

THE MINERAL INDUSTRY OF NEW YORK

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

In 2001, the estimated value¹ of nonfuel raw mineral production for New York was \$1.05 billion, based upon preliminary U.S. Geological Survey (USGS) data. This was about a 4% increase from that of 2000² and followed a 1.6% increase from 1999 to 2000. New York was 14th in rank (13th in 2000) among the 50 States in total nonfuel mineral production value, of which the State accounted for more than 2.5% of the U.S. total.

In 2001, crushed stone, by value, remained New York's leading nonfuel mineral, followed by cement (portland and masonry), salt, construction sand and gravel, and wollastonite. Increases in the values of all five commodities, which accounted for more than 93% of the State's total nonfuel mineral production value, led to the State's overall rise in value. The State's major construction material commodities—crushed stone, cement, construction sand and gravel, and gypsum—accounted for more than 70% of the State's nonfuel mineral value. Zinc represented the large majority of New York's metal production and value.

In 2000, New York's increase in value resulted mostly from increases in crushed stone, salt, cement, and construction sand and gravel, moderated somewhat by decreases in the values of wollastonite, common clays, zinc, dimension stone, and industrial sand and gravel (descending order of change in value) (table 1). All other changes had minimal effect on the overall net result.

Based on USGS estimates of the quantities produced in the 50 States in 2001, New York remained the only State to produce wollastonite and continued to be second of 3 industrial-garnet-producing States, third in salt, and fourth in zinc and talc. The State remained 10th in rank in masonry cement and increased to 9th from 10th in the production of portland cement. Additionally, New York mining and mineral processing operations produced significant quantities of crushed stone, construction sand and gravel, dimension stone, and common

clays (descending order of value).

The following narrative information was provided by the New York State Geological Survey (NYSGS) and the Division of Mineral Resources³ (DMR) of the New York State Department of Environmental Conservation. According to the DMR, 378 mined land reclamation permits were issued statewide during 2001, of which 71 were for new mines. Mined Land staff approved final reclamation of 298 hectares (ha) at 92 mines and approved concurrent reclamation of an additional 46 ha at operating mines. The difficulty of obtaining permits for new mines has led to a decrease in the number of applications for new permits and an increase in the average size of existing mines. Permit renewals and modifications are expected to increase to approximately 450 in 2002 and more than 500 in 2003. A total of 18,861 ha is currently affected by mining, an increase of 970 ha from the previous year.

The DMR reported that lake mining for sand and gravel began on Long Island. The first freshwater dredge was up and running in Suffolk County. A mining company in the Town of Manorville purchased and installed a dredge that will pump about 380 to more than 570 cubic meters of material an hour. After the material is pumped out of the lake, the material is allowed to drain before it is processed through a screening plant. Mining plans call for the creation of a 16-ha lake with a total life of mine to include the mining of about 36 ha. Several other mining projects in Long Island will also result in the creation of large lakes. A permit was issued to a mining company in the Town of Brookhaven, Suffolk County, for a project that entails mining into the water table to create a 61-ha freshwater lake.

In November 2000, in time for the 2000-01 winter season in the northeastern United States, the new American Rock Salt Co. Inc. salt mine, the Hampton Corners Mine, went into production. The mine is located in Hampton Corners, Livingston County, and is (figuratively) the successor to Azko Nobel's Retsof Mine (rock salt), which was lost because of roof failure and flooding in 1996. The mine produced rock salt used mainly for ice and snow mitigation and is a major supplier to customers in the northeast. This mine is a few miles southeast of the southern margin of the Akzo Mine and is in the Vernon Formation "B" bed of salt, the same location that had been mined previously.

The DMR reported that there was a major washout at a sand and gravel mine in the Town of Russia, Herkimer County. The mine suffered a major washout of its haul road that resulted in 5,350 cubic meters of sand flowing over a distance of 1.3 kilometers. The water deposited material about one-half a meter deep on a country road, and some of this material eventually entered Mill Creek, a trout stream. The cause of the flood was

¹The 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 2001 USGS mineral production data published in this chapter are preliminary estimates as of August 2002 and are expected to change. For some mineral commodities, such as construction sand and gravel, crushed stone, and portland cement, 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 Mineral Industry Surveys—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 2000 may differ from the Minerals Yearbook, Area Reports: Domestic 2000, Volume II, owing to the revision of preliminary 2000 to final 2000 data. Data for 2001 are preliminary and are expected to change; related rankings may also change.

