SAND AND GRAVEL, CONSTRUCTION

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Construction sand and gravel, one of the most accessible natural resources and a major basic raw material, is used mostly by the construction industry. Despite the low unit value of its basic products, the construction sand and gravel industry is a major contributor to and an indicator of the economic well-being of the Nation.

A total of 1.08 billion metric tons of construction sand and gravel was produced in the United States in 1998; this was a 13.1% increase compared with that of 1997 (table 1). Some of the increase in the reported total was attributable to improved data collection. At least 557 more operations were included in this report than in that of 1997. However, data from the previous years could not be revised because historic data was not available. After a decrease in production in 1991, sand and gravel production increased for the following 7 years, an indication of the continuous strong demand for construction aggregates in the United States.

Sand and gravel production increased during 1998 owing to continued growth in construction activity. Total construction activity advanced by 5% to $375.3 billion. This followed a 5% increase in 1997 and represented the seventh straight year of moderate increases for the construction industry. Residential building construction during 1998 was up, whereas nonbuilding and nonresidential construction were down slightly. The closing months of 1998 saw a slightly slower rate of construction activity than earlier in 1998 (Pit and Quarry, 1999). The construction industry was by far the largest consumer of sand and gravel.

In January 1999, the U.S. Geological Survey (USGS) mailed 6,878 construction sand and gravel surveys to operations throughout the United States; although 211 operations were not mailed survey forms, they provided information to the USGS. In 1998, 5,845 operations were active, 1,097 operations were idle, and 228 operations were either reported or assumed to be permanently shut down. A small number of the idle sand and gravel operations reported the recycling of asphalt and portland cement concrete, but no sand and gravel mining. In 1998, of the 5,845 active operations surveyed, 4,861, or 83.2%, responded to the USGS. These operations contributed 74% of the 1.08 billion tons produced in 1998. The 5,845 operations were run by 3,874 companies with 7,866 active sand and gravel pits (tables 9 and 10).

Foreign trade of construction sand and gravel remained minor in 1998. Exports increased by more than 34% to 2.3 million tons, and the value increased by 69% to $37.8 million, when compared with the 1997 results.

Imports decreased about 30% to 1.12 million tons, and the value decreased by more than 17% to $15 million. Because imports and exports were small, domestic apparent consumption of construction sand and gravel, defined as production for consumption (sold or used) plus total imports minus total exports, was essentially equal to the U.S. production of 1.08 billion tons.

Legislation

The Transportation Equity Act for the 21st Century was passed in 1998. The Act authorizes $217.3 billion for highway and transit within 6 years, including $175 billion in guaranteed spending. The Act also authorizes funding increases averaging 44% in Federal highway funding for fiscal years 1998 through 2003. Federal funding for highway programs will rise from about $18 billion in 1998 to more than $26 billion averaged annually through 2003 (Rock Products, 1998k).

During 1998, the aggregates industry continued to work with the Mine Safety and Health Administration (MSHA) as the agency developed new rules on training requirements for miners of gravel, sand, surface stone, and other mineral materials. The U.S. Congress directed MSHA to come up with new training rules by September 1999 (Rock Products, 1999b).

MSHA officials were finalizing new requirements for mine operators to limit miners' exposure to noise. The rule was expected to have significant economic impacts, particularly in the aggregates industry. The agency estimated that the cost of the rule to industry will be $5.56 million but cautioned that the estimate was preliminary because the rule was not yet in final form (Rock Products, 1999c). A National Institute for Occupational Safety and Health study concluded that hearing loss in male miners is significantly greater than that in the average population. The study has become part of the record established by MSHA and will be used to support MSHA's efforts to toughen noise-exposure limits in mines (Rock Products, 1998e).

The Occupational Health and Safety Administration's tightened standard for use of respirators in the workplace affected all industries except agriculture. The new standard, which went into effect on April 8, 1998, requires employers to maintain a written plan for respirator use and to undertake a hazard evaluation to characterize respiratory hazards (Rock Products, 1998g).

The U.S. Environmental Protection Agency (EPA) proposed lightening the regulatory burden on sand and gravel users. Under the Emergency Planning and Community Right-to-Know Act, facilities handling 4,500 kilograms of sand and gravel must provide State and local emergency response personnel with reports on the amount and location of materials in the interest of preparedness for an accident. According to EPA officials, sand and gravel, along with rock salt, "have minimal inherent hazards and generally would not have the potential to present significant risks to the community or to the emergency responders on site" (Rock Products, 1998h).

Production

Of the four major geographic regions, the West again led the Nation in the production of construction sand and gravel with 418 million tons, or 38% of the U.S. total (table 2). It was followed by the Midwest with 320 million tons, 30%; the South with 227 million tons, 21%; and the Northeast with 111 million tons, 10%. Production increased in all the major geographic regions compared with that of 1997.

Of the nine geographic divisions, the Pacific led the Nation in the production of construction sand and gravel with 213 million tons, or 19.7% of the U.S. total and was followed by the East North Central with 212 million tons, or 19.6%, and the Mountain with 205 million tons, or 19.0% (table 2 and figure 1). Production increased in every division compared with that of 1997—Mountain, 25.0%; West South Central, 19.8%; Pacific, 13.9%; Middle Atlantic, 12.6%; New England, 8.9%; South Atlantic, 7.6%; East North Central, 7.1%; West North Central, 6.9%; and East South Central, 4.4%.

A review of the production by size of operation indicates that 37.0% of the construction sand and gravel produced in 1998 came from 1,890 operations reporting between 100,000 and 499,999 tons per year, 23.8% came from 413 operations reporting between 500,000 and 999,999 tons per year, and 28.9% came from 200 operations reporting more than 1 million metric tons per year (table 8). At least 4.3% (228) of the operations active in 1997 were shut down during 1998.

The estimated production by quarter for 1998 indicates that most of the construction sand and gravel in the United States was produced in the third quarter, followed by the second and the fourth quarters (table 3). Estimated production by each quarter was also available for most States (table 5).

In 1998, construction sand and gravel was produced in every State (table 4). The leading States were, in descending order of tonnage, California, Texas, Michigan, Ohio, Arizona, Utah, Washington, Colorado, Minnesota, and Wisconsin. Their combined production represented 54% of the national total. Production increased in 40 States, decreased in 5, and stayed about the same in 5 compared with that of 1997; production increased in the top 10.

Limited information about the production of construction sand and gravel in foreign countries may be found in the USGS's Minerals Yearbook, Volume III, Area Reports: International. For nonreporting countries, estimates of sand and gravel and crushed stone outputs can be based on indirect indicators, such as the level of cement consumption.

Acquisitions and Consolidations

In an industry with thousands of operating companies, status and ownership changes are many. Although reviewing them all is not possible, a few noteworthy events follow.

In November, Vulcan Materials Co. agreed to acquire CalMat Co. The $890 million acquisition gave Vulcan access to more than 2 billion tons of aggregate reserves in Arizona, California, and New Mexico (Rock Products, 1998k). Triangle Rock Products, Inc., a subsidiary of CalMat, purchased Los Banos Gravel Co., Los Banos, CA, about 60 miles northwest of Fresno. Calmat acquired about 40 million tons of fully permitted aggregate reserves (Rock Products, 1998b).

Martin Marietta Materials expanded its presence in Ohio and Kentucky by buying two sand and gravel operations—one between Dayton and Cincinnati and the other near Petersburg, KY, about 20 miles west of Cincinnati (Rock Products, 1998d).

On November 4, Martin Marietta announced that it had purchased an initial 14% interest in the business of Englewood, CO-based Meridian Aggregates Co. Meridian produced sand and gravel in Arkansas, Louisiana, and Oklahoma and was among the top 100 sand and gravel producers in the United States in 1998. The arrangement between Martin Marietta and Meridian will allow Martin Marietta to purchase the entire company within a 5-year period (Aggregates Manager, 1999).

In October, Hanson Plc, through its Cornerstone Construction and Materials, Inc., division, purchased Alfred McAlpine, Inc., from Alfred McAlpine Plc. Alfred McAlpine, Inc., was among the top 50 producers of sand and gravel in the United States in 1998 and had operations in North Carolina and South Carolina (Aggregates Manager, 1998a).

CSR America, Inc., acquired Standard Sand and Silica Company's construction sand operations in Orlando, FL. The purchase gave CSR access to more than 110 million tons of proven natural sand reserves at sites near Orlando. CSR said its reserves in the area were nearly depleted (Rock Products, 1999a).

U.S. Aggregates, Inc., completed its $57.6 million acquisition of Monroc, Inc. Monroc aggregate reserves total more than 300 million tons (Rock Products, 1998j). Monroc, with operations in Montana, Utah, and Wyoming, was estimated to be the 19th largest sand and gravel producer in the United States in 1998.

Cornerstone Construction and Materials agreed to purchase the assets of H.G. Fenton Materials Co., San Diego, CA. Fenton was the largest supplier of aggregates and second largest ready-mixed concrete producer in San Diego County (Rock Products, 1998c).

CRH plc's Oldcastle Materials Group purchased the assets of M.A. Segale, Inc., Tukwila, WA. Segale was an integrated aggregates, asphalt, construction, and paving company serving the southern Seattle market. The acquisition provided Oldcastle with access to more than 50 million tons of permitted aggregate reserves (Rock Products, 1998e).

Liter's Quarry, Inc., purchased Daviess County Sand and Gravel Co., near Owensboro, KY. The purchase included four stone quarries, a sand and gravel operation, three aggregate distribution terminals, and a barge-towing company on the Kentucky River (Aggregates Manager, 1998b).

Consumption

Construction sand and gravel reported by producers to the USGS was actually material that was "sold or used" by the companies and was defined as such. Stockpiled production is not reported until it is sold or consumed by the producer. Because no consumption surveys are conducted by the USGS for sand and gravel, the "sold or used" tonnage is assumed to represent the amount produced for domestic consumption and export. Because some of the construction sand and gravel producers did not report a breakdown by end use, their total production was reported under "Unspecified uses, actual." The estimated production of nonrespondents was reported under

"Unspecified uses, estimated."

Of the 1.08 billion tons of construction sand and gravel produced in 1998, 547 million tons, or 50.6% of the total, was for unspecified uses (table 6). Of the remaining 533 million tons, 41.6% was used as concrete aggregates; 25.1%, for road base and coverings and road stabilization; 13.2%, for asphaltic concrete aggregates and other bituminous mixtures; 12.4%, as construction fill; 1.7%, for plaster and gunite sands; 1.7%, for concrete products, such as blocks, bricks, pipes, etc.; and the remainder, for filtration, railroad ballast, roofing granules, snow and ice control, and other miscellaneous uses.

To provide a more-accurate estimation of the consumption patterns for construction sand and gravel, the "unspecified uses" are not included in the above percentages. In any marketing or use pattern analysis, the quantities included in "unspecified uses" should be distributed among the reported uses by applying the above percentages.

A review of consumption by geographic regions and divisions, excluding the "other uses" category in table 6, indicates that more than 61% of the sand and gravel consumed in the South Region was for concrete aggregate. In all other regions, less than 45% of the sand and gravel was consumed by this market.

The plaster and gunite market consumed nearly 3% of the sand and gravel from the South Atlantic Division, about 2.5% in the West Region, and much less than 2% in all the remaining divisions.

The production of concrete products consumed between 0.5% and 3.3% of the sand and gravel throughout the country. In the Northeast Region, 2.5% was consumed for concrete products; in the Midwest, 2.0%; in the South, 1.8%, and in the West, 1.2%.

About 15% was consumed for asphalt concrete in all regions except in the South where just under 8% was consumed for asphalt concrete. At the division level, consumption for asphalt concrete ranged from 4.3% in the South Atlantic Division to 18.4% in the East South Central Division.

Between 25% and 40% of the sand and gravel consumed in the East North Central, the Mountain, the New England, the Pacific, and the West North Central Divisions was for road base and coverings. In the Mid-Atlantic and the East South Central Divisions, about 17% of the sand and gravel was consumed for road base and covering, and in the South Atlantic and the West South Central Divisions, less than 10% was used.

Between 16% and 20% of sand and gravel was used for fill in the East North Central, the New England, the South Atlantic, and the West South Central Divisions (table 7). About 10% of the sand and gravel in the Mid-Atlantic, the Mountain, the Pacific, and the West North Central Divisions was used for fill. In the East South Central division, less than 5% of the sand and gravel was consumed for fill.

Additional information regarding production and/or consumption of construction sand and gravel by major uses in each State and the State districts may be found in the USGS's Minerals Yearbook, Volume II, Area Reports: Domestic.

Recycling

The aggregates industry has been involved with recycling for several decades. Recently, recycling has become more important to aggregate producers, and the number of aggregate companies that are recycling has been increasing. Recycling in this industry generally refers to the crushing, screening, and reuse of cement and asphalt concretes. Aggregate and related asphalt and ready-mix companies are often involved at construction projects where they collect and reuse the materials at the site. Others collect materials from construction companies that haul the materials to the recycler. The annual survey of construction sand and gravel producers collects information on recycling of cement and asphalt concrete by sand and gravel companies. No information on recycling of these materials by the construction or demolition companies is collected by the USGS.

Asphalt Concrete.—A total of 4.36 million tons of asphalt concrete valued at $15.5 million was recycled by 170 sand and gravel companies in 39 States; this volume represented a 26.8% increase compared with that of 1997 (tables 14 and 15). Leading States were, in descending order of tonnage recycled, Minnesota, California, Michigan, Wisconsin, and Arizona. Leading companies were, in order of volume produced, Weber Sand and Gravel, Inc., Premier Aggregates, Inc., Aman Brothers, Inc., CalMat Co., and Memphis Stone and Gravel Co.

Cement Concrete.—A total of 4.45 million tons of cement concrete valued at $18.2 million was recycled by 144 companies in 34 States; this volume represented a 7.3% increase compared with that of 1997 (tables 14 and 16). Leading States were, in descending order of tonnage recycled, California, Minnesota, New York, Wisconsin, and Arizona. Leading companies were, in order of volume produced, Premier Aggregates, Aman Brothers, Bardon, Inc., Danners, Inc., and RMC Lonestar, Inc.

Transportation

Information regarding the method of transportation of construction sand and gravel from the pit or processing plant to the first point of sale or use is available for each geographic region, as well as for the total United States in table 11. Reports regarding the method of transportation were provided by the producers for 480 million tons, or 44% of the total U.S. production of construction sand and gravel. Of this total, 85.4% was transported by truck; 3.6%, by waterway; and 1.5%, by rail. A significant amount of construction sand and gravel produced (about 5.9%) was not transported, but was used at the production site. Because most producers did not either keep records or report shipping distances or cost per metric ton per mile, no transportation cost data were available.

Prices

Prices in this chapter are f.o.b. plant, usually at the first point of sale or captive use. This value does not include transportation from the plant or yard to the consumer. It does, however, include all costs of mining, processing, in-plant transportation, overhead costs, and profit.

The 1998 average unit price increased by about 2% to $4.57 per metric ton, compared with that of 1997 (table 6). By use, the unit prices varied from a high of $8.91 for roofing granules to a low of $2.82 for fill. The largest increases were recorded for railroad ballast (40%), and road stabilization (cement)

(18%). The largest average unit price declines were for filtration (8%), and snow and ice control (4%).

Foreign Trade

The widespread distribution of domestic sand and gravel deposits and the high cost of transportation limits foreign trade to mostly local transactions across international boundaries. U.S. imports and exports were small, representing less than 1% of the domestic consumption.

Exports of construction sand increased by about 30% to 1.86 million tons compared with that of 1997, and the value increased by 77% to $30.3 million (table 12). Mexico was the major destination, receiving about 67% of the total, and was followed by Canada with 18%. Exports of construction gravel increased by 55% to 482,000 tons, and the value increased by 43% to $7.48 million. Canada was the major destination, receiving about 80% of the total.

Imports decreased by about 30% to 1.12 million tons, and the value decreased by about 17% to $15.0 million (table 13). Canada was the major source of imported construction sand and gravel with 70% of the total, and was followed by The Bahamas with about 14%.

Outlook

The average annual growth rate for construction spending in the United States was forecast to be 1.7% for 1999 through 2003 (McGraw-Hill, December 1999, Global construction study by Standard and Poor's DRI and F.W. Dodge offers guide for companies seeking promising markets worldwide, accessed December 16, 1999, at URL http://www.construction.com/newmark. asp).

After a 2% increase for total construction spending, an overall decrease of 2.5% is expected for 1999. Most of the decline will come in the residential construction market. Highway and street spending, however, is expected to increase by about 20% in 1999. In 2000 and beyond, new record levels of construction activity are expected (Rock Products, 1998b).

The demand for construction sand and gravel in 1999 is expected to be about 1.08 billion tons. After double-digit increases in 1998, a correction is expected for 1999, and production should increase only slightly in 1999. Some regions should see substantial increases but most will likely be flat or have small decreases in production and sales.

Construction sand and gravel f.o.b. prices are expected to increase only marginally. The delivered prices of construction sand and gravel are, however, expected to increase especially in and near metropolitan areas mainly because more aggregates are transported from distant sources.

For 1999, the industry is expected to continue to consolidate. Resistance to mining at the local level will push production to more-rural areas and increase transportation cost. Acquisition cost will escalate because of the difficulty of starting a greenfield operation, which will allow resourceholders to demand higher prices for already permitted operations.

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TABLE 1
SALIENT U.S. CONSTRUCTION SAND AND GRAVEL STATISTICS 1/

		1994	1995	1996	1997	1998
Sold or used by producers:						
Quantity 2/	thousand metric tons	891,000	906,700	914,000 3/	952,000	1,080,000
Value 2/	thousands	$3,740,000	$3,900,000	$4,000,000 3/	$4,260,000	$4,920,000
Exports, value	do.	$20,300	$24,700	$23,300	$22,300	$37,800
Imports, value	do.	$14,800	$12,000	$15,800	$18,100	$15,000

1/ Data are rounded to three significant digits.
2/ Puerto Rico excluded from all sand and gravel statistics.
3/ Excludes Hawaii.

TABLE 2
CONSTRUCTION SAND AND GRAVEL SOLD OR USED BY
PRODUCERS IN THE UNITED STATES, BY GEOGRAPHIC DIVISION 1/

	1997				1998			
Region/Division	Quantity (thousand metric tons)	Percentage of total	Value (thousands)	Percentage of total	Quantity (thousand metric tons)	Percentage of total	Value (thousands)	Percentage of total
Northeast:								
New England	39,500	4.1	$193,000	4.5	43,000	4.0	$213,000	4.3
Middle Atlantic	60,300	6.3	318,000	7.5	67,900	6.3	368,000	7.5
Midwest:								
East North Central	198,000	20.7	791,000	18.5	212,000	19.7	866,000	17.6
West North Central	101,000	11.0	353,000	8.4	108,000	10.0	396,000	8.1
South:								
South Atlantic	69,700	7.3	330,000	7.7	75,100	7.0	343,000	7.0
East South Central	43,300	4.5	185,000	4.3	45,200	4.2	206,000	4.2
West South Central	89,300	9.3	408,000	9.6	107,000	9.9	500,000	10.1
West:								
Mountain	164,000	17.1	672,000	15.7	205,000	19.0	837,000	17.0
Pacific	187,000	19.6	1,010,000	23.7	213,000	19.9	1,190,000	24.2
Total	952,000	100.0	4,260,000	100.0	1,080,000	100.0	4,920,000	100.0

TABLE 3
SAND AND GRAVEL SOLD OR USED BY PRODUCERS IN THE UNITED STATES IN 1998, BY QUARTER AND DIVISION 1/

Region/Division	Quantity 1st quarter (thousand metric tons)	Percent-age change 3/	Quantity 2d quarter (thousand metric tons)	Percent-age change 3/	Quantity 3d quarter (thousand metric tons)	Percent-age change 3/	Quantity 4th quarter (thousand metric tons)	Percent-age change 3/	Total 2/ (thousand metric tons)	Value total 2/ (thousands)
Northeast:										
New England	5,500	9.7	11,200	19.2	14,300	2.9	11,300	0.7	42,300	$206,000
Middle Atlantic	9,200	28.9	19,600	8.5	22,900	14.0	14,800	-1.5	66,500	352,000
Midwest:										
East North Central	23,200	5.2	57,400	3.6	67,400	-1.0	54,300	3.9	202,000	810,000
West North Central	8,500	-16.9	29,500	-1.4	35,500	-4.6	23,600	-0.7	97,100	341,000
South:										
South Atlantic	15,900	2.2	20,000	3.8	19,600	4.0	18,400	13.5	73,900	349,000
East South Central	8,700	20.8	13,900	20.0	12,600	-4.6	11,400	1.7	46,600	200,000
West South Central	21,000	18.3	27,800	16.5	26,200	4.0	23,100	2.3	98,100	448,000
West:										
Mountain	34,300	5.4	53,700	31.2	53,300	11.6	46,100	7.7	187,000	767,000
Pacific 4/	32,300	-5.2	47,100	4.3	60,900	21.5	54,600	20.8	195,000	1,060,000
Total 2/	159,000	4.6	280,000	10.5	313,000	6.2	258,000	7.2	1,020,000 5/	4,540,000 5/

1/As published in the Crushed Stone and Sand and Gravel in the Fourth Quarter of 1998 Mineral Industry Surveys.
2/Data may not add to totals shown because of independent rounding and differences between projected totals by States and regions.
3/All percentage changes are calculated by using unrounded totals; percentage changes are based on the previous year's corresponding quarter.
4/ Does not include Alaska and Hawaii.
5/ Includes Alaska and Hawaii.

TABLE 4
CONSTRUCTION SAND AND GRAVEL SOLD OR USED BY
PRODUCERS IN THE UNITED STATES, BY STATE 1/

State	1997			1998		
	Quantity (thousand metric tons)	Value (thousands)	Unit value	Quantity (thousand metric tons)	Value (thousands)	Unit value
Alabama	13,400	$58,800	$4.38	14,400	$64,100	$4.45
Alaska 2/	12,500	57,400	4.60	13,700	72,700	5.29
Arizona	39,500	187,000	4.74	47,900	229,000	4.78
Arkansas	10,600	48,100	4.54	12,100	55,400	4.58
California	115,000	668,000	5.83	135,000	801,000	5.93
Colorado	32,100	142,000	4.43	42,900	195,000	4.54
Connecticut	5,410	24,800	4.57	6,380	29,200	4.58
Delaware	2,540	12,400	4.87	2,560	11,500	4.50
Florida	19,200	75,500	3.93	20,900	84,600	4.04
Georgia	6,410	24,600	3.85	7,130	29,500	4.14
Hawaii	378	4,210	11.15	368	4,590	12.48
Idaho	14,800	42,700	2.88	16,600	52,400	3.16
Illinois	33,400	143,000	4.28	34,100	150,000	4.40
Indiana	21,900	93,100	4.24	24,000	101,000	4.22
Iowa	12,600	51,300	4.08	13,500	58,500	4.33
Kansas	11,200	31,600	2.82	10,800	31,400	2.91
Kentucky	8,140	26,600	3.27	8,100	27,500	3.39
Louisiana	10,400	46,600	4.50	11,400	53,800	4.72
Maine	6,280	28,400	4.53	7,640	33,400	4.37
Maryland	10,100	65,400	6.50	10,400	60,500	5.83
Massachusetts	13,500	71,500	5.31	14,000	78,000	5.56
Michigan	62,000	223,000	3.60	66,900	245,000	3.66
Minnesota	34,500	127,000	3.67	39,400	154,000	3.91
Mississippi	13,000	59,600	4.57	13,300	64,400	4.83
Missouri	9,530	35,600	3.73	9,470	39,300	4.15
Montana	8,390	30,800	3.67	8,550	34,900	4.08
Nebraska	13,700	46,700	3.42	13,800	47,000	3.40
Nevada	23,600	110,000	4.68	26,400	114,000	4.32
New Hampshire	8,440	36,400	4.31	8,590	40,000	4.66
New Jersey	16,100	85,300	5.31	16,600	90,800	5.48
New Mexico	9,390	46,600	4.97	11,100	53,300	4.78
New York	28,500	144,000	5.06	32,100	161,000	5.03
North Carolina	11,100	61,200	5.54	10,900	58,000	5.31
North Dakota	9,360	26,800	2.86	10,700	30,400	2.84
Ohio	47,000	222,000	4.73	52,600	255,000	4.84
Oklahoma	8,250	29,000	3.51	9,000	35,900	3.99
Oregon	19,100	100,000	5.26	18,600	99,200	5.34
Pennsylvania	15,700	88,500	5.63	19,200	116,000	6.06
Rhode Island	1,960	15,700	7.99	1,390	11,100	7.99
South Carolina	8,130	30,400	3.74	9,690	35,900	3.70
South Dakota	10,200	34,100	3.36	10,100	35,600	3.51
Tennessee	8,650	39,500	4.56	9,410	49,800	5.29
Texas	60,100	284,000	4.72	74,600	354,000	4.75
Utah	33,200	99,400	2.99	46,300	140,000	3.03
Vermont	3,890	15,800	4.07	4,940	21,200	4.29
Virginia	10,700	52,700	4.94	11,900	54,800	4.63
Washington	40,500	180,000	4.45	45,700	214,000	4.68
West Virginia	1,670	8,010	4.78	1,650	8,050	4.89
Wisconsin	33,500	110,000	3.28	34,700	116,000	3.33
Wyoming	3,090	12,300	3.99	4,770	18,100	3.80
Total	952,000	4,260,000	4.47	1,080,000	4,920,000	4.57

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ Data derived in part from Alaska Division of Geological and Geophysical Surveys information.

TABLE 5
SAND AND GRAVEL SOLD OR USED BY PRODUCERS IN THE UNITED STATES, BY QUARTER AND STATE 1/

State	Quantity 1st quarter (thousand metric tons)	Percent-age change 3/	Quantity 2d quarter (thousand metric tons)	Percent-age change 3/	Quantity 3d quarter (thousand metric tons)	Percent-age change 3/	Quantity 4th quarter (thousand metric tons)	Percent-age change 3/	Total 2/ (thousand metric tons)	Value total 2/ (thousands)
Alabama	3,100	30.6	3,800	6.3	3,800	-2.8	3,400	-3.1	14,100	$61,900
Alaska 4/	--	--	--	--	--	--	--	--	12,500	57,400
Arizona	10,100	15.1	12,900	28.7	11,900	12.5	12,000	17.6	46,800	222,000
Arkansas	2,300	12.9	3,200	9.8	3,100	-0.8	2,600	3.3	11,200	50,800
California	20,700	-8.6	30,200	4.4	40,900	25.0	39,800	30.0	132,000	767,000
Colorado	6,200	7.8	10,500	25.5	11,500	16.2	9,300	15.5	37,500	166,000
Connecticut	1,000	59.9	1,700	30.6	1,900	6.4	1,600	-2.7	6,260	28,700
Delaware 5/	--	--	--	--	--	--	--	--	2,320	11,300
Florida	4,700	4.7	5,400	8.6	5,000	-2.1	5,200	12.2	20,300	79,800
Georgia	1,300	-2.7	1,900	-0.3	2,300	28.2	1,900	36.1	7,380	28,300
Hawaii 4/	--	--	--	--	--	--	--	--	378	4,210
Idaho	2,400	-22.9	4,300	0.5	5,800	27.3	3,900	32.7	16,300	47,000
Illinois	4,000	13.2	10,200	-1.3	11,200	-0.1	9,400	13.4	34,800	149,000
Indiana	4,600	31.8	6,800	2.4	6,700	1.3	5,700	10.2	23,800	101,000
Iowa	1,000	8.0	3,900	2.0	5,000	3.5	3,700	20.7	13,600	55,400
Kansas	1,800	-1.0	2,700	-19.9	2,900	-12.4	2,100	-23.9	9,450	26,700
Kentucky	1,400	6.8	2,000	-10.4	2,400	-2.5	1,800	-14.9	7,630	24,900
Louisiana	2,400	29.4	3,400	26.4	2,900	9.2	2,700	-14.8	11,400	51,100
Maine	300	3.6	1,600	14.3	2,900	13.3	2,000	-2.3	6,790	30,700
Maryland	2,700	33.4	2,900	1.4	3,400	17.6	2,700	15.7	11,700	75,800
Massachusetts	2,200	-13.3	3,800	24.4	3,800	-1.5	4,000	-0.6	13,800	73,100
Michigan	5,700	-3.7	17,900	8.3	22,100	-5.9	15,300	-5.0	61,000	219,000
Minnesota	1,100	-29.6	11,400	1.5	13,100	-6.6	8,000	3.9	33,600	124,000
Mississippi	2,500	15.2	4,500	33.7	4,300	10.1	4,000	13.8	15,400	70,600
Missouri	1,100	-30.4	2,100	-13.6	3,000	-1.6	2,400	0.8	8,670	32,400
Montana 5/	--	--	--	--	--	--	--	--	7,630	28,000
Nebraska	1,200	-26.0	5,100	31.1	4,800	-5.0	3,000	-5.4	14,100	48,100
Nevada	5,100	-21.1	6,600	32.3	6,800	15.2	5,300	-15.9	23,700	110,000
New Hampshire	1,300	1.1	2,300	11.5	3,200	0.5	1,900	-3.7	8,630	37,200
New Jersey	4,000	64.0	4,300	-9.4	4,500	7.9	4,000	-16.7	16,700	88,500
New Mexico	2,300	19.4	3,200	20.7	2,900	4.7	2,000	-3.6	10,400	51,600
New York	3,000	-9.2	10,000	18.0	12,100	15.4	5,900	-5.6	31,000	157,000
North Carolina	2,400	-10.2	2,900	-2.5	2,700	-5.8	2,600	-0.8	10,600	58,400
North Dakota 4/	--	--	--	--	--	--	--	--	9,360	26,800
Ohio	5,600	-6.2	12,800	11.8	17,200	7.4	13,800	1.0	49,300	233,000
Oklahoma	1,800	15.8	2,500	7.0	2,500	4.4	2,100	9.0	8,940	31,400
Oregon	2,700	-26.6	4,300	-28.4	5,900	13.5	3,500	-17.7	16,400	85,900
Pennsylvania	2,100	37.4	5,300	11.7	6,400	15.8	4,500	17.0	18,400	104,000
Rhode Island 5/	--	--	--	--	--	--	--	--	2,020	16,200
South Carolina	1,800	1.7	2,500	11.4	2,400	9.2	2,400	24.6	9,090	34,000
South Dakota	1,000	3.0	2,400	-7.0	4,200	-2.8	2,100	-10.8	9,670	32,300
Tennessee	1,500	19.0	3,300	39.6	2,100	-28.6	2,000	-1.1	8,950	40,900
Texas	14,900	17.0	18,600	17.5	17,600	4.1	15,900	8.8	67,000	317,000
Utah	3,200	2.3	12,400	63.7	12,100	1.7	9,400	-11.8	37,000	111,000
Vermont	300	55.2	1,100	25.9	1,500	-4.5	1,600	29.4	4,530	18,400
Virginia	2,300	-7.8	3,100	-2.5	2,900	7.4	2,600	12.2	10,900	53,700
Washington	9,000	17.7	12,800	17.5	13,500	10.3	8,800	-9.7	44,100	196,000
West Virginia	200	-9.1	500	1.8	600	-8.0	400	8.2	1,640	7,870
Wisconsin	2,500	-6.6	9,600	-9.6	10,100	-8.5	10,200	10.9	32,400	106,000
Wyoming 5/	--	--	--	--	--	--	--	--	3,910	15,600
Total	XX	XX	XX	XX	XX	XX	XX	XX	1,020,000	4,540,000

XX Not applicable.

1/ As published in the Crushed Stone and Sand and Gravel in the Fourth Quarter of 1998 Mineral Industry Surveys.

2/ Data may not add to totals shown because of independent rounding and differences between projected totals by States and regions.

3/ All percentage changes are calculated by using unrounded totals; percentage changes are based on the previous year's corresponding quarter.

4/ State not included in quarterly survey.

5/ Owing to a low number of reporting companies, no production estimates by quarters were generated.

TABLE 6
CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN THE UNITED STATES IN 1998,
BY MAJOR USE 1/

Use	Quantity (thousand metric tons)	Value (thousands)	Unit value
Concrete aggregates (including concrete sand)	222,000	$1,140,000	$5.12
Plaster and gunite sands	9,090	55,100	6.06
Concrete products (blocks, bricks, pipe, decorative, etc.)	8,970	53,400	5.95
Asphaltic concrete aggregates and other bituminous mixtures	70,400	367,000	5.21
Road base and coverings	129,000	506,000	3.93
Road stabilization (cement)	3,250	13,000	4.01
Road stabilization (lime)	1,440	6,170	4.28
Fill	66,300	187,000	2.82
Snow and ice control	5,750	22,800	3.97
Railroad ballast	1,140	6,060	5.31
Roofing granules	278	2,470	8.91
Filtration	1,390	7,910	5.69
Other miscellaneous uses	11,000	65,400	5.97
Unspecified: 2/			
Actual	267,000	1,280,000	4.78
Estimated	280,000	1,210,000	4.34
Total	1,080,000	4,920,000	4.57

1/ Data are rounded to three significant digits; may not add to totals shown.
2/ Includes production reported without a breakdown by end use and estimates for nonrespondents.

TABLE 7
CONSTRUCTION SAND AND GRAVEL SOLD OR USED BY PRODUCERS IN THE UNITED STATES IN 1998,
BY GEOGRAPHIC DIVISION AND MAJOR USE 1/

(Thousand metric tons and thousand dollars)

	Concrete aggregates (including concrete sand)		Plaster and gunite sands		Concrete products (blocks, bricks, pipe decorative, etc.)		Asphaltic concrete aggregates and other bituminous mixtures		Road base and coverings 2/	
Region/Division	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
Northeast:										
New England	7,610	48,300	165	1,640	293	2,040	2,270	14,500	6,290	29,200
Middle Atlantic	16,300	100,000	718	4,180	1,180	8,240	6,450	37,100	6,090	29,000
Midwest:										
East North Central	34,000	137,000	877	4,220	2,270	11,800	14,400	60,800	26,600	95,400
West North Central	22,700	100,000	516	2,610	912	5,410	10,200	39,600	22,900	64,700
South:										
South Atlantic	28,700	136,000	1,330	6,340	1,340	6,910	1,910	7,880	2,820	11,800
East South Central	10,200	48,100	334	2,660	416	3,050	3,380	16,700	3,260	12,900
West South Central	30,000	154,000	498	2,540	261	993	3,530	20,400	4,580	15,200
West:										
Mountain	31,300	151,000	1,340	7,190	1,600	8,890	11,600	57,200	35,300	132,000
Pacific	41,200	261,000	3,310	23,700	705	6,070	16,700	113,000	25,600	135,000
Total	222,000	1,140,000	9,090	55,100	8,970	53,400	70,400	367,000	134,000	526,000

	Fill		Snow and ice control		Railroad ballast		Other uses		Total	
Region/Division	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
Northeast:										
New England	3,930	11,600	1,560	6,520	67	333	20,800	99,000	43,000	213,000
Middle Atlantic	3,390	9,920	1,650	6,800	108	720	31,900	172,000	67,900	368,000
Midwest:										
East North Central	15,000	45,800	982	3,440	21	71	118,000	507,000	212,000	866,000
West North Central	6,490	14,600	501	1,800	368	1,310	43,200	166,000	108,000	396,000
South:										
South Atlantic	8,200	18,900	72	369	187	1,292	30,500	154,000	75,100	343,000
East South Central	858	3,310	3	11	--	--	26,800	119,000	45,200	206,000
West South Central	9,650	19,000	5	44	--	--	58,500	287,000	107,000	500,000
West:										
Mountain	7,450	21,000	664	2,580	41	272	115,000	457,000	205,000	837,000
Pacific	11,300	43,100	298	1,240	349	2,060	114,000	605,000	213,000	1,190,000
Total	66,300	187,000	5,750	22,800	1,140	6,060	559,000	2,570,000	1,080,000	4,920,000

1/ Data are rounded to three significant digits; may not add to totals shown.
2/ Includes road and other stabilization (cement and lime).

TABLE 8
CONSTRUCTION SAND AND GRAVEL PRODUCTION IN THE UNITED STATES IN 1998,
BY REGION AND SIZE OF OPERATION

Size range (metric tons)	Northeast				Midwest				South			
	Number of operations	Percentage of total	Quantity 1/ (thousand metric tons)	Percentage of total	Number of operations	Percentage of total	Quantity 1/ (thousand metric tons)	Percentage of total	Number of operations	Percentage of total	Quantity 1/ (thousand metric tons)	Percentage of total
Less than 25,000	396	37.0	3,830	3.5	475	23.0	4,830	1.5	203	19.0	1,960	0.9
25,000 to 49,999	160	15.0	5,290	4.8	307	14.9	10,100	3.2	150	14.0	5,080	2.2
50,000 to 99,999	169	15.8	11,000	9.9	439	21.2	29,100	9.1	180	16.9	11,900	5.2
100,000 to 199,999	158	14.8	20,200	18.2	332	16.1	43,800	13.7	173	16.2	22,400	9.8
200,000 to 299,999	81	7.6	17,600	15.9	176	8.5	39,600	12.4	100	9.4	21,900	9.6
300,000 to 399,999	35	3.3	10,900	9.8	108	5.2	33,600	10.5	69	6.5	21,700	9.5
400,000 to 499,999	23	2.2	9,140	8.2	66	3.2	26,800	8.4	44	4.1	17,900	7.9
500,000 to 599,999	22	2.1	11,000	9.9	44	2.1	21,800	6.8	39	3.6	19,500	8.6
600,000 to 699,999	9	0.8	5,230	4.7	31	1.5	18,700	5.8	29	2.7	17,000	7.5
700,000 to 799,999	5	0.5	3,320	3.0	22	1.1	14,800	4.6	12	1.1	8,210	3.6
800,000 to 899,999	2	0.2	1,510	1.4	20	1.0	15,500	4.8	11	1.0	8,420	3.7
900,000 to 999,999	1	0.1	890	0.8	11	0.5	9,570	3.0	10	0.9	8,710	3.8
1,000,000 to 1,499,999	6	0.6	6,260	5.6	20	1.0	20,900	6.5	33	3.1	35,100	15.4
1,500,000 to 1,999,999	1	0.1	1,610	1.5	4	0.2	6,220	1.9	7	0.7	10,900	4.8
2,000,000 to 2,499,999	--	--	--	--	11	0.5	22,100	6.9	6	0.6	11,700	5.1
2,500,000 to 4,999,999	1	0.1	3,000	2.7	1	0.0	2,760	0.9	2	0.2	4,950	2.2
5,000,000 and over	--	--	--	--	--	--	--	--	--	--	--	--
Total	1,069	100.0	111,000	100.0	2,067	100.0	320,000	100.0	1,068	100.0	227,000	100.0

Size range (metric tons)	West				U.S. total			
	Number of operations	Percentage of total	Quantity 1/ (thousand metric tons)	Percentage of total	Number of operations	Percentage of total	Quantity 1/ (thousand metric tons)	Percentage of total
Less than 25,000	377	23.0	3,760	0.9	1,451	24.8	14,400	1.3
25,000 to 49,999	211	12.9	6,930	1.7	828	14.2	27,400	2.5
50,000 to 99,999	275	16.8	17,800	4.3	1,063	18.2	69,900	6.5
100,000 to 199,999	231	14.1	30,000	7.2	894	15.3	116,000	10.8
200,000 to 299,999	154	9.4	34,200	8.2	511	8.7	113,000	10.5
300,000 to 399,999	90	5.5	28,200	6.7	302	5.2	94,400	8.8
400,000 to 499,999	50	3.0	20,200	4.8	183	3.1	74,100	6.9
500,000 to 599,999	53	3.2	26,000	6.2	158	2.7	78,200	7.3
600,000 to 699,999	32	2.0	18,900	4.5	101	1.7	59,800	5.6
700,000 to 799,999	21	1.3	14,100	3.4	60	1.0	40,400	3.8
800,000 to 899,999	23	1.4	17,700	4.2	56	1.0	43,100	4.0
900,000 to 999,999	16	1.0	13,900	3.3	38	0.7	33,100	3.1
1,000,000 to 1,499,999	59	3.6	64,000	15.3	118	2.0	126,000	11.7
1,500,000 to 1,999,999	19	1.2	28,500	6.8	31	0.5	47,200	4.4
2,000,000 to 2,499,999	10	0.6	20,300	4.9	27	0.5	54,100	5.0
2,500,000 to 4,999,999	17	1.0	51,100	12.2	21	0.4	61,800	5.7
5,000,000 and over	3	0.2	22,600	5.4	3	0.1	22,600	2.1
Total	1,641	100.0	418,000	100.0	5,845	100.0	1,080,000	100.0

1/ Data are rounded to three significant digits; may not add to totals shown.

TABLE 9
NUMBER OF CONSTRUCTION SAND AND GRAVEL OPERATIONS AND PROCESSING PLANTS IN THE UNITED STATES IN 1998, BY GEOGRAPHIC DIVISION

Region/Division	Mining operations on land				Dredging operations	Total active operations
	Stationary	Portable	Stationary and portable	No plants or unspecified		
Northeast:						
New England	172	160	37	42	2	413
Middle Atlantic	247	274	44	55	36	656
Midwest:						
East North Central	461	374	102	97	85	1,119
West North Central	218	433	31	64	202	948
South:						
South Atlantic	124	43	10	69	128	374
East South Central	121	22	8	21	58	230
West South Central	233	65	13	73	80	464
West:						
Mountain	338	467	98	97	21	1,021
Pacific 1/	294	191	65	39	31	620
Total	2,208	2,029	408	557	643	5,845

1/ An undetermined number of operations leased from the Bureau of Land Management in Alaska are counted as one operation.

TABLE 10
NUMBER OF CONSTRUCTION SAND AND GRAVEL OPERATIONS AND PROCESSING PLANTS IN THE UNITED STATES IN 1998, BY STATE

State	Mining operations on land				Dredging operations	Total active operations
	Stationary	Portable	Stationary and portable	No plants or unspecified		
Alabama	37	9	--	10	20	76
Alaska 1/	6	2	1	2	1	12
Arizona	41	51	24	9	2	127
Arkansas	44	9	2	9	6	70
California	187	72	37	9	15	320
Colorado	78	121	25	8	12	244
Connecticut	29	18	6	3	1	57
Delaware	--	--	--	4	5	9
Florida	14	6	--	6	32	58
Georgia	12	1	--	1	31	45
Hawaii	1	--	--	1	--	2
Idaho	33	74	3	26	1	137
Illinois	62	32	19	14	32	159
Indiana	51	24	23	10	23	131
Iowa	48	59	4	10	29	150
Kansas	12	36	1	13	44	106
Kentucky	10	1	3	--	8	22
Louisiana	20	3	1	10	31	65
Maine	33	62	3	16	--	114
Maryland	19	4	3	12	1	39
Massachusetts	62	18	11	6	1	98
Michigan	142	146	25	36	8	357
Minnesota	69	155	15	15	1	255
Mississippi	39	4	5	6	19	73
Missouri	28	11	1	2	31	73
Montana	34	56	7	15	1	113
Nebraska	20	22	1	5	97	145
Nevada	17	32	12	5	1	67
New Hampshire	19	19	8	3	--	49
New Jersey	30	6	5	6	15	62
New Mexico	38	47	11	17	--	113
New York	142	238	27	41	8	456
North Carolina	21	19	3	27	25	95
North Dakota	13	67	4	1	--	85
Ohio	144	24	20	27	20	235
Oklahoma	13	9	--	13	25	60
Oregon	31	27	8	8	4	78
Pennsylvania	75	30	12	8	13	138
Rhode Island	9	1	2	--	--	12
South Carolina	18	4	2	9	19	52
South Dakota	28	83	5	18	--	134
Tennessee	35	8	--	5	11	59
Texas	156	44	10	41	18	269
Utah	88	56	12	11	1	168
Vermont	20	42	7	14	--	83
Virginia	27	8	2	10	13	60
Washington	69	90	19	19	11	208
West Virginia	13	1	--	--	2	16
Wisconsin	62	148	15	10	2	237
Wyoming	9	30	4	6	3	52
Total	2,208	2,029	408	557	643	5,845

1/ An undetermined number of operations leased from the Bureau of Land Management in Alaska are counted as one operation.

TABLE 11
CONSTRUCTION SAND AND GRAVEL SOLD OR USED BY PRODUCERS IN THE UNITED STATES IN 1998, BY REGION AND METHOD OF TRANSPORTATION 1/

(Thousand metric tons)

Region/Division	Truck	Rail	Water	Other	Not transported	Not specified	Total
Northeast:							
New England	17,800	764	--	845	888	22,700	43,000
Middle Atlantic	31,600	53	784	952	793	33,700	67,900
Midwest:							
East North Central	77,900	--	3,430	3,220	6,120	122,000	212,000
West North Central	46,200	1,040	3,440	2,900	5,240	49,000	108,000
South:							
South Atlantic	37,700	695	2,730	543	1,490	32,000	75,100
East South Central	15,400	53	1,070	34	347	28,400	45,200
West South Central	36,800	3,170	W	1,080	3,610	62,400	107,000
West:							
Mountain	71,000	12	--	1,830	3,800	128,000	205,000
Pacific	75,500	1,400	5,770	2,660	6,170	122,000	213,000
Total	410,000	7,190	17,200	14,100	28,500	600,000	1,080,000

1/ Data are rounded to three significant digits; may not add to totals shown.

TABLE 12
U.S. EXPORTS OF CONSTRUCTION SAND AND GRAVEL IN 1998,
BY COUNTRY 1/

(Thousand metric tons and thousand dollars)

Country or Territory	Sand		Gravel	
	Quantity	F.a.s. value 2/	Quantity	F.a.s. value 2/
North America:				
Bahamas, The	9	146	34	316
Canada	336	5,500	384	2,070
Mexico	1,250	17,000	21	1,780
Netherlands Antilles	(3/)	14	(3/)	8
Trinidad and Tobago	(3/)	207	--	--
Other 4/	3	281	(3/)	16
Total	1,600	23,200	438	4,190
South America:				
Argentina	1	267	4	752
Ecuador	144	904	--	--
Peru	1	429	--	--
Venezuela	27	1,190	3	572
Other 5/	7	134	2	73
Total	180	2,920	9	1,400
Europe:				
Belgium	13	365	(3/)	9
Germany	19	399	3	372
Spain	1	75	--	--
Sweden	(3/)	140	(3/)	9
United Kingdom	2	402	1	76
Other 6/	20	1,290	21	752
Total	53	2,670	25	1,220
Asia:				
Hong Kong	(3/)	8	--	--
Japan	3	206	(3/)	46
Korea, Republic of	(3/)	51	(3/)	7
Philippines	--	--	(3/)	16
Singapore	(3/)	50	1	24
Taiwan	4	201	(3/)	4
Thailand	(3/)	24	--	--
Other 7/	2	389	4	374
Total	9	929	6	471
Oceania, other 8/	4	190	1	93
Middle East, other 9/	(3/)	144	1	61
Africa, other 10/	15	305	1	53
Grand total	1,860	30,300	482	7,480

1/ Data are rounded to three significant digits; may not add to totals shown.
2/ Free alongside ship; value of material at U.S. port of export; based on transaction price, including all charges incurred in placing material alongside ship.
3/ Less than 1/2 unit.
4/ Includes Barbados, Costa Rica, Dominican Republic, Guatemala, Honduras, Jamaica, Nicaragua, Panama, St. Christopher and Nevis, St. Lucia, and St. Vincent.
5/ Includes Bolivia, Brazil, Chile, Colombia, Suriname, and Uruguay.
6/ Includes Austria, Denmark, France, Hungary, Ireland, Italy, the Netherlands, Norway, Russia, and Turkey.
7/ Includes Brunei, China, India, Indonesia, Malaysia, Pakistan, and Vietnam.
8/ Includes Australia and New Zealand.
9/ Includes Bahrain, Israel, and Saudi Arabia.
10/ Includes Egypt, Gabon, Ghana, Niger, Nigeria, and South Africa.

Source: Bureau of the Census.

TABLE 13
U.S. IMPORTS FOR CONSUMPTION OF CONSTRUCTION SAND AND GRAVEL,
BY COUNTRY 1/

(Thousand metric tons and thousand dollars)

	1997		1998	
Country or Territory	Quantity	C.i.f. value 2/	Quantity	C.i.f. value 2/
Australia	6	1,100	52	1,100
Bahamas, The	243	1,410	152	1,180
Canada	1,190	9,770	781	7,460
Dominica	20	272	20	245
France	1	261	1	168
Japan	25	1,100	11	631
Mexico	21	1,550	8	1,210
Netherlands Antilles	26	299	18	213
United Kingdom	1	502	1	256
Other 3/	79	1,820	78	2,550
Total	1,610	18,100	1,120	15,000

1/ Data are rounded to three significant digits; may not add to totals shown.
2/ Cost, insurance, and freight; value of material at U.S. port of entry; based on purchase price and including all charges (except U.S. import duties) in bringing material from foreign country to alongside carrier.
3/ Includes Antigua and Barbuda, Austria, China, Guyana, Italy (1998), Martinique (1998), and New Zealand.

Source: Bureau of the Census.

TABLE 14
RECYCLED ASPHALT AND CONCRETE SOLD OR USED BY PRODUCERS IN THE UNITED STATES, BY REGION 1/

	Recycled asphalt						Recycled concrete					
	1997			1998			1997			1998		
Region/Division	Quantity (thousand metric tons)	Value (thousands)	Unit value	Quantity (thousand metric tons)	Value (thousands)	Unit value	Quantity (thousand metric tons)	Value (thousands)	Unit value	Quantity (thousand metric tons)	Value (thousands)	Unit value
Northeast:												
New England	290	$1,700	$5.87	426	$1,770	$4.15	333	$1,760	$5.28	264	1,370	$5.18
Middle Atlantic	15	107	7.13	12	76	6.33	320	2,100	6.56	312	2,120	6.80
Midwest:												
East North Central	530 r/	2,250	4.24	980	2,980	3.04	807	3,090	3.83	439	2,040	4.64
West North Central	634	2,390	3.77	900	3,320	3.69	1,090	3,630	3.33	1,460	5,470	3.75
South:												
South Atlantic	79	248	3.14	178	738	4.15	W	W	4.28	50	331	6.62
East South Central	413	1,320	3.19	286	1,030	3.59	--	--	--	--	--	--
West South Central	28	205	7.32	5	28	5.60	W	W	16.88	--	--	--
West:												
Mountain	370	1,580	4.27	626	2,360	3.77	355	1,070	3.02	478	1,360	2.85
Pacific	1,080	4,070	3.78	943	3,210	3.41	1,120	4,730	4.21	1,450	5,480	3.77
Total	3,430	13,900	4.04	4,360	15,500	3.56	4,150	17,400	4.20	4,450	18,200	4.08

r/ Revised. W Withheld to avoid disclosing company proprietary data; included in "Total."
1/ Data are rounded to three significant digits; may not add to totals shown.

TABLE 15
RECYCLED ASPHALT SOLD OR USED BY PRODUCERS IN THE UNITED STATES, BY STATE 1/

State	1997			1998		
	Quantity (thousand metric tons)	Value (thousands)	Unit value	Quantity (thousand metric tons)	Value (thousands)	Unit value
Alabama	27	$62	$2.30	27	$99	$3.67
Alaska	114	763	6.69	W	W	4.56
Arizona	W	W	4.40	239	1,230	5.15
California	681	2,130	3.12	715	2,360	3.30
Colorado	136	711	5.23	19	82	4.32
Connecticut	W	W	6.20	123	664	5.40
Georgia	--	--	--	90	454	5.04
Idaho	W	W	1.82	W	W	1.82
Illinois	32	94	2.94	W	W	9.00
Indiana	9	10	1.11	7	45	6.43
Iowa	44	198	4.50	43	269	6.26
Kansas	4	101	25.25	W	W	4.81
Louisiana	--	--	--	3	13	4.33
Maine	80	371	4.64	218	430	1.97
Massachusetts	62	493	7.95	64	603	9.42
Michigan	257	1,130	4.40	684	1,800	2.63
Minnesota	499	1,640	3.28	807	2,690	3.33
Mississippi	W	W	3.30	150	495	3.30
Montana	41	270	6.59	31	112	3.61
Nevada	57	251	4.40	72	75	1.04
New Hampshire	49	127	2.59	10	52	5.20
New Jersey	W	W	6.20	W	W	5.33
New Mexico	24	87	3.63	26	157	6.04
New York	W	W	5.00	6	44	7.33
North Carolina	69	144	2.09	58	193	3.33
North Dakota	W	W	3.79	5	10	2.00
Ohio	--	--	--	17	109	6.41
Oklahoma	W	W	5.00	W	W	5.00
Oregon	53	311	5.87	W	W	3.00
Pennsylvania	W	W	10.00	--	--	--
Rhode Island	W	W	8.62	W	W	2.00
South Carolina	1	4	4.00	9	10	1.11
South Dakota	57	341	5.98	45	351	7.80
Tennessee	W	W	3.21	110	434	3.95
Texas	25	190	7.60	--	--	--
Utah	W	W	2.34	170	504	2.96
Vermont	5	21	4.20	8	14	1.75
Virginia	W	W	11.11	W	W	3.81
Washington	226	868	3.84	207	770	3.72
Wisconsin	233	1,010	4.34	268	997	3.72
Wyoming	(2/)	3	5.52	7	36	5.14
Total	3,430	13,900	4.04	4,360	15,500	3.56

W Withheld to avoid disclosing company proprietary data; included in "Total."
1/ Data are rounded to three significant digits; may not add to totals shown.
2/ Less than 1/2 unit.

TABLE 16
RECYCLED CONCRETE SOLD OR USED BY SAND AND GRAVEL PRODUCERS IN THE UNITED STATES, BY STATE 1/

State	1997			1998		
	Quantity (thousand metric tons)	Value (thousands)	Unit value	Quantity (thousand metric tons)	Value (thousands)	Unit value
Alaska	W	W	$8.00	(2/)	$3	$15.47
Arizona	W	W	2.21	202	529	2.62
California	957	$3,816	3.99	1,305	4,814	3.69
Colorado	74	361	4.88	W	W	5.11
Connecticut	W	W	5.93	W	W	5.49
Florida	--	--	--	9	61	6.78
Georgia	--	--	--	8	72	9.00
Hawaii	3	21	7.00	3	22	7.33
Idaho	W	W	3.00	W	W	5.00
Illinois	186	697	3.75	32	183	5.72
Indiana	54	150	2.78	36	148	4.11
Iowa	54	309	5.72	81	551	6.80
Kansas	W	W	4.50	W	W	4.50
Maine	4	16	4.00	25	111	4.44
Maryland	W	W	4.67	--	--	--
Massachusetts	173	897	5.18	106	545	5.14
Michigan	278	1,054	3.79	81	479	5.91
Minnesota	951	2,974	3.13	1,239	4,252	3.43
Montana	W	W	2.78	W	W	1.09
Nevada	136	150	1.10	--	--	--
New Hampshire	3	14	4.67	7	45	6.43
New Jersey	W	W	6.47	W	W	6.37
New Mexico	W	W	4.60	67	337	5.03
New York	305	1,997	6.55	273	1,880	6.89
North Carolina	W	W	5.69	W	W	4.10
North Dakota	--	--	--	W	W	1.11
Ohio	223	890	3.99	78	340	4.36
Oregon	25	130	5.20	W	W	3.33
Pennsylvania	W	W	5.00	W	W	6.05
Rhode Island	53	248	4.68	W	W	2.50
South Carolina	W	W	1.12	W	W	8.62
South Dakota	83	340	4.10	W	W	5.45
Texas	W	W	16.49	--	--	--
Utah	W	W	3.17	W	W	2.22
Vermont	W	W	4.78	9	31	3.44
Washington	95	423	4.45	141	627	4.45
Wisconsin	66	297	4.50	212	885	4.17
Total	4,151	17,420	4.20	4,454	18,164	4.08

W Withheld to avoid disclosing company proprietary data; included in "Total."
1/ Data are rounded to three significant digits; may not add to totals shown.
2/ Less than 1/2 unit.

FIGURE 1

PRODUCTION OF CONSTRUCTION SAND AND GRAVEL IN THE UNITED STATES IN 1998, BY GEOGRAPHIC DIVISION