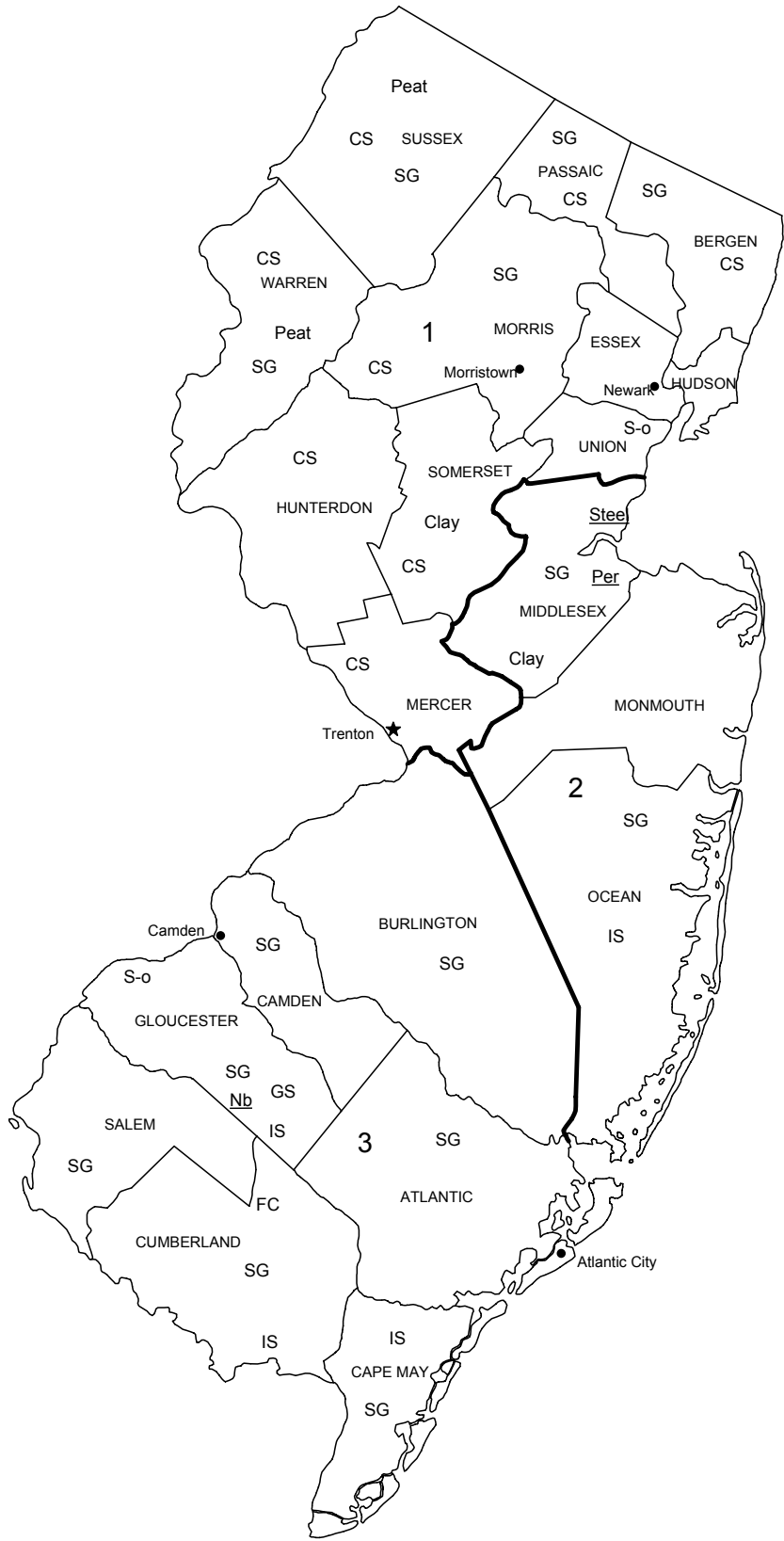


NEW JERSEY

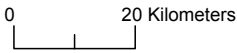


LEGEND

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

**MINERAL SYMBOLS
(Major producing areas)**

- Clay Common clay
- CS Crushed stone
- FC Fire clay
- GS Greensand
- IS Industrial sand
- Nb Columbium (niobium) plant
- Peat Peat
- Per Perlite plant
- S-o Sulfur (oil)
- SG Construction sand and gravel
- Steel Steel plant



Source: New Jersey Geological Survey/U.S. Geological Survey (2003)

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 2003, the estimated value¹ of nonfuel mineral production for New Jersey was \$272 million, based upon preliminary U.S. Geological Survey (USGS) data. This was up about 5% from that of 2002² and followed a 19% decrease from 2001 to 2002.