³William Kelly, Associate Scientist with the NYSGS (a bureau of the New York State Museum in the State Education Department), Division of Research and Collections, and Steven Potter, Mined Land Reclamation Specialist II with the New York State Department of Environmental Conservation, Division of Mineral Resources, coauthored the text of mineral information submitted by those agencies.

inadequate stormwater management that resulted in water being impounded behind a portion of the haul road, which then gave way. An enforcement case has been prepared.

Buffalo Crushed Stone, Inc. (BCS) received the 2001 Mined Land Reclamation Award at the New York State Fair for its efforts to voluntarily reclaim a 74-ha lake complex that had been old gravel pits in the Town of Machias, Cattaraugus County. These old mines had been exempt from New York's Mined Land Reclamation Law. BCS acquired the property in 1982 as part of a larger purchase. During the next two decades, BCS cleaned up the garbage-strewn area and developed a recreational complex for its employees, including a beach, tennis court, lodge, hiking trails, and fishing opportunities on three separate deep lakes. Additional wetlands were constructed during reprocessing of previously mined material.

The NYSGS continued bedrock and surficial geologic mapping projects in several regions of the State. Mapping priority is being given to areas where the expansion of resource development might be in proximity to urban areas or along transportation corridors, thereby motivating a need for and

understanding of those mineral resources, among other topics. Maps are being produced at a scale of 1:24,000. In 2001, digital maps were produced in seven quadrangles in the central portion of New York. NYSGS staff completed thematic mapping of bentonite beds throughout the Appalachian Basin from New York to Virginia to Ohio. This mapping project included the correlation of ashfalls in the Lower and Middle Devonian.

In 2001, the NYSGS began work on a project of identifying rock formations for potential brine disposal in the northern Appalachian Basin. Brine disposal is the last barrier to gas storage development in artificial caverns in evaporite deposits underlying New York. Cavern storage has been found to be a very efficient means of conveniently providing supplies of natural gas, especially for demand peaks that happen on a daily basis. Further, cavern storage offers economic incentives for electrical generating companies and natural gas suppliers to purchase large quantities of gas during periods of low demand for use during the winter months. The project will examine options available to the fuels industry for disposal of brine generated during development of caverns for gas storage.

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

(Thousand metric tons and thousand dollars unless otherwise specified)

Mineral	1999		2000		2001 p/	
	Quantity	Value	Quantity	Value	Quantity	Value
Cement, portland	W	W	2,700	211,000 e/	2,940 e/	230,000 e/
Clays, common	W	W	630	7,820	630	7,820
Gemstones	NA	68	NA	64	NA	64
Salt	4,220	209,000	5,440	218,000	5,510	224,000
Sand and gravel, construction	29,900	152,000	29,700	154,000	30,800	162,000
Stone:						
Crushed	46,200 r/	266,000 r/	48,800	304,000	50,200	322,000
Dimension metric tons	49,300	8,940	62,200	5,780	91,300	10,000
Combined values of cement (masonry), garnet (industrial), gypsum (crude), lead, peat, sand and gravel (industrial), silver (1999), talc (crude), wollastonite, zinc, and values indicated by symbol W	XX	358,000	XX	114,000 r/	XX	94,300
Total	XX	994,000 r/	XX	1,010,000 r/	XX	1,050,000

e/ Estimated. p/ Preliminary. r/ Revised. 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.

