

# THE MINERAL INDUSTRY OF NEW JERSEY

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

In 1999, the preliminary estimated value<sup>1</sup> of nonfuel mineral production for New Jersey was \$300 million, according to the U.S. Geological Survey (USGS). This was a more than 3% increase from that of 1998<sup>2</sup> and followed an 8.6% increase from 1997 to 1998.

Crushed stone and construction sand and gravel, by value, were New Jersey's leading nonfuel mineral commodities. In 1999, the two commodities increased in value by about \$8 million and \$2 million, respectively, accounting for most of the State's increase in value. Only peat showed a decrease (small) in value and gemstones and common clay values were unchanged. In 1998, an \$8 million increase in value for crushed stone led the State's rise in value; industrial and construction sand and gravel increased by about \$6 million each.

Based upon USGS estimates of the quantities of minerals produced in the United States in 1999, New Jersey remained third among the States in industrial sand and gravel, having risen from seventh in 1997. The State continued to be the significantly larger producer of two States that produce greensand marl. Greensand is used directly as an organic conditioner and fertilizer for soils and as a water filtration medium to remove soluble iron and manganese from well water. Additionally, significant quantities of construction sand and gravel and crushed stone were produced in the State.

The following narrative information was provided by the New Jersey Geological Survey<sup>3</sup> (NJGS). Most New Jersey mining and exploration activities continue to be limited to sand and gravel, industrial sand, and crushed stone. Some clay, greensand, and peat mining takes place, but is of relatively minor importance. No new land-based mining operations of any significance started up during 1999.

Various large-scale capital projects in 1999 contributed to a healthy construction sector in the State. Major road-widening and

realignment projects took place around the State, including work in Atlantic City on major road improvements.

Work on the 4-kilometer (km), \$330 million Atlantic City/Brigantine Connector Tunnel and Roadway Project began during the year. When completed in 2001, the connector will have 11 bridges and a 640-meter (m) tunnel moving traffic through a residential area, under US Route 30 and into the Marina District. The roadway will link the Atlantic City Expressway with the city's Marina District. This project alone requires 612,000 cubic meters (m<sup>3</sup>) of specified structural fill (sand and gravel containing minimal amounts of fines), 22,000 m of permanent pilings, 87,000 m<sup>3</sup> of structural concrete, 67,000 metric tons (t) of asphalt pavement, 960 t of bridge structural steel, 7,700 t of reinforcing steel, 6,100 m of reinforced concrete pipe, and 7,570 m of permanent concrete barrier rail.

In the Marina District of Atlantic City, the Mirage Resorts, Inc. project began the placement of 1.4 million cubic meters of fill material, which will be needed for the construction of a new casino and hotel at the site.

The Route 29 tunnel project in the State capital of Trenton is another project begun during the year, which will require 57,375 m<sup>3</sup> of concrete over 30 months.

Mergers and takeover activity during the year included the Tilcon NY/NJ, Inc. purchase of Millington Quarry, Inc. and Affiliates. Tilcon previously owned a single quarry in Prospect Park, Passaic County, from which it produced crushed rock. With this acquisition, Tilcon becomes the largest aggregate producer in New Jersey. The other big acquisition of the year was U.S. Silica Co.'s purchase of some of Unimin Corp.'s properties in New Jersey. This increases U.S. Silica's silica sand and construction sand holdings ten-fold in New Jersey.

Other items of interest include the New Jersey Department of Transportation approval of the importation of foreign cement and its establishment of uniform quality controls of aggregate products, which will take effect in January 2000.

Sand and gravel exploration and development remains the most active area of interest in the State. Offshore exploration and development of sand and gravel resources remains a topic of much interest. The U.S. Department of the Interior, Minerals Management Service, has proposed its first sand and gravel sale from an approximately 28,000-hectare site, 5 to 19 km off the New Jersey coast in Federal waters of the Atlantic Ocean. The site is located east of Monmouth County, from slightly north of Long Branch and slightly south of Belmar. Public hearings were continuing at the end of the year, with no decision expected until sometime in 2000 at the earliest.

The U.S. Army Corps of Engineers and the New Jersey Department of Environmental Protection are committed to long-term beach replenishment projects along the Atlantic Coast. The NJGS in cooperation with the U.S. Department of the Interior, Minerals Management Service, is continuing to locate and document offshore sand and heavy mineral occurrences.

<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.

<sup>3</sup>Lloyd Mullikin, Supervising Geologist with the New Jersey Geological Survey, authored the text of New Jersey mineral industry information submitted by that agency.

TABLE 1  
NONFUEL RAW MINERAL PRODUCTION IN NEW JERSEY 1/ 2/

(Thousand metric tons and thousand dollars)

Mineral	1997		1998		1999 p/	
	Quantity	Value	Quantity	Value	Quantity	Value
Clays: Common	W	131	W	W	W	W
Gemstones	NA	1	NA	1	NA	1
Sand and gravel:						
Construction	16,100	85,300	16,600	90,800	16,600	92,800
Industrial	1,530	28,300	1,800	34,400	1,840	34,500
Stone: Crushed	22,800	153,000	23,900	161,000	24,400	169,000
Combined values of other industrial minerals	XX	(3/)	XX	3,080	XX	2,910
Total	XX	267,000 4/	XX	290,000	XX	300,000

p/ Preliminary. NA Not available. W Withheld to avoid disclosing company proprietary data; value included with " Combined values" data. 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/ Value excluded to avoid disclosing company proprietary data.

