

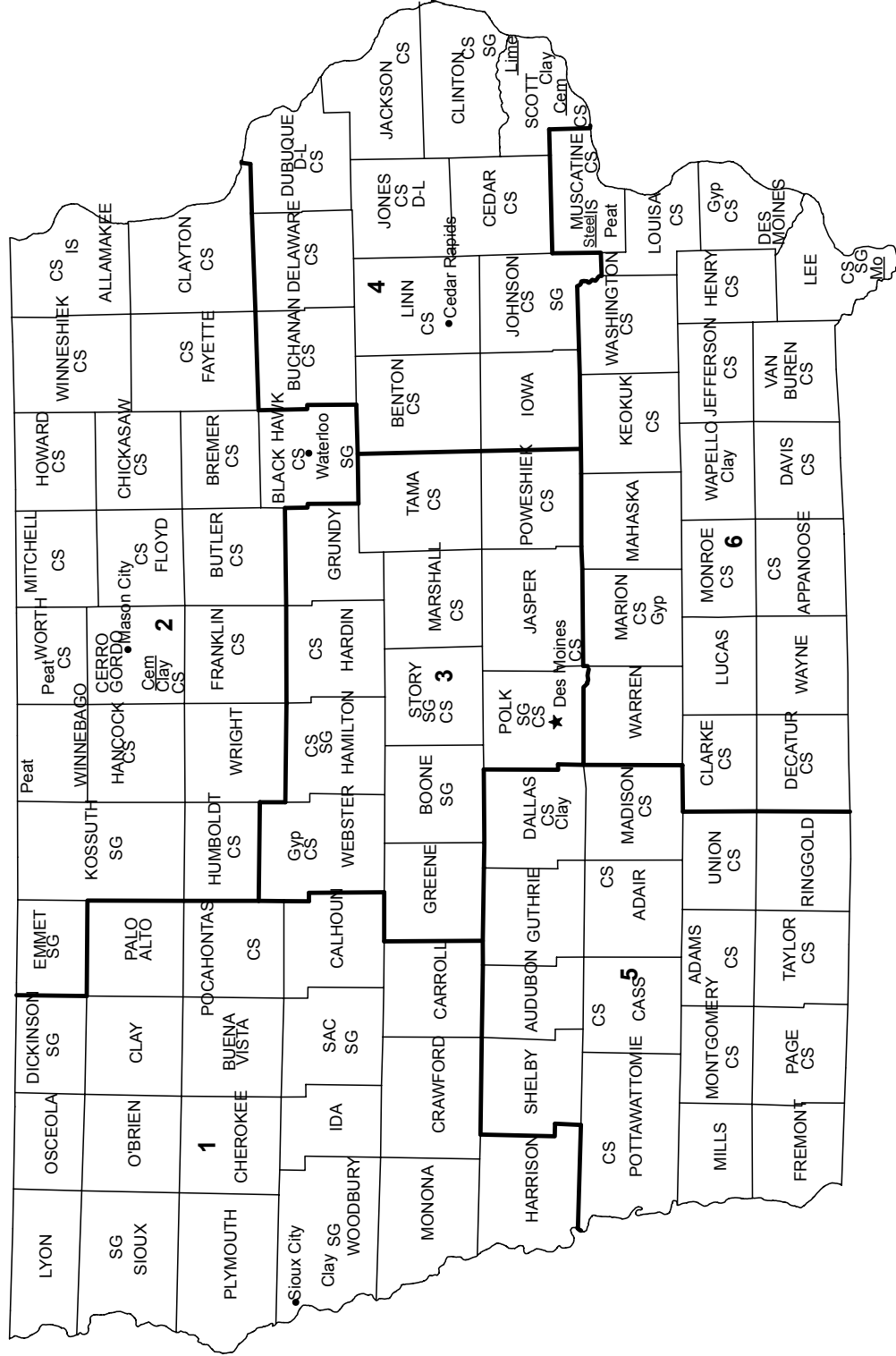
IOWA

LEGEND

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

**MINERAL SYMBOLS
(Major producing areas)**

- Cem Cement plant
- Clay Common clay
- CS Crushed stone
- D-L Dimension limestone
- Gyp Gypsum
- IS Industrial sand
- Lime Lime plant
- Mo Molybdenum plant
- Peat Peat
- SG Construction sand and gravel
- Steel Steel plant



THE MINERAL INDUSTRY OF IOWA

This chapter has been prepared under a Memorandum of Understanding between the U.S. Geological Survey and the Iowa Geological Survey and Land Quality Bureau for collecting information on all nonfuel minerals.