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

Kind	1999				2000			
	Number of quarries	Quantity (thousand metric tons)	Value (thousands)	Unit value	Number of quarries	Quantity (thousand metric tons)	Value (thousands)	Unit value
Limestone	55 r/	23,800 r/	\$138,000 r/	\$5.58	61	29,500	\$165,000	\$6.24
Dolomite	11 r/	8,480 r/	50,700 r/	5.98 r/	12	8,380	60,800	7.25
Limestone-dolomite	8 r/	4,420 r/	25,300 r/	5.72 r/	8	4,840	26,500	5.47
Granite	9	2,240 r/	13,500 r/	6.03 r/	8	4,000	20,500	5.12
Marble	1	W	W	5.76	1	W	W	3.52
Sandstone 2/	12	1,830	13,700	7.46	11	1,550	10,700	6.91
Traprock	3	W	W	5.49	3	W	W	9.30
Slate	1	W	W	5.51	1	W	W	5.66
Miscellaneous stone	3 r/	914 r/	5,010 r/	5.48 r/	4	807	4,530	5.61
Total or average	XX	46,200 r/	266,000 r/	5.75	XX	48,800	304,000	6.22

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; may not add to totals shown.

2/ Includes sandstone-quartz to avoid disclosing company proprietary data.

TABLE 3
NEW YORK: CRUSHED STONE SOLD OR USED
BY PRODUCERS IN 2000, BY USE 1/ 2/

Use	Quantity (thousand metric tons)	Value (thousands)	Unit value
Construction:			
Coarse aggregate (+1 1/2 inch):			
Macadam	175	\$1,690	\$9.65
Riprap and jetty stone	326	2,390	7.32
Filter stone	132	575	4.36
Other coarse aggregate	301	2,640	8.77
Total or average	934	7,290	7.81
Coarse aggregate, graded:			
Concrete aggregate, coarse	4,620	37,200	8.04
Bituminous aggregate, coarse	5,620	43,000	7.65
Bituminous surface-treatment aggregate	514	3,930	7.65
Railroad ballast	11	46	4.18
Other graded coarse aggregate	3,070	25,400	8.27
Total or average	13,800	109,000	7.92
Fine aggregate (-3/8 inch):			
Stone sand, concrete	1,100	9,050	8.22
Stone sand, bituminous mix or seal	437	2,650	6.06
Screening, undesignated	208	1,150	5.54
Other fine aggregate	1,290	9,570	7.39
Total or average	3,040	22,400	7.38
Coarse and fine aggregates:			
Graded road base or subbase	4,170	26,500	6.37
Unpaved road surfacing	W	W	5.93
Crusher run or fill or waste	2,820	12,300	4.37
Roofing granules	W	W	5.75
Other coarse and fine aggregates	3,140	17,900	5.71
Total or average	10,100	56,800	5.61
Other construction materials 3/	471	3,230	6.85
Agricultural, agricultural limestone	(4/)	(4/)	9.05
Chemical and metallurgical, cement manufacture	(4/)	(4/)	3.54
Special, asphalt fillers or extenders	(5/)	(5/)	(5/)
Unspecified: 6/			
Reported	8,520	47,100	5.53
Estimated	7,200	40,000	5.53
Total or average	15,800	87,200	5.53
Grand total or average	48,800	304,000	6.22

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

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

2/ Includes dolomite, granite, limestone, limestone-dolomite, marble, miscellaneous stone, sandstone, sandstone-quartz, slate, and traprock.

3/ Includes drain fields.

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

5/ Less than 1/2 unit.

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

TABLE 4
NEW YORK: CRUSHED STONE SOLD OR USED BY PRODUCERS IN 2000, BY USE AND DISTRICT 1/ 2/

(Thousand metric tons and thousand dollars)

Use	District 2		District 3		District 4		District 5	
	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
Construction:								
Coarse aggregate (+1 1/2 inch) 3/	298	2,680	343	2,680	W	W	W	W
Coarse aggregate, graded 4/	8,130	72,300	1,730	13,600	W	W	W	W
Fine aggregate (-3/8 inch) 5/	1,610	13,300	480	3,410	W	W	W	W
Coarse and fine aggregate 6/	1,900	13,700	W	W	1,270	5,100	1,050	4,100
Other construction materials 7/	--	--	--	--	--	--	(8/)	(8/)
Agricultural 9/	--	--	W	W	W	W	W	W
Chemical and metallurgical 10/	--	--	W	W	W	W	--	--
Special 11/	--	--	--	--	--	--	--	--
Unspecified: 12/								
Reported	--	--	1,030	5,680	--	--	2,170	11,900
Estimated	2,600	14,000	350	2,000	1,100	6,500	600	2,900
Total	14,500	116,000	8,620	46,500	3,650	16,200	4,950	24,900
Use	District 6		District 7		District 8			
	Quantity	Value	Quantity	Value	Quantity	Value		
Construction:								
Coarse aggregate (+1 1/2 inch) 3/	W	W	W	W	W	W		
Coarse aggregate, graded 4/	414	2,240	W	W	W	W		
Fine aggregate (-3/8 inch) 5/	114	832	W	W	W	W		
Coarse and fine aggregate 6/	W	W	W	W	W	W		
Other construction materials 7/	6	25	--	--	465	3,200		
Agricultural 9/	W	W	W	W	W	W		
Chemical and metallurgical 10/	--	--	--	--	--	--		
Special 11/	--	--	(8/)	(8/)	--	--		
Unspecified: 12/								
Reported	2,330	12,800	3,000	16,700	(8/)	(8/)		
Estimated	1,600	8,700	880	4,900	130	710		
Total	4,860	26,600	8,090	46,100	4,100	27,000		

