

# THE MINERAL INDUSTRY OF MINNESOTA

In 1999, the preliminary estimated value<sup>1</sup> of nonfuel mineral production for Minnesota was \$1.58 billion, according to the U.S. Geological Survey (USGS). This was a 9% decrease from that of 1998,<sup>2</sup> and followed a 3.6% increase from 1997 to 1998.

<sup>1</sup>The terms "nonfuel mineral production" and related "values" encompass variations in meaning, depending upon the minerals or 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 1999 USGS mineral production data published in this chapter are preliminary estimates as of May 2000, and are expected to change. For some mineral commodities, such as, construction sand and gravel and crushed stone, estimates are updated periodically. To obtain the most current information, please contact the appropriate USGS mineral commodity specialist. A telephone listing for the specialists may be retrieved over the Internet at URL <http://minerals.usgs.gov/minerals/contacts/comdir.html>, by using MINES FaxBack at (703) 648-4999 from a fax machine with a touch-tone handset (request Document #1000 for a telephone listing of all mineral commodity specialists), or by calling USGS information at (703) 648-4000 for the specialist's name and number. All Mineral Industry Surveys—mineral commodity, State, and country—also may be retrieved over the Internet at URL <http://minerals.usgs.gov/minerals>; facsimile copies may be obtained from MINES FaxBack.

<sup>2</sup>Values, percentage calculations, and rankings for 1998 may vary from the Minerals Yearbook, Area Reports: Domestic 1998, Volume II, owing to the revision of preliminary 1998 to final 1998 data. Data for 1999 are preliminary and are expected to change; related rankings may also be subject to change.

The State remained eighth among the 50 States in total nonfuel mineral production value, of which Minnesota accounted for 4% of the U.S. total.

In 1999, iron ore accounted for more than 82% of the State's nonfuel mineral production value, while construction sand and gravel and crushed stone accounted for 11% and 4%, respectively. In 1999, nearly all of the State's drop in value resulted from the \$170 million decrease in the value of iron ore; crushed stone decreased by \$4 million. The only significant increase was a \$16 million rise in the value of construction sand and gravel. In 1998, Minnesota's increase in value resulted mostly from the increased values of iron ore, up \$40 million, and construction sand and gravel, up \$27 million; the only significant decreases were relatively small drops in the values of crushed stone and industrial sand and gravel (table 1).

Compared with USGS estimates of the quantities produced in the other 49 States in 1999, Minnesota remained first in the Nation in iron ore and fifth in peat. The State rose to sixth from ninth in construction sand and gravel, but decreased to seventh from sixth in dimension stone. Additionally, the State produced significant quantities of industrial sand and gravel.

TABLE 1  
NONFUEL RAW MINERAL PRODUCTION IN MINNESOTA 1/ 2/

(Thousand metric tons and thousand dollars unless otherwise specified)

Mineral	1997		1998		1999 p/	
	Quantity	Value	Quantity	Value	Quantity	Value
Gemstones	NA	5	NA	5	NA	6
Iron ore, usable	47,900	1,430,000	47,200	1,470,000	42,000	1,300,000
Peat	29	1,500	30	1,630	34	1,040
Sand and gravel: Construction	34,500	127,000	39,400	154,000	42,600	170,000
Stone:						
Crushed	14,600	75,000	13,600 3/	71,500 3/	12,500 3/	67,500 3/
Dimension metric tons	33,200	17,900	48,100	18,800	45,200	19,200
Combined values of clays (common), lime, sand and gravel (industrial), stone [crushed sandstone (1998-99)]	XX	23,900	XX	23,000	XX	22,900
Total	XX	1,680,000	XX	1,740,000	XX	1,580,000

p/ Preliminary. NA Not available. XX Not applicable.

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

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

3/ Excludes certain stone; kind and value included with "Combined values" data.

TABLE 2  
MINNESOTA: CRUSHED STONE SOLD OR USED, BY KIND 1/

Kind	1997				1998			
	Number of quarries	Quantity (thousand metric tons)	Value (thousands)	Unit value	Number of quarries	Quantity (thousand metric tons)	Value (thousands)	Unit value
Limestone	32	7,350	\$35,600	\$4.85	30	7,180	\$37,300	\$5.19
Granite	4	W	W	W	4	W	W	5.85
Dolomite	4	3,080	16,900	5.49	4	3,560	17,400	4.88
Sandstone	3	W	W	W	1	(2/)	(2/)	(2/)
Quartzite	2	W	W	W	2	W	W	6.94
Total or average	XX	14,600	75,000	5.15	XX	13,600	71,500	5.26

W Withheld to avoid disclosing company proprietary data; included in "Total." XX Not applicable.

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

2/ Withheld from total to avoid disclosing company proprietary data.

TABLE 3  
MINNESOTA: CRUSHED STONE SOLD OR USED BY PRODUCERS IN 1998,  
BY USE 1/ 2/

Use	Quantity (thousand metric tons)	Value (thousands)	Unit value
Coarse aggregate (+1 1/2 inch):			
Riprap and jetty stone	184	\$1,480	\$8.02
Filter stone	48	285	5.94
Other coarse aggregate	148	1,410	9.55
Coarse aggregate, graded:			
Concrete aggregate, coarse	434	2,880	6.64
Bituminous aggregate, coarse	335	2,020	6.03
Bituminous surface-treatment aggregate	W	W	7.98
Railroad ballast	586	3,950	6.74
Other graded coarse aggregate	2,070	11,500	5.57
Fine aggregate (-3/8 inch):			
Stone sand, concrete	20	86	4.28
Stone sand, bituminous mix or seal	335	1,870	5.59
Screening, undesignated	W	W	3.39
Other fine aggregate	412	2,290	5.55
Coarse and fine aggregates:			
Graded road base or subbase	1,680	8,610	5.12
Unpaved road surfacing	491	1,880	3.83
Terrazzo and exposed aggregate	W	W	11.78
Crusher run or fill or waste	32	231	7.22
Other coarse and fine aggregates	2,010	10,200	5.09
Other construction materials	181	598	3.31
Agricultural:			
Agricultural limestone	275	1,230	4.47
Poultry grit and mineral food	(3/)	(3/)	16.45
Chemical and metallurgical: Lime manufacture	4	24	6.00
Unspecified: 4/			
Actual	2,660	13,500	5.07
Estimated	1,680	7,230	4.32
Total or average	13,600	71,500	5.26

W Withheld to avoid disclosing company proprietary data; included with "Other."

