2012–2013 Minerals Yearbook

KENTUCKY [ADVANCE RELEASE]

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U.S. Geological Survey

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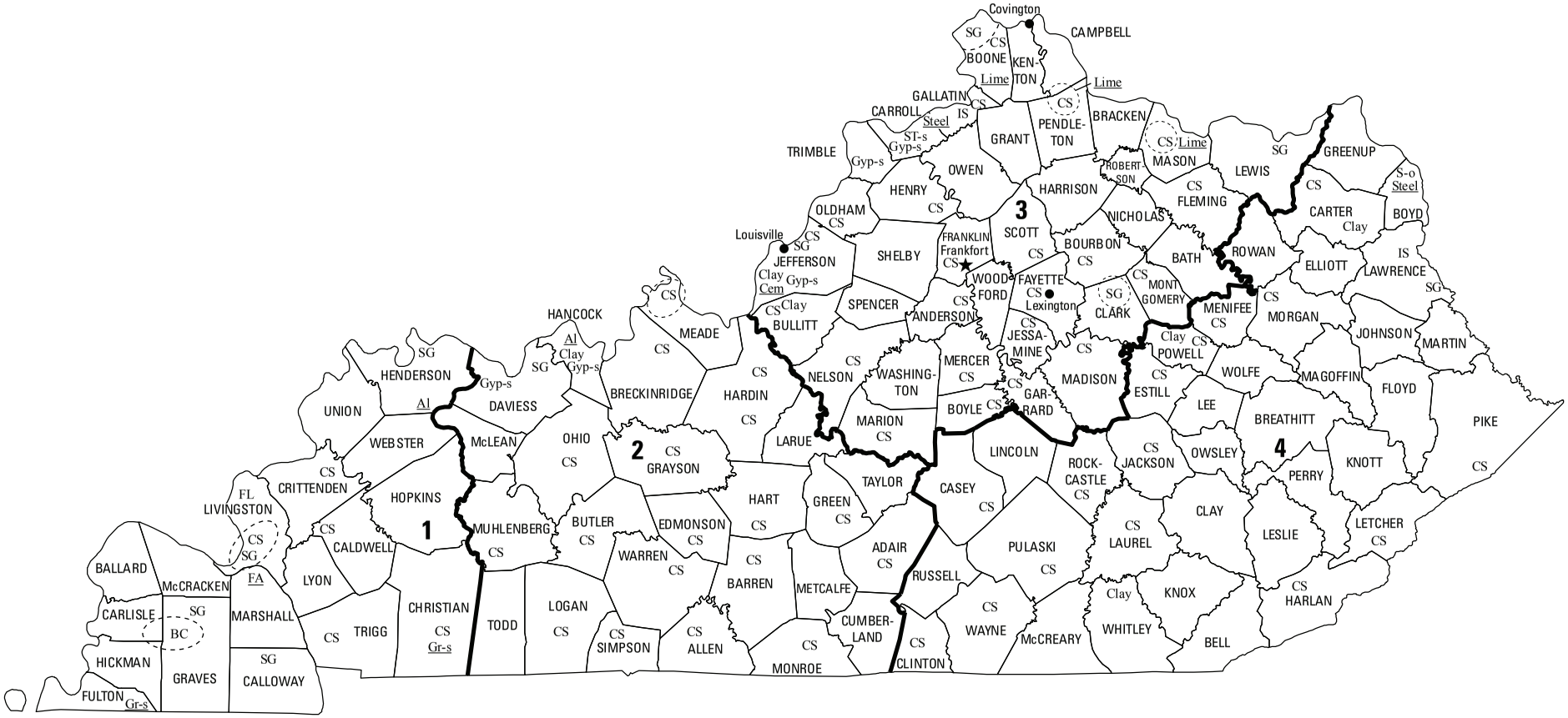
KENTUCKY



LEGEND

County boundary

★ Capital

● City

1 Crushed stone/sand and gravel district boundary

MINERAL SYMBOLS

(Principal producing areas)

Al	Aluminum plant
BC	Ball clay
Cem	Cement plant and quarry
Clay	Common clay
CS	Crushed stone
FA	Ferroalloys plant
FL	Fluorspar
Gr-s	Synthetic graphite plant
Gyp-s	Synthetic gypsum
IS	Industrial sand
Lime	Lime plant
S-o	Sulfur (oil)
SG	Construction sand and gravel
Steel	Steel plant
ST-s	Steel plant - stainless
(dashed oval)	Concentration of mineral operations

0 50 100 Kilometers

Albers equal area projection

Source: Kentucky Geological Survey/U.S. Geological Survey (2012–13).

The Mineral Industry of Kentucky

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

In 2013, the value of nonfuel mineral production[1] (not including steel) in the State of Kentucky was $807 million, 1.1% of the total U.S. nonfuel mineral production, ranking it 28th in the Nation. In 2012, the value was $484 million,[2] 0.6% of the U.S. total nonfuel mineral production, ranking it 27th among the 50 States. In 2013, on a per capita basis, nonfuel mineral production in Kentucky had a value of $184 compared with the national average of $238. In 2012, the per capita value was $111 compared with the national average of $241.

The value of nonfuel mineral production in Kentucky for the years 2006 through 2013 was as follows (in millions of dollars): $814 (2006), $791 (2007), $796 (2008), $702 (2009), $753 (2010), $502[2] (2011), $484[2] (2012), and $807 (2013).

In 2013, there were 1,260 employees in nonfuel mineral mines in Kentucky and 972 in mills and preparation plants. In 2012, the corresponding numbers were 1,242 in nonfuel mineral mines and 1,033 in mills and preparation plants (U.S. Mine Safety and Health Administration, 2013, p. 10; 2014, p. 10). In 2013, the average annual wage in Kentucky for all mining was $70,208 compared with $40,589 for all industries. In 2012, the corresponding figures were $68,444