In 2004, Iowa's nonfuel raw mineral production was valued¹ at \$529 million, based upon annual U.S. Geological Survey (USGS) data. This was about a 5% increase in value from that of 2003,² which was up 3.3% from 2002. The State was 28th in rank (27th in 2003) among the 50 States in total nonfuel mineral production value and accounted for more than 1% of the U.S. total.

Crushed stone, cement (portland and masonry), construction sand and gravel, and gypsum (in descending order of value) were Iowa's leading nonfuel mineral commodities in 2004, accounting for about 97% of the State's total nonfuel mineral value. In 2004, most of the State's commodities showed increases in production with the related increased values of construction sand and gravel and crushed stone leading the way, up more than \$13 million and \$8 million, respectively. Smaller increases in value also took place in cement, up about \$1.5 million, and gypsum and lime, up about \$1 million each (production of cement and lime down, slightly).

In 2003, increases in the production of crushed stone, its value up \$13 million, cement and lime, values up about \$2 million each, and gypsum, up nearly \$1 million, accounted for most of the State's rise in value. The largest decrease in value for the year was that of a slightly more than \$1 million drop for construction sand and gravel (table 1).

In 2004, Iowa rose to 8th from 11th in the quantities of portland cement that its mining and cement processing operations produced, decreased to 4th from 3d in gypsum production, and continued to be a significant producer of crushed stone, construction sand and gravel, and common clays (descending order of value). No metals were mined in Iowa; all of the State's metal production, such as raw steel, resulted from the processing of materials acquired from other domestic and foreign sources.

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 2004 USGS mineral production data published in this chapter are those available as of December 2005. All USGS Mineral Industry Surveys and USGS Minerals Yearbook chapters—mineral commodity, State, and country—also can be retrieved over the Internet at URL <http://minerals.usgs.gov/minerals>.

²Values, percentage calculations, and rankings for 2003 may differ from the Minerals Yearbook, Area Reports: Domestic 2003, Volume II, owing to the revision of preliminary 2003 to final 2003 data. Data and rankings for 2004 are considered to be final and are not likely to change significantly.

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

(Thousand metric tons and thousand dollars)

Mineral	2002		2003		2004	
	Quantity	Value	Quantity	Value	Quantity	Value
Clays, common	256	763	256	763	325	1,150
Gemstones	NA	2	NA	2	NA	2
Sand and gravel, construction	14,600	62,300	13,400	61,000	17,100	74,300
Stone, crushed	35,900	194,000	35,600	207,000	36,800	215,000
Combined values of cement, gypsum (crude), lime, peat, sand and gravel (industrial)	XX	231,000	XX	235,000	XX	239,000
Total	XX	488,000	XX	504,000	XX	529,000

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
IOWA: CRUSHED STONE SOLD OR USED, BY KIND¹

Kind	2002				2003				2004			
	Number of quarries	Quantity (thousand metric tons)	Value (thousands)	Unit value	Number of quarries	Quantity (thousand metric tons)	Value (thousands)	Unit value	Number of quarries	Quantity (thousand metric tons)	Value (thousands)	Unit value
Limestone ²	171 ^r	W	W	\$5.49 ^r	184	W	W	\$5.77	159	W	W	\$5.81
Dolomite	37 ^r	W	W	4.30 ^r	37	W	W	6.63	37	W	W	6.55
Total or average	XX	35,900	\$194,000	5.41	XX	35,600	\$207,000	5.82	XX	36,800	\$215,000	5.85

^rRevised. W Withheld to avoid disclosing company proprietary data; included in "Total or average." XX Not applicable.