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

2/ Includes dolomite, granite, limestone, sandstone, and quartzite; excludes sandstone to avoid disclosing company proprietary data.

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

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

TABLE 4  
MINNESOTA: CRUSHED STONE SOLD OR USED BY PRODUCERS IN 1998, BY USE AND DISTRICT 1/ 2/ 3/

(Thousand metric tons and thousand dollars)

Use	District 3		District 4		District 5		District 6	
	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
Construction aggregates:								
Coarse aggregate (+1 1/2 inch) 4/	W	W	94	736	222	2,040	W	W
Coarse aggregate, graded 5/	W	W	676	4,430	2,010	11,000	W	W
Fine aggregate (-3/8 inch) 6/	W	W	(7/)	(7/)	419	2,350	W	W
Coarse and fine aggregate 8/	W	W	427	2,600	2,970	15,000	W	W
Other construction materials	1,080	6,810	--	--	181	598	720	2,910
Agricultural 9/	(7/)	(7/)	16	165	178	791	(7/)	(7/)
Chemical and metallurgical 10/	--	--	--	--	4	24	--	--
Other miscellaneous uses	(7/)	(7/)	--	--	--	--	--	--
Unspecified: 11/								
Actual	--	--	(7/)	(7/)	--	--	(7/)	(7/)
Estimated	339	1,120	693	3,250	46	217	597	2,650
Total	1,430	7,960	2,610	15,000	6,030	32,000	3,520	16,400

W Withheld to avoid disclosing company proprietary data; included with "Other construction materials." -- Zero.

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

2/ Includes dolomite, granite, limestone, and quartzite; excludes sandstone to avoid disclosing company proprietary data.

3/ No production reported in Districts 1 and 2.

4/ Includes filter stone, riprap and jetty stone, and other coarse aggregate.

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

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

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

8/ Includes crusher run (select material or fill), graded road base or subbase, other coarse and fine aggregates, terrazzo and exposed aggregate, and unpaved road surfacing.

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

10/ Includes lime manufacture.

11/ Reported and estimated production without a breakdown by end use.

TABLE 5  
MINNESOTA: CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN 1998,  
BY MAJOR USE CATEGORY 1/

Use	Quantity (thousand metric tons)	Value (thousands)	Unit Value
Concrete aggregate	9,710	\$48,600	\$5.01
Plaster and gunit sands	122	930	7.62
Concrete products (blocks, bricks, pipe, decorative, etc.)	508	3,330	6.56
Asphaltic concrete aggregates and other bituminous mixtures	5,670	25,100	4.42
Road base and coverings	10,100	29,100	2.87
Road stabilization (cement)	94	794	8.45
Road stabilization (lime)	61	104	1.70
Fill	2,980	6,300	2.11
Snow and ice control	180	592	3.29
Railroad ballast	299	1,050	3.52
Filtration	131	674	5.15
Other miscellaneous uses 2/	390	1,300	3.34
Unspecified: 3/			
Actual	2,670	13,900	5.19
Estimated	6,480	22,300	3.45
Total or average	39,400	154,000	3.91

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

2/ Includes roofing granules.

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

TABLE 6  
MINNESOTA: CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN 1998, BY USE AND DISTRICT 1/

(Thousand metric tons and thousand dollars)

Use	District 1		District 2		District 3	
	Quantity	Value	Quantity	Value	Quantity	Value
Concrete aggregate	1,180	6,590	401	1,290	3,220	14,400
Concrete products (blocks, bricks, pipe, decorative, etc.) 2/	11	57	80	574	321	1,310
Asphaltic concrete aggregates and other bituminous mixtures	296	1,150	W	W	3,510	14,400
Road base and coverings 3/	1,320	4,950	2,210	4,990	4,340	12,000
Fill	506	1,650	493	1,070	260	701
Snow and ice control	--	--	23	47	74	213
Other miscellaneous uses 4/	177	360	814	2,320	207	1,150
Unspecified 5/	1,950	6,640	825	2,970	926	5,960
Total	5,440	21,400	4,850	13,300	12,800	50,100
	District 4		District 5		District 6	
	Quantity	Value	Quantity	Value	Quantity	Value
Concrete aggregate	555	2,690	4,030	21,900	329	1,770
Concrete products (blocks, bricks, pipe, decorative, etc.) 2/	18	120	W	W	W	W
Asphaltic concrete aggregates and other bituminous mixtures	750	5,290	575	2,910	W	W
Road base and coverings 3/	1,010	2,800	1,140	4,390	252	812
Fill	89	120	1,550	2,630	87	133
Snow and ice control	W	W	W	W	W	W
Other miscellaneous uses 4/	56	244	219	2,360	166	447
Unspecified 5/	1,850	7,300	1,570	5,260	2,030	8,070
Total	4,320	18,600	9,070	39,500	2,860	11,200

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

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

2/ Includes plaster and gunite sands.

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

4/ Includes filtration, railroad ballast, and roofing granules.

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