4/ Partial total, excludes values of greensand and peat that must be concealed to avoid disclosing company proprietary data.

TABLE 2  
NEW JERSEY: 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	5 r/	W	W	\$10.4	4	1,110	\$7,670	\$6.90
Granite	8 r/	8,990 r/	\$68,400 r/	7.60	11	9,830	62,800	6.38
Sandstone	1	W	W	5.43	1	W	W	6.11
Traprock	10	11,700	67,600	5.78	10	12,200	86,600	7.09
Miscellaneous stone	1	W	W	11.74	1	W	W	6.43
Total or average	XX	22,800	153,000	6.71	XX	23,900	161,000	6.77

r/ Revised. 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, except unit value; may not add to totals shown.

TABLE 3  
NEW JERSEY: 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	95	\$537	\$5.65
Filter stone	27	325	12.04
Other coarse aggregate	1,020	6,060	5.92
Coarse aggregate, graded:			
Concrete aggregate, coarse	622	5,310	8.54
Bituminous aggregate, coarse	880	6,000	6.82
Bituminous surface-treatment aggregate	73	560	7.67
Railroad ballast	W	W	W
Other graded coarse aggregate	7,040	45,500	6.47
Fine aggregate (-3/8 inch):			
Stone sand, concrete	133	804	6.05
Stone sand, bituminous mix or seal	1,020	8,730	8.58
Screening, undesignated	1,100	7,520	6.86
Other fine aggregate	636	3,660	5.75
Coarse and fine aggregates:			
Graded road base or subbase	544	2,700	4.96
Terrazzo and exposed aggregate	7	188	26.86
Crusher run or fill or waste	518	2,660	5.14
Other coarse and fine aggregates	4,800	33,200	6.91
Agricultural:			
Agricultural limestone	72	1,070	14.86
Poultry grit and mineral food	9	200	22.22
Chemical and metallurgical:			
Lime manufacture	2	10	5.00
Chemical stone	6	105	17.50
Special:			
Whiting or whiting substitute	91	1,250	13.74
Roofing granules	236	5,140	21.79
Unspecified: 3/			
Actual	W	W	W
Estimated	4,700	28,500	6.05
Total or average	23,900	161,000	6.77

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

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

2/ Includes granite, limestone, miscellaneous stone, sandstone, and traprock.

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

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

(Thousand metric tons and thousand dollars)

Use	Districts 1 and 3	
	Quantity	Value
<b>Construction aggregates:</b>		
Coarse aggregate (+1 1/2 inch) 3/	1,150	6,920
Coarse aggregate, graded 4/	8,790	58,500
Fine aggregate (-3/8 inch) 5/	2,880	20,700
Coarse and fine aggregate 6/	6,100	43,800
Other construction materials	W	W
Agricultural 7/	81	1,270
Chemical and metallurgical 8/	8	115
Special 9/	91	1,250
Unspecified: 10/		
Actual	W	W
Estimated	4,700	28,500
Total	23,900	161,000

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

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

2/ No production reported for District 2; District 3 included with District 1 to avoid disclosing company proprietary data.

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

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

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

6/ Includes graded roadbase or subbase, terrazzo and exposed aggregate, crusher run (select or material use), and other coarse and fine aggregates.

7/ Includes agricultural limestone and poultry grit and mineral food.

8/ Includes lime manufacture and chemical stone or alkali works.

9/ Includes whitening or whitening substitute and roofing granules.

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

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

Use	Quantity	Value (thousands)	Unit value
	(thousand metric tons)		
Concrete aggregate	5,800	\$31,900	\$5.50
Plaster and gunite sands	391	2,170	5.55
Concrete products (blocks, bricks, pipe, decorative, etc.)	151	940	6.23
Asphaltic concrete aggregates and other bituminous mixtures	1,920	12,200	6.33
Road base and coverings	291	1,830	6.29
Fill	728	1,910	2.62
Snow and ice control	103	644	6.25
Other miscellaneous uses 2/	165	1,140	6.64
Unspecified: 3/			
Actual	4,080	23,400	5.72
Estimated	2,920	14,700	5.03
Total or average	16,600	90,800	5.48

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

2/ Includes filtration.

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

TABLE 6  
NEW JERSEY: 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 and concrete products 2/	643	5,440	2,760	15,100	2,940	14,500
Asphaltic concrete aggregates and other bituminous mixtures	107	1,110	1,660	10,400	158	668
Snow and ice control	155	987	21	205	115	639
Road base and coverings	78	518	W	W	W	W
Other miscellaneous uses 3/	439	1,770	224	581	256	814
Unspecified: 4/						
Actual	--	--	1,910	11,300	2,180	12,100
Estimated	1,930	10,200	122	883	870	3,570
Total	3,350	20,100	6,690	38,400	6,520	32,300

W Withheld to avoid disclosing company proprietary data; included with "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 fill and filtration.

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