
Reported	--	--	--	--	--	--
Estimated	2,980	15,400	3,900	20,200	3,850	19,800
Total	4,570	22,200	7,070	35,700	4,670	24,900
Use	District 4		District 5		District 6	
	Quantity	Value	Quantity	Value	Quantity	Value
Construction:						
Coarse aggregate (+1½ inch) ²	--	--	61	519	W	W
Coarse aggregate, graded ³	--	--	--	--	--	--
Fine aggregate (-¾ inch) ⁴	--	--	23	59	W	W
Coarse and fine aggregates ⁵	W	W	459	2,750	W	W
Other construction materials	--	--	3	18	--	--
Agricultural ⁶	--	--	7	71	--	--
Unspecified:⁷						
Reported	W	W	--	--	--	--
Estimated	1,360	6,890	2,350	12,300	741	3,830
Total	2,230	11,900	2,900	15,700	777	4,100
Use	District 7		District 8		Unspecified districts	
	Quantity	Value	Quantity	Value	Quantity	Value
Construction:						
Coarse aggregate (+1½ inch) ²	--	--	2	22	--	--
Coarse aggregate, graded ³	--	--	2	3	--	--
Fine aggregate (-¾ inch) ⁴	--	--	7	45	--	--
Coarse and fine aggregates ⁵	--	--	26	218	--	--
Other construction materials	--	--	--	--	--	--
Agricultural ⁶	--	--	45	400	--	--
Unspecified:⁷						
Reported	--	--	--	--	--	--
Estimated	113	582	648	3,350	693	4,350
Total	113	582	730	4,040	693	4,350

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, riprap and jetty stone, filter stone, and other coarse aggregates.

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

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

⁵Includes graded road base or subbase, unpaved road surface, terrazzo and exposed aggregate, crusher run, roofing granules, and other coarse and fine aggregates.

⁶Includes agricultural limestone, poultry grit and mineral food, and other agricultural uses.

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

⁵Includes graded road base or subbase, unpaved road surface, terrazzo and exposed aggregate, crusher run, roofing granules, and other coarse and fine aggregates.

⁶Includes agricultural limestone, poultry grit and mineral food, and other agricultural uses.

⁷Includes drain fields, waste material, lightweight aggregate (slate), pipe bedding, refractory stone (including ganister), and other miscellaneous uses.

TABLE 7
WISCONSIN: CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN 2010,
BY MAJOR USE CATEGORY¹

Use	Quantity (thousand metric tons)	Value (thousands)	Unit value
Concrete aggregate (including concrete sand)	3,290	\$18,200	\$5.53
Plaster and gunite sands	34	129	3.79
Concrete products (blocks, bricks, pipe, decorative, etc.)	91	395	4.34
Asphaltic concrete aggregates and other bituminous mixtures	1,300	8,400	6.46
Road base and coverings	3,800	17,300	4.55
Road stabilization (cement and lime)	171	1,030	6.02
Fill	988	3,350	3.39
Snow and ice control	222	969	4.36
Roofing granules	2	14	7.00
Other miscellaneous uses ²	441	2,560	5.80
Unspecified: ³			
Reported	970	5,390	5.56
Estimated	14,700	75,000	5.10
Total or average	26,200	134,000	5.11

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

²Includes filtration and railroad ballast.

³Reported and estimated production without a breakdown by end use.

TABLE 8
WISCONSIN: CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN 2011,
BY MAJOR USE CATEGORY¹

Use	Quantity (thousand metric tons)	Value (thousands)	Unit value
Concrete aggregate (including concrete sand)	4,630	\$24,800	\$5.36
Concrete products (blocks, bricks, pipe, decorative, etc.) ²	4	30	7.50
Asphaltic concrete aggregates and other bituminous mixtures	1,370	8,910	6.50
Road base and coverings	4,070	20,500	5.04
Road stabilization (cement and lime)	100	551	5.51
Fill	808	2,480	3.07
Snow and ice control	152	790	5.20
Railroad Ballast	36	290	8.06
Other miscellaneous uses ³	396	2,350	5.93
Unspecified: ⁴			
Reported	937	5,390	5.75
Estimated	15,000	78,600	5.24
Total or average	27,500	145,000	5.27

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

²Includes plaster and gunite sands.