Crushed stone and construction sand and gravel, by value, were New Jersey's leading nonfuel mineral commodities, followed by industrial sand and gravel and greensand marl. In 2003, increases in the production and values of crushed stone accounted for most of the State's increase in value; smaller increases also took place in industrial sand and gravel, greensand marl, and peat (descending order of change) (table 1).

Conversely, in 2002, with crushed stone production down about 23%, a \$57 million decrease in the value of crushed stone and smaller decreases in all of New Jersey's other nonfuel mineral commodities (except peat, which was unchanged) resulted in the State's drop in value for the year (table 1).

Based upon USGS estimates of the quantities of minerals produced in the United States in 2002, New Jersey continued to be the only State to produce greensand marl and was seventh in the production of industrial sand and gravel (sixth in 2002). Greensand marl was 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 Survey³ (NJGS). Mining activities in New Jersey were limited to crushed stone (traprock, granite, limestone, dolomite, and marble), construction sand and gravel, greensand marl, and industrial sand, and, to a lesser extent, the production of clay and peat (listings in order of quantity produced). No new land-based mining operations were begun during 2003. Several large-scale capital projects and a very strong private home building sector during the year

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 2003 USGS mineral production data published in this chapter are preliminary estimates as of July 2004 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. Specialist contact information may be retrieved over the Internet at URL <http://minerals.usgs.gov/minerals/contacts/comdir.html>; alternatively, specialists' names and telephone numbers may be obtained by calling USGS information at (703) 648-4000 or by calling the USGS Earth Science Information Center at 1-888-ASK-USGS (275-8747). All USGS Mineral Industry Surveys and USGS Minerals Yearbook chapters—mineral commodity, State, and country—also may be retrieved over the Internet at URL <http://minerals.usgs.gov/minerals>.

²Values, percentage calculations, and rankings for 2002 may differ from the Minerals Yearbook, Area Reports: Domestic 2002, Volume II, owing to the revision of preliminary 2002 to final 2002 data. Data for 2003 are preliminary and are expected to change; related rankings also may change.

contributed to an active construction sector. After more than 10 years of limited new construction at Atlantic City's casino establishments, construction of the city's newest casino, the Borgata Casino and Entertainment Resort, was completed. This project has helped renew growth in Atlantic City and its casino gambling industry, thereby contributing to an increase in demand for mineral resources in 2003 that was projected by the NJGS to continue into the foreseeable future.

Exploration and Development

Mineral exploration continued to be limited to the offshore area along New Jersey's Atlantic Coast. The U.S. Department of the Interior, USGS, and Minerals Management Service (MMS) continued their interest in defining resources and exploring the feasibility of selling sand and gravel from Federal waters located 5 to 19 kilometers (km) (3 to 12 miles) off the New Jersey coast. Although no decision was made concerning these offshore sand and gravel resources, development of them remained a topic of much interest and discussion. Currently, offshore mining remains limited to the sand derived from the maintenance dredging of the Ambrose Shipping Channel and to the limited evaluation dredging in the Sandy Hook Shipping Channel in Raritan Bay. Additional dredging projects were being considered by Federal officials and the Port Authority of New York and New Jersey.

Of particular interest to the minerals industry was the sand and gravel sector because of a continuing construction boom, increasing value of the mineral resource, and scarcity of sites available for mining. No new sand and gravel pit has opened in at least 10 years and no rock quarry in the past 35 years in the State. With increasing property values, increasing demand for housing, and environmental concerns, land that might otherwise be available for mining is slowly disappearing. Various bills proposed in the New Jersey State Legislature, designed to help streamline and simplify the mining permit process, made no progress during the year. Resistance at the local level and environmental considerations remained the principal deterrents to growth in this industry.