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

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

TABLE 3a
IOWA: CRUSHED STONE SOLD OR USED BY PRODUCERS IN 2003, BY USE¹

Use	Quantity (thousand metric tons)	Value (thousands)	Unit value
Construction:			
Coarse aggregate (+1½ inch):			
Macadam	232	\$1,350	\$5.83
Riprap and jetty stone	142	1,810	12.74
Filter stone	519	3,420	6.58
Other coarse aggregates	76	441	5.80
Total or average	969	7,020	7.24
Coarse aggregate, graded:			
Concrete aggregate, coarse	1,520	13,600	8.97
Bituminous aggregate, coarse	506	3,960	7.82
Bituminous surface-treatment aggregate	186	1,240	6.69
Railroad ballast	W	W	7.50
Other graded coarse aggregates	42	361	8.60
Total or average	2,250	19,200	8.51
Fine aggregate (-¾ inch):			
Stone sand, concrete	(2)	(2)	5.51
Stone sand, bituminous mix or seal	147	1,010	6.88
Screening, undesignated	238	1,000	4.21
Other fine aggregates	71	391	5.51
Total or average	456	2,400	5.27
Coarse and fine aggregates:			
Graded road base or subbase	1,360	10,400	7.63
Unpaved road surfacing	4,690	29,700	6.33
Crusher run or fill or waste	467	1,300	2.79
Roofing granules	(3)	(3)	10.29
Other coarse and fine aggregates	847	5,530	6.53
Total or average	7,370	46,900	6.37
Other construction materials ⁴	289	1,700	5.89
Agricultural:			
Limestone	849	3,960	4.67
Poultry grit and mineral food	(5)	(5)	7.29
Other agricultural uses	411	2,980	7.25
Total or average	1,260	6,940	5.51
Chemical and metallurgical:			
Lime manufacture	(6)	(6)	6.66
Flux stone	(6)	(6)	6.08
Glass manufacture	(6)	(6)	13.21
Total or average	874	5,870	6.72
Special, asphalt fillers or extenders	(7)	(7)	18.59
Other miscellaneous uses and specified uses not listed	49	306	6.24
Unspecified:⁸			
Reported	11,500	60,300	5.23
Estimated	10,500	56,300	5.35
Total or average	22,100	117,000	5.29
Grand total or average	35,600	207,000	5.82

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

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 with "Other fine aggregates."

³Withheld to avoid disclosing company proprietary data; included with "Other coarse and fine aggregates."

⁴Includes pipe bedding.

⁵Withheld to avoid disclosing company proprietary data; included with "Other agricultural uses."

⁶Withheld to avoid disclosing company proprietary data; included in "Total or average."

⁷Withheld to avoid disclosing company proprietary data; included in "Unspecified: Reported."

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

TABLE 3b
IOWA: CRUSHED STONE SOLD OR USED BY PRODUCERS IN 2004, BY USE¹

Use	Quantity (thousand metric tons)	Value (thousands)	Unit value
Construction:			
Coarse aggregate (+1½ inch):			
Macadam	74	\$398	\$5.38
Riprap and jetty stone	102	1,080	10.58
Filter stone	43	273	6.35
Other coarse aggregates	140	695	4.96
Total or average	359	2,450	6.81
Coarse aggregate, graded:			
Concrete aggregate, coarse	694	6,050	8.72
Bituminous aggregate, coarse	166	1,180	7.10
Bituminous surface-treatment aggregate	68	396	5.82
Other graded coarse aggregates	49	299	6.10
Total or average	977	7,930	8.11
Fine aggregate (-¾ inch):			
Stone sand, concrete	130	1,270	9.73
Stone sand, bituminous mix or seal	149	1,190	7.99
Screening, undesignated	433	1,160	2.68
Other fine aggregates	71	431	6.07
Total or average	783	4,050	5.17
Coarse and fine aggregates:			
Graded road base or subbase	971	7,050	7.26
Unpaved road surfacing	2,110	13,600	6.47
Crusher run or fill or waste	66	285	4.32
Roofing granules	W	W	11.86
Other coarse and fine aggregates	1,280	8,310	6.50
Total or average	4,420	29,300	6.62
Agricultural:			
Limestone	446	2,260	5.07
Poultry grit and mineral food	(2)	(2)	6.17
Other agricultural uses	434	3,130	7.20
Total or average	880	5,390	6.12
Chemical and metallurgical:			
Lime manufacture	(3)	(3)	4.96
Flux stone	(3)	(3)	6.22
Glass manufacture	(3)	(3)	13.19
Special, asphalt fillers or extenders	(4)	(4)	19.22
Other miscellaneous uses and specified uses not listed	42	258	6.14
Unspecified:⁵			
Reported	16,100	91,500	5.67
Estimated	12,000	67,000	5.59
Total or average	28,200	159,000	5.63
Grand total or average	36,800	215,000	5.85