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

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

2/ No production reported in District 1.

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

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

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

6/ Includes crusher run (select material or fill), graded road base or subbase, roofing granules, unpaved road surfacing, and other coarse and other fine aggregates.

7/ Includes drain fields.

8/ Less than 1/2 unit.

9/ Includes agricultural limestone.

10/ Includes cement manufacture.

11/ Includes asphalt fillers or extenders.

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

TABLE 5
NEW YORK: CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN 2000,
BY MAJOR USE CATEGORY 1/

Use	Quantity (thousand metric tons)	Value (thousands)	Unit value
Concrete aggregate (including concrete sand)	6,670	\$41,300	\$6.19
Plaster and gunite sands	257	1,450	5.63
Concrete products (blocks, bricks, pipe, decorative, etc.)	299	2,310	7.74
Asphaltic concrete aggregates and other bituminous mixtures	2,370	12,800	5.39
Road base and coverings 2/	4,180	18,400	4.39
Road stabilization (lime)	5	14	2.80
Fill	2,740	9,110	3.32
Snow and ice control	895	3,240	3.62
Other miscellaneous uses 3/	523	3,310	6.32
Unspecified: 4/			
Reported	4,330	25,000	5.76
Estimated	7,500	37,000	4.97
Total or average	29,700	154,000	5.18

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

2/ Includes road and other stabilization (cement).

3/ Includes railroad ballast and roofing granules.

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

TABLE 6
NEW YORK: CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN 2000,
BY USE AND DISTRICT 1/

(Thousand metric tons and thousand dollars)

Use	District 1		District 2		District 3		District 4	
	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
Concrete aggregate and concrete products 2/	2,440	15,700	661	5,050	822	4,170	258	1,200
Asphaltic concrete aggregates and other bituminous mixtures	W	W	179	1,190	364	1,810	W	W
Roadbase and coverings 3/	63	481	239	1,630	948	4,200	542	1,800
Fill	215	696	65	281	751	2,580	391	953
Snow and ice control	W	W	24	172	248	956	121	454
Other miscellaneous uses 4/	162	1,590	42	120	113	591	173	593
Unspecified: 5/								
Reported	208	2,730	395	3,710	66	353	32	369
Estimated	340	1,800	1,100	6,200	1,100	5,300	1,400	6,600
Total	3,420	23,000	2,690	18,300	4,440	20,000	2,870	11,900
Use	District 5		District 6		District 7		District 8	
	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
Concrete aggregate and concrete products 2/	191	895	1,240	7,860	518	2,830	1,110	7,370
Asphaltic concrete aggregates and other bituminous mixtures	W	W	839	5,230	291	1,710	W	W
Roadbase and coverings 3/	234	916	694	3,010	930	3,590	538	2,760
Fill	189	870	490	1,890	401	1,170	240	666
Snow and ice control	70	201	248	843	113	419	W	W
Other miscellaneous uses 4/	109	535	168	834	48	281	479	1,830
Unspecified: 5/								
Reported	632	3,400	273	1,100	409	2,680	2,320	10,600
Estimated	640	3,100	990	4,700	1,300	6,300	630	3,200
Total	2,070	9,870	4,940	25,400	4,000	18,900	5,310	26,400

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

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 railroad ballast and roofing granules.

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