Commodity Review

Industrial Minerals

Merger and takeover activity during 2003 included the acquisition of Better Materials Corp. from the Better Minerals and Aggregates Co. by Hanson PLC, the international building

³Lloyd Mullikin, Supervising Geologist, authored the text of the State mineral industry information provided by the New Jersey Geological Survey.

materials company. Also Eastern Concrete Materials, Inc. (a Division of U.S. Concrete, Inc.) completed its acquisition of the assets of Lafarge Aggregates Southeast Inc.'s Hamburg Quarry in Hamburg, New Jersey.

Construction Sand and Gravel.—In recent years, the New Jersey mining industry has become increasingly creative in its attempts to develop marketable resources. In 2003, two such projects involved the State's sand and gravel resources. Haas Sand and Gravel, Inc. entered into negotiations with the New Jersey Department of Environmental Protection (NJDEP), the New Jersey Pineland Commission (NJPC), and the local government of Tabernacle Township, Burlington County. It wanted to gain the right to reopen a previously mined 39-hectare (ha) (96-acre) sand and gravel site that the company obtained from Lakes Sand and Gravel Co. The site contains a municipal landfill that is approximately 3.6 ha in size, which was used for several decades, but has been inactive since 1968. Haas agreed to clean up the site and remove the landfill under NJDEP supervision, in return for the right to restart mining. Both proposals were still under consideration at the yearend.

Industrial Sand and Gravel.—The U.S. Silica Company entered into negotiations with the NJDEP and the NJPC to obtain a 20-year lease agreement for the rights to mine sand and gravel from a site in the Millville (Bevans) Wildlife

Management Area. This property is adjacent to U.S. Silica's Ackley Road Mine site in Downe Township, Cumberland County. In return for the right to mine the 105-ha site, the company offered to donate 1,200 ha of land and to sell an additional 1,200 ha of land it owns near the site to the State. Additionally, after 20 years of control, the company would return the mined 105 ha to the State.

Government Activities

The U.S. Army Corps of Engineers (USACE) and the NJDEP remained committed to long-term beach-replenishment projects along the Atlantic Coast. Most of the sand used was extracted from sites within 5 km of the coast. To support these projects and also to identify other offshore sand resources, the NJGS entered into year 12 of a cooperative agreement with the MMS to locate and document offshore sand occurrences by conducting marine seismic surveys in conjunction with collecting vibrocore samples from the seabed at various locations along the State's coast.

Recent publications and maps concerning the geology of New Jersey are available on the Internet at either URL <http://www.state.nj.us/dep/njgs/> or URL <http://www.njgeology.org/>.

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

(Thousand metric tons and thousand dollars)

Mineral	2001		2002		2003 ^P	
	Quantity	Value	Quantity	Value	Quantity	Value
Gemstones	NA	1	NA	1	NA	1
Sand and gravel:						
Construction	16,800	98,000	16,000	96,300	15,200	92,000
Industrial	1,580	34,800	1,420	32,700	1,510	33,800
Stone, crushed	26,400	184,000	20,500	127,000	22,500	142,000
Combined values of clays (common), greensand marl, and peat	XX	4,170	XX	3,910	XX	4,530
Total	XX	321,000	XX	260,000	XX	272,000

^PPreliminary. 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
NEW JERSEY: CRUSHED STONE SOLD OR USED, BY KIND¹

Kind	2001				2002			
	Number of quarries	Quantity (thousand metric tons)	Value (thousands)	Unit value	Number of quarries	Quantity (thousand metric tons)	Value (thousands)	Unit value
Limestone	2	W	W	\$14.24	1	W	W	\$15.43
Granite	11	11,100	\$72,800	6.54	11	7,970	\$50,600	6.35
Traprock	12	14,900	105,000	7.06	12	11,800	67,300	5.68
Miscellaneous stone	(2) [†]	W	W	3.58 [†]	(2)	W	W	3.58
Total or average	XX	26,400	184,000	6.95	XX	20,500	127,000	6.21

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

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

²Sales/distribution yards.