W Withheld to avoid disclosing company proprietary data; included with "Other coarse and fine aggregates."

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 with "Other agricultural uses."

³Included in "Grand total or average."

⁴Withheld to avoid disclosing company proprietary data; included in "Unspecified: Reported."

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

TABLE 4a

IOWA: CRUSHED STONE SOLD OR USED BY PRODUCERS IN 2003, BY USE AND DISTRICT¹

(Thousand metric tons and thousand dollars)

Use	District 1		District 2		District 3		District 4	
	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
Construction:								
Coarse aggregate (+1½ inch) ²	--	--	W	W	W	W	W	W
Coarse aggregate, graded ³	--	--	W	W	W	W	1,260	11,400
Fine aggregate (-¾ inch) ⁴	--	--	190	852	--	--	W	W
Coarse and fine aggregate ⁵	--	--	W	W	W	W	2,770	17,100
Other construction materials	--	--	91	738	3	17	162	740
Agricultural ⁶	--	--	W	W	W	W	289	1,770
Chemical and metallurgical ⁷	--	--	--	--	--	--	874	5,870
Special ⁸	--	--	--	--	--	--	(9)	(9)
Other miscellaneous uses	--	--	--	--	--	--	3	20
Unspecified:¹⁰								
Reported	1,060	5,710	1,970	10,600	4,800	25,900	1,830	8,040
Estimated	--	--	3,450	16,700	122	737	3,290	19,100
Total	1,060	5,710	8,570	45,200	5,600	31,100	11,200	68,900
	District 5		District 6		Unspecified districts			
	Quantity	Value	Quantity	Value	Quantity	Value		
Construction:								
Coarse aggregate (+1½ inch) ²	--	--	199	1,620	--	--		
Coarse aggregate, graded ³	--	--	313	2,950	20	176		
Fine aggregate (-¾ inch) ⁴	--	--	W	W	119	554		
Coarse and fine aggregates ⁵	--	--	2,080	15,400	548	3,320		
Other construction materials	--	--	33	206	--	--		
Agricultural ⁶	--	--	W	W	20	92		
Chemical and metallurgical ⁷	--	--	--	--	--	--		
Special ⁸	--	--	--	--	--	--		
Other miscellaneous uses	--	--	46	287	--	--		
Unspecified:¹⁰								
Reported	805	4,310	1,060	5,730	--	--		
Estimated	2,880	14,900	778	4,890	--	--		
Total	3,690	19,200	4,800	32,700	707	4,140		

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

¹Data are rounded to no more than three significant digits; may not add to totals shown.²Includes filter stone, macadam, riprap and jetty stone, and other coarse aggregates.³Includes concrete aggregate (coarse), bituminous aggregate (coarse), bituminous surface-treatment aggregate, railroad ballast, and other graded coarse aggregates.⁴Includes screening (undesignated), stone sand (bituminous mix or seal), stone sand (concrete), and other fine aggregates.⁵Includes crusher run (select material or fill), graded road base or subbase, roofing granules, unpaved road surfacing, and other coarse and fine aggregates.⁶Includes agricultural limestone, poultry grit and mineral food, and other agricultural uses.⁷Includes lime and glass manufacture and flux stone.⁸Includes asphalt fillers or extenders.⁹Withheld to avoid disclosing company proprietary data; included in "Unspecified: Reported."¹⁰Reported and estimated production without a breakdown by end use.

