

THE MINERAL INDUSTRY OF TEXAS

This chapter has been prepared under a Memorandum of Understanding between the U.S. Geological Survey and the University of Texas at Austin, Bureau of Economic Geology, for collecting information on all nonfuel minerals.

In 2000, the estimated value¹ of nonfuel mineral production for Texas was \$2.05 billion, based upon preliminary U.S. Geological Survey (USGS) data. This was about a 10.2% increase from that of 1999² and followed a 2.2% increase from 1998 to 1999. Texas rose in rank to fourth from fifth in the Nation in total nonfuel mineral production value, of which the State accounted for 5% of the U.S. total.

In 2000, 94% of Texas' nonfuel mineral value came from the production of the State's top five industrial minerals, in descending order of value: cement (masonry and portland), crushed stone, construction sand and gravel, lime, and salt. The significantly increased values of construction aggregates (crushed stone and construction sand and gravel), portland cement, and salt accounted for the largest increases in Texas nonfuel mineral production value (table 1). (Mineral value comparisons are in descending order of change in value.) The only significant decreases were those of Frasch sulfur following a 1999 plant closure and dimension stone (table 1); nearly all other nonfuel mineral commodities had small increases or were unchanged.

In 1999, most nonfuel minerals increased in value from that of 1998, many by substantial amounts. Crushed stone led with the highest increase of \$52 million, followed by cement (portland and masonry combined for a nearly \$47 million increase), construction sand and gravel, salt, Grade-A helium, dimension stone, lime, and ball clay. The only significant decreases occurred in magnesium metal and magnesium compounds owing to the closing of the State's only producing plant and a smaller yet significant drop in Frasch sulfur (table 1). All other value changes were relatively small and

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 2000 USGS mineral production data published in this chapter are preliminary estimates as of July 2001 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. A telephone listing of 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.

²Values, percentage calculations, and rankings for 1999 may vary from the Minerals Yearbook, Area Reports: Domestic 1999, Volume II, owing to the revision of preliminary 1999 to final 1999 data. Data for 2000 are preliminary and are expected to change; related rankings may also change.

inconsequential to the State's net change in value.

Based upon USGS estimates of the quantities of minerals produced in the 50 States in 2000, Texas remained first in crushed stone; second in portland cement, construction sand and gravel, and salt; and second of 3 crude helium-producing States. The State continued to be second in ball clay, talc, and zeolites; third in common clay; fourth in gypsum; fifth in lime, industrial sand and gravel, and kaolin; sixth in bentonite; eighth in masonry cement; and increased to fourth from fifth in the production of dimension stone.

The Texas metal industry produced copper, primary aluminum, raw steel, and smaller amounts of other metals. Sources of plant feed included ores and scrap metal acquired from other domestic or foreign sources. Texas produced an estimated 3.8 million metric tons of raw steel, as reported by the American Iron and Steel Institute. Based upon USGS data, the State increased in rank to seventh from eighth in primary aluminum production.

The following narrative information was provided by the Texas Bureau of Economic Geology³ (BEG). The nonfuel mineral industry of Texas continued to grow during 2000. The increase in population and growth in industry spurred activity in mineral production by creating a demand for materials used in developing infrastructure. Production of aggregate, stone, and other industrial minerals needed for manufacturing building products responded to increased construction activity. Annual job growth in mining, reported by the Texas Labor Market Review, increased 4.6% from December 1999 through December 2000 (Griffis, 1999, 2000). Records of the Texas Workforce Commission showed increases in employment in construction and manufacturing related to mineral products during 2000. The construction job annual growth rate was 4.9%. Jobs related to clay, glass products, and stone increased by 1%, and those related to concrete, gypsum, and plaster products increased by 2.1%. According to the BEG, prospects for continued population increase and commercial development suggested that production of the State's mineral resources used in construction and basic infrastructure is expected to continue to grow.