TABLE 3
NEW JERSEY: CRUSHED STONE SOLD OR USED BY PRODUCERS IN 2002, BY USE¹

Use	Quantity (thousand metric tons)	Value (thousands)	Unit value
Construction:			
Coarse aggregate (+1 1/2 inch):			
Riprap and jetty stone	27	\$144	\$5.36
Other coarse aggregate	123	600	4.89
Total or average	150	744	4.96
Coarse aggregate, graded:			
Concrete aggregate	W	W	4.39
Bituminous aggregate coarsel	W	W	5.29
Railroad ballast	W	W	5.29
Other graded coarse aggregate	749	3,820	5.09
Total or average	1,520	7,490	4.93
Fine aggregate (-3/8 inch):			
Stone sand, concrete	W	W	4.19
Stone sand, bituminous mix or seal	W	W	4.19
Screening, undesignated	527	2,070	3.93
Other fine aggregate	23	101	4.36
Total or average	754	3,020	4.01
Coarse and fine aggregates:			
Graded road base or subbase	428	2,000	4.67
Crusher run (select material or fill)	(2)	(2)	4.19
Other coarse and fine aggregate	3,820	15,300	4.01
Total or average	4,250	17,300	4.08
Unspecified:³			
Reported	6,710	59,300	8.85
Estimated	7,060	39,200	5.55
Total or average	13,800	98,500	7.15
Grand total or average	20,500	127,000	6.21

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

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

²Withheld to avoid disclosing company proprietary data; included in "Grand total."

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

TABLE 4
NEW JERSEY: CRUSHED STONE SOLD OR USED BY PRODUCERS IN 2002,
BY USE AND DISTRICT ^{1,2,3}

(Thousand metric tons and thousand dollars)

Use	District 1 and 3	
	Quantity	Value
Construction:		
Coarse aggregate (+1 1/2 inch) ⁴	149	744
Coarse aggregate, graded ⁵	W	W
Fine aggregate (-3/8 inch) ⁶	753	3,020
Coarse and fine aggregate ⁷	W	W
Unspecified: ⁸		
Reported	6,710	59,300
Estimated	7,060	39,200
Total	20,500	127,000

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.

²No production reported for District 2.

³District 3 included in District 1 to avoid disclosing company proprietary data.

⁴Includes riprap and jetty stone and other coarse aggregates.

⁵Includes bituminous aggregate (coarse), concrete aggregate (coarse), railroad ballast, and other graded coarse aggregates.

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

⁷Includes crusher run (select material or fill), graded road base or subbase, and other coarse and fine aggregates.

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

TABLE 5
NEW JERSEY: CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN 2002,
BY MAJOR USE CATEGORY ¹

Use	Quantity (thousand metric tons)	Value (thousands)	Unit value
Concrete aggregate (including concrete sand)	3,970	\$26,500	\$6.67
Plaster and gunite sands	166	1,180	7.11
Concrete products (blocks, bricks, pipe, decorative, etc.)	309	2,370	7.66
Asphaltic concrete aggregates and other bituminous mixtures	2,050	12,200	5.94
Road base and coverings	152	929	6.11
Fill	1,860	12,000	6.45
Snow and ice control	84	402	4.79
Other miscellaneous uses ²	70	700	10.00
Unspecified: ³			
Reported	4,510	24,600	5.44
Estimated	2,900	15,000	5.39
Total or average	16,000	96,300	6.00

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

²Includes filtration.

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

TABLE 6
NEW JERSEY: CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN 2002, 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 (including concrete sand)	1,480	12,500	1,780	10,400	712	3,680
Concrete products (blocks, bricks, pipe, decorative, etc.) ²	211	2,100	W	W	W	W
Asphaltic concrete aggregates and road base materials	338	2,680	1,440	8,800	428	1,640
Fill	485	1,770	790	8,640	584	1,570
Other miscellaneous uses ³	121	864	167	835	129	851
Unspecified: ⁴						
Reported	255	1,790	1,830	9,930	2,420	12,800
Estimated	380	2,400	330	2,000	2,200	11,000
Total	3,270	24,000	6,340	40,500	6,430	31,700

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

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

²Includes plaster and gunite sands.

³Includes filtration and snow and ice control.

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