TABLE 4b
IOWA: CRUSHED STONE SOLD OR USED BY PRODUCERS IN 2004, BY USE AND DISTRICT¹

(Thousand metric tons and thousand dollars)

Use	District 1		District 2		District 3		District 4	
	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
Construction:								
Coarse aggregate (+1½ inch) ²	--	--	W	W	W	W	W	W
Coarse aggregate, graded ³	--	--	378	2,520	W	W	W	W
Fine aggregate (-¾ inch) ⁴	--	--	W	W	--	--	W	W
Coarse and fine aggregate ⁵	--	--	1,850	10,100	W	W	803	5,930
Agricultural ⁶	--	--	W	W	W	W	W	W
Chemical and metallurgical ⁷	--	--	--	--	--	--	W	W
Special ⁸	--	--	--	--	--	--	(9)	(9)
Other miscellaneous uses	--	--	--	--	--	--	--	--
Unspecified:¹⁰								
Reported	1,140	6,190	1,830	11,700	5,370	29,200	5,060	28,300
Estimated	--	--	4,100	20,000	--	--	3,800	23,000
Total	1,140	6,190	8,960	47,800	6,020	33,300	11,300	68,500
Use	District 5		District 6		Unspecified districts			
	Quantity	Value	Quantity	Value	Quantity	Value		
Construction:								
Coarse aggregate (+1½ inch) ²	--	--	W	W	--	--		
Coarse aggregate, graded ³	--	--	W	W	57	341		
Fine aggregate (-¾ inch) ⁴	--	--	W	W	109	641		
Coarse and fine aggregates ⁵	--	--	W	W	627	3,690		
Agricultural ⁶	--	--	W	W	22	134		
Chemical and metallurgical ⁷	--	--	--	--	--	--		
Special ⁸	--	--	--	--	--	--		
Other miscellaneous uses	--	--	42	258	--	--		
Unspecified:¹⁰								
Reported	873	4,670	1,870	11,400	--	--		
Estimated	2,600	14,000	1,500	10,000	--	--		
Total	3,470	18,900	5,050	35,400	815	4,800		

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

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

²Includes filter stone, macadam, riprap and jetty stone, and other coarse aggregates.

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

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

⁵Includes crusher run or fill or waste, graded road base or subbase, roofing granules, unpaved road surfacing, and other coarse and fine aggregates.

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

⁷Includes lime and glass manufacture and flux stone.

⁸Includes asphalt fillers or extenders.

⁹Withheld to avoid disclosing company proprietary data; included in "Unspecified: Reported."

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

TABLE 5a
IOWA: CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN 2003,
BY MAJOR USE CATEGORY¹

Use	Quantity (thousand metric tons)	Value (thousands)	Unit value
Concrete aggregate (including concrete sand)	1,980	\$9,590	\$4.83
Plaster and gunitite sands	99	419	4.22
Concrete products (blocks, bricks, pipe, decorative, etc.)	27	112	4.11
Asphaltic concrete aggregates and other bituminous mixtures	251	1,400	5.56
Road base and coverings	1,310	3,660	2.79
Road stabilization (lime)	81	143	1.76
Fill	477	1,710	3.58
Snow and ice control	34	145	4.30
Other miscellaneous uses ²	108	820	7.62
Unspecified: ³			
Reported	6,270	30,800	4.91
Estimated	2,800	12,000	4.35
Total or average	13,400	61,000	4.54

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

²Includes railroad ballast.

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

TABLE 5b
IOWA: CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN 2004,
BY MAJOR USE CATEGORY¹

Use	Quantity (thousand metric tons)	Value (thousands)	Unit value
Concrete aggregate (including concrete sand)	2,570	\$10,900	\$4.24
Plaster and gunitite sands	93	680	7.31
Concrete products (blocks, bricks, pipe, decorative, etc.)	34	197	5.77
Asphaltic concrete aggregates and other bituminous mixtures	272	1,110	4.06
Road base and coverings ²	1,900	4,870	2.56
Fill	502	1,600	3.18
Snow and ice control	51	178	3.51
Other miscellaneous uses	32	509	16.16
Unspecified: ³			
Reported	7,480	35,100	4.70
Estimated	4,200	19,000	4.54
Total or average	17,100	74,300	4.33

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

²Includes road and other stabilization (lime).