³Includes filtration, golf course, and roofing granules.

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

TABLE 9
WISCONSIN: CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN 2010,
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	629	1,090	1,680	2,420	560	1,820
Asphaltic concrete aggregates and road base materials ³	W	W	2,070	3,390	694	1,420
Fill	75	265	498	1,990	115	362
Other miscellaneous uses ⁴	392	2,290	W	W	105	504
Unspecified: ⁵						
Reported	89	577	43	220	33	234
Estimated	1,960	2,000	4,370	4,880	1,730	1,500
Total ⁶	3,140	6,230	8,660	12,900	3,240	5,840
Use	District 4		District 5		District 6	
	Quantity	Value	Quantity	Value	Quantity	Value
Concrete aggregates and concrete products ²	W	W	112	589	W	W
Asphaltic concrete aggregates and road base materials ³	W	W	359	1,060	W	W
Fill	29	88,400	79	164	116	240
Other miscellaneous uses ⁴	124	627	W	W	69	299
Unspecified: ⁵						
Reported	721	2,670	--	--	31	505
Estimated	2,270	2,290	1,380	1,240	1,980	1,990
Total ⁶	3,140	99,500	1,930	3,060	2,200	3,030
Use	District 7		District 8		Unspecified districts	
	Quantity	Value	Quantity	Value	Quantity	Value
Concrete aggregates and concrete products ²	W	W	W	W	--	--
Asphaltic concrete aggregates and road base materials ³	W	W	485	2,170	330	727
Fill	44	154	31	140	--	--
Other miscellaneous uses ⁴	132	1,150	108	622	--	--
Unspecified: ⁵						
Reported	18	57	35	122	--	--
Estimated	1,250	1,170	729	835	506	500
Total ⁶	1,440	2,530	1,390	3,880	836	1,230

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 and lime).

⁴Includes filtration, railroad ballast, roofing granules, and snow and ice control.

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

⁶District totals may not add up to the published State total, owing to revisions made after the production of the table and (or) proprietary data being withheld.

TABLE 10
WISCONSIN: CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN 2011,
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	W	W	W	W	547	3,090
Asphaltic concrete aggregates and road base materials ³	W	W	W	W	588	2,880
Fill	73	227	359	1,300	99	254
Other miscellaneous uses ⁴	96	539	143	767	117	553
Unspecified: ⁵						
Reported	111	741	69	383	30	228
Estimated	1,640	8,690	2,780	14,700	1,860	9,830
Total	2,800	15,200	8,920	47,100	3,240	16,800
Use	District 4		District 5		District 6	
	Quantity	Value	Quantity	Value	Quantity	Value
Concrete aggregates and concrete products ²	W	W	W	W	455	2,500
Asphaltic concrete aggregates and road base materials ³	W	W	W	W	657	3,390
Fill	27	79	37	96	152	388
Other miscellaneous uses ⁴	100	715	33	364	43	213
Unspecified: ⁵						
Reported	682	3,770	--	--	14	172
Estimated	2,500	13,200	1,850	9,800	1,780	9,570
Total	3,630	19,500	2,120	11,400	3,100	16,200
Use	District 7		District 8		Unspecified districts	
	Quantity	Value	Quantity	Value	Quantity	Value
Concrete aggregates and concrete products ²	W	W	W	W	--	--
Asphaltic concrete aggregates and road base materials ³	W	W	W	W	--	--
Fill	47	99	15	42	--	--
Other miscellaneous uses ⁴	28	110	25	173	--	--
Unspecified: ⁵						
Reported	26	84	5	17	--	--
Estimated	1,180	6,390	660	3,450	750	3,010
Total	1,570	8,450	1,350	6,920	750	3,010

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 plaster and gunite sands.

³Includes road and other stabilization (cement and lime).

⁴Includes filtration, golf course, railroad ballast, roofing granules, and snow and ice control.

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