References Cited

- Griffis, Clayton, ed., 1999, Texas labor market review: Austin, Texas Workforce Commission, December, 10 p.
———2000, Texas labor market review: Austin, Texas Workforce Commission, December, 12 p.

³Sigrid Clift, Public Information Geologist, authored the text of mineral industry information submitted by the Texas Bureau of Economic Geology.

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

(Thousand metric tons and thousand dollars unless otherwise specified)

Mineral	1998		1999		2000 p/	
	Quantity	Value	Quantity	Value	Quantity	Value
Cement:						
Masonry	216	20,500 e/	261	29,400 e/	290	32,700 e/
Portland	8,430	621,000 e/	8,680	659,000 e/	9,000	676,000 e/
Clays, common	2,120	10,100	2,100	9,890	2,100	9,890
Gemstones	NA	11	NA	11	NA	11
Gypsum, crude	2,260	15,500	2,230	15,700	W	W
Lime	1,620	101,000	1,580	105,000	1,760	107,000
Salt	9,420	83,900	10,200	97,500	10,800	104,000
Sand and gravel:						
Construction	74,600	354,000	77,100	373,000	99,500	490,000
Industrial	1,760	38,500	1,620	37,100	1,620	37,800
Stone:						
Crushed	100,000 r/	401,000 r/	109,000	449,000	120,000	508,000
Dimension	metric tons					
Talc	do.	40,900	16,700	82,500	24,200	82,100
Zeolites	do.	245,000 r/	5,230 r/	220,000	5,000	224,000
		(3/)	NA	(3/)	NA	(3/)
Combined values of clays (ball, bentonite, fuller' earth, kaolin), helium, magnesium compounds (1998), magnesium metal (1998), sulfur [Frasch, (1998-99)], and values indicated by symbol W						
		XX	158,000	XX	58,400	XX
Total		XX	1,830,000 r/	XX	1,860,000	XX
						2,050,000

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.
- 3/ Withheld to avoid disclosing company proprietary data.

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

Kind	1998				1999			
	Number of quarries	Quantity (thousand metric tons)	Value (thousands)	Unit value	Number of quarries	Quantity (thousand metric tons)	Value (thousands)	Unit value
Limestone 2/	117 r/	92,900 r/	\$371,000 r/	\$3.99 r/	131	102,000	\$421,000	\$4.12
Dolomite	3 r/	1,070	4,070	3.81 r/	3	1,480	5,820	3.92
Granite	9 r/	W	W	5.51 r/	10	21	296	14.10
Marble	34	W	W	29.44 r/	14	W	W	14.93
Calcareous marl	2	W	W	3.86	2	W	W	3.87
Sandstone and quartzite	5	938	4,070	4.34	6	942	3,480	3.69
Shell	1	W	W	3.30	1	W	W	3.55
Traprock	1	W	W	7.19	1	W	W	8.10
Volcanic cinder and scoria	2	W	W	5.04	2	W	W	3.59
Miscellaneous stone	17 r/	3,710 r/	12,500 r/	3.38 r/	13	2,360	9,980	4.24
Total or average	XX	100,000 r/	401,000 r/	3.99 r/	XX	109,000	449,000	4.13

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.
- 2/ Includes limestone-dolomite reported with no distinction between the two.

TABLE 3
TEXAS: CRUSHED STONE SOLD OR USED BY PRODUCERS
IN 1999, BY USE 1/ 2/

Use	Quantity (thousand metric tons)	Value (thousands)	Unit value
Construction:			
Coarse aggregate (+1 1/2 inch):			
Riprap and jetty stone	276	\$1,720	\$6.22
Filter stone	39	154	3.95
Other coarse aggregate	27	84	3.11
Coarse aggregate, graded:			
Concrete aggregate, coarse	11,200	57,200	5.10
Bituminous aggregate, coarse	4,760	26,900	5.64
Bituminous surface-treatment aggregate	345	2,250	6.52
Railroad ballast	670	3,410	5.10
Other graded coarse aggregate	3,340	15,200	4.55
Fine aggregate (-3/8 inch):			
Stone sand, concrete	4,430	20,800	4.70
Stone sand, bituminous mix or seal	604	2,850	4.71
Screening, undesignated	200	666	3.33
Other fine aggregate	567	1,820	3.21
Coarse and fine aggregates:			
Graded road base or subbase	15,600	56,700	3.64
Unpaved road surfacing	459	3,270	7.12
Terrazzo and exposed aggregate	W	W	W
Crusher run or fill or waste	2,930	8,710	2.97
Other coarse and fine aggregates	5,370	17,200	3.21
Other construction materials	320	1,120	3.48
Agricultural:			
Agricultural limestone	364	1,500	4.11
Poultry grit and mineral food	(3/)	(3/)	(3/)
Other agricultural uses	179	1,750	9.79
Chemical and metallurgical:			
Cement manufacture	9,150	28,700	3.14
Lime manufacture	1,760	6,290	3.58
Chemical stone	(3/)	(3/)	(3/)
Sulfur oxide removal	(3/)	(3/)	(3/)
Other chemical and metallurgical	120	579	4.83
Special:			
Asphalt fillers or extenders	W	W	W
Other fillers or extenders	W	W	W
Roofing granules	W	W	W
Other miscellaneous uses and specified uses not listed	W	W	W
Unspecified: 4/			
Reported	25,200	97,000	3.86
Estimated	20,000	85,000	4.23
Total or average	109,000	449,000	4.13

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/ Includes calcareous marl, dolomite, granite, limestone, limestone-dolomite, marble, miscellaneous stone, sandstone and quartzite, shell, traprock, and volcanic cinder and scoria.

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

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

TABLE 4
TEXAS: CRUSHED STONE SOLD OR USED BY PRODUCERS IN 1999,
BY USE AND DISTRICT 1/

(Thousand metric tons and thousand dollars)

Use	District 1		District 2		District 3	
	Quantity	Value	Quantity	Value	Quantity	Value
Construction:						
Coarse aggregate (+1 1/2 inch) 2/	W	W	W	W	W	W
Coarse aggregate, graded 3/	W	W	W	W	--	--
Fine aggregate (-3/8 inch) 4/	W	W	W	W	W	W
Coarse and fine aggregate 5/	205	697	W	W	W	W
Other construction materials	--	--	W	W	W	W
Agricultural 6/	--	--	W	W	--	--
Chemical and metallurgical 7/	--	--	--	--	W	W
Special 8/	--	--	--	--	--	--
Other miscellaneous uses	--	--	--	--	--	--
Unspecified: 9/						
Reported	--	--	--	--	3,130	12,100
Estimated	320	1,300	110	470	370	1,500
Total	583	2,370	662	2,870	4,290	16,600
Use	District 4		District 5		District 6	
	Quantity	Value	Quantity	Value	Quantity	Value
Construction:						
Coarse aggregate (+1 1/2 inch) 2/	W	W	13	95	W	W
Coarse aggregate, graded 3/	995	7,270	9,150	44,700	--	--
Fine aggregate (-3/8 inch) 4/	W	W	2,000	7,620	--	--
Coarse and fine aggregate 5/	1,190	4,520	4,750	21,300	W	W
Other construction materials	--	--	W	W	--	--
Agricultural 6/	--	--	W	W	--	--
Chemical and metallurgical 7/	W	W	4,980	16,800	--	--
Special 8/	--	--	W	W	--	--
Other miscellaneous uses	--	--	--	--	--	--
Unspecified: 9/						
Reported	6,950	26,800	1,130	4,350	--	--
Estimated	760	3,100	9,400	40,000	310	1,300
Total	10,800	45,900	32,700	145,000	507	1,980
Use	District 7 10/		District 9		Unspecified districts	
	Quantity	Value	Quantity	Value	Quantity	Value
Construction:						
Coarse aggregate (+1 1/2 inch) 2/	286	1,690	--	--	--	--
Coarse aggregate, graded 3/	9,920	51,500	--	--	--	--
Fine aggregate (-3/8 inch) 4/	3,450	16,600	--	--	--	--
Coarse and fine aggregate 5/	16,800	56,000	W	W	--	--
Other construction materials	--	--	--	--	--	--
Agricultural 6/	275	784	--	--	--	--
Chemical and metallurgical 7/	4,660	13,200	--	--	--	--
Special 8/	W	W	--	--	--	--
Other miscellaneous uses	W	W	--	--	--	--
Unspecified: 9/						
Reported	11,900	46,000	W	W	--	--
Estimated	8,000	34,000	740	3,300	15	63
Total	55,500	220,000	3,700	13,400	15	63

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

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

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

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

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

7/ Includes cement manufacture, chemical stone, lime manufacture, and sulfur oxide removal.

8/ Includes asphalt fillers or extenders, other fillers or extenders, and roofing granules.

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

10/ Includes production from District 8.

TABLE 5
TEXAS: CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN 1999,
BY MAJOR USE CATEGORY 1/

Use	Quantity (thousand metric tons)	Value (thousands)	Unit value
Concrete aggregate (including concrete sand)	25,600	\$137,000	\$5.37
Plaster and gunite sands	367	2,310	6.29
Concrete products (blocks, bricks, decorative, pipe, etc.)	74	530	7.16
Asphaltic concrete aggregates and other bituminous mixtures	1,160	9,020	7.80
Road base and coverings	2,940	11,300	3.83
Road stabilization (cement)	715	4,070	5.69
Road stabilization (lime)	1	2	2.00
Fill	9,520	30,400	3.19
Roofing granules	3	27	9.00
Other miscellaneous uses	96	699	7.28
Unspecified: 2/			
Reported	6,490	34,900	5.37
Estimated	30,000	140,000	4.71
Total or average	77,100	373,000	4.83

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

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

TABLE 6
TEXAS: CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN 1999,
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/	836	7,100	W	W	W	W	W	W
Asphaltic concrete and road base materials 3/	871	7,380	--	--	W	W	W	W
Fill	204	928	--	--	14	15	W	W
Roofing granules	--	--	--	--	--	--	3	27
Other miscellaneous uses 4/	58	497	--	--	716	3,890	212	1,940
Unspecified: 5/								
Reported	47	265	--	--	1,460	6,630	161	1,280
Estimated	1,800	8,600	1,600	9,800	100	700	1,400	8,000
Total	3,830	24,700	1,590	9,940	2,330	11,200	1,750	11,200
	District 5		District 6		District 7		District 8	
	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
Concrete aggregate and concrete products 2/	7,770	47,900	374	1,680	2,180	10,700	11,500	51,100
Asphaltic concrete and road base materials 3/	624	2,250	W	W	164	633	2,110	7,940
Fill	2,170	4,160	W	W	1,200	1,730	5,920	23,500
Roofing granules	--	--	--	--	--	--	--	--
Other miscellaneous uses 4/	7	56	10	66	--	--	--	--
Unspecified: 5/								
Reported	2,160	13,100	--	--	2,660	13,600	--	--
Estimated	4,800	21,000	1,400	7,400	3,200	15,000	11,000	47,000
Total	17,600	88,000	1,790	9,120	9,400	41,800	31,000	129,000
	District 9							
	Quantity	Value						
Concrete aggregate and concrete products 2/	2,930	18,700						
Asphaltic concrete and road base materials 3/	562	3,340						
Fill	7	24						
Roofing granules	--	--						
Other miscellaneous uses 4/	--	--						
Unspecified: 5/								
Reported	--	--						
Estimated	4,400	25,000						
Total	7,850	47,400						

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/ Includes gunite and plaster sands.

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

4/ Includes filtration.

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