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

TABLE 6a
IOWA: CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN 2003, BY USE AND DISTRICT^{1,2}

(Thousand metric tons and thousand dollars)

Use	District 1		District 2		District 3 and 5	
	Quantity	Value	Quantity	Value	Quantity	Value
Concrete aggregate (including concrete sand)	287	1,640	395	1,950	187	1,030
Concrete products (blocks, bricks, pipe, decorative, etc.) ³	24	91	W	W	W	W
Asphaltic concrete aggregates and other bituminous mixtures	--	--	148	855	W	W
Road base and coverings ⁴	712	1,840	488	1,210	112	438
Fill	31	118	92	359	66	196
Snow and ice control	14	49	16	77	3	20
Other miscellaneous uses ⁵	5	28	121	822	91	331
Unspecified: ⁶						
Reported	1,090	6,080	205	1,050	4,520	21,700
Estimated	1,100	4,700	500	2,700	700	2,700
Total	3,310	14,600	1,960	9,040	5,680	26,400
Use	District 4		District 6		Unspecified districts	
	Quantity	Value	Quantity	Value	Quantity	Value
Concrete aggregate (including concrete sand)	621	2,570	494	2,410	--	--
Concrete products (blocks, bricks, pipe, decorative, etc.) ³	29	158	W	W	--	--
Asphaltic concrete aggregates and other bituminous mixtures	W	W	W	W	--	--
Road base and coverings ⁴	W	W	W	W	61	254
Fill	95	251	192	783	--	--
Snow and ice control	--	--	--	--	--	--
Other miscellaneous uses ⁵	9	70	80	464	--	--
Unspecified: ⁶						
Reported	247	938	203	995	--	--
Estimated	120	520	340	1,500	--	--
Total	1,120	4,500	1,310	6,190	61	254

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

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

²Districts 3 and 5 are combined to avoid disclosing company proprietary data.

³Includes plaster and gunite sands.

⁴Includes road and other stabilization (lime).

⁵Includes railroad ballast.

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

TABLE 6b
IOWA: CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN 2004, BY USE AND DISTRICT^{1,2}

(Thousand metric tons and thousand dollars)

Use	District 1		District 2		Districts 3 and 5	
	Quantity	Value	Quantity	Value	Quantity	Value
Concrete aggregate (including concrete sand)	621	2,630	466	2,370	172	1,010
Concrete products (blocks, bricks, pipe, decorative, etc.) ³	22	150	46	214	7	27
Asphaltic concrete aggregates and other bituminous mixtures	W	W	151	646	64	148
Road base and coverings ⁴	855	2,070	778	1,820	163	561
Fill	115	387	70	290	147	510
Snow and ice control	W	W	15	56	W	W
Other miscellaneous uses	76	353	21	246	52	208
Unspecified: ⁵						
Reported	1,950	10,000	243	1,210	4,710	21,600
Estimated	2,200	9,400	400	2,100	780	3,200
Total	5,790	25,100	2,190	8,990	6,090	27,300
Use	District 4		District 6		Unspecified districts	
	Quantity	Value	Quantity	Value	Quantity	Value
Concrete aggregate (including concrete sand)	916	3,060	395	1,850	--	--
Concrete products (blocks, bricks, pipe, decorative, etc.) ³	52	486	--	--	--	--
Asphaltic concrete aggregates and other bituminous mixtures	W	W	--	--	--	--
Road base and coverings ⁴	W	W	W	W	58	238
Fill	89	212	81	198	--	--
Snow and ice control	W	W	--	--	--	--
Other miscellaneous uses	24	297	3	18	--	--
Unspecified: ⁵						
Reported	234	789	345	1,450	--	--
Estimated	210	920	670	3,400	--	--
Total	1,520	5,760	1,490	6,940	58	238

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

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

²Districts 3 and 5 are combined to avoid disclosing company proprietary data.

³Includes plaster and gunite sands.

⁴Includes road and other stabilization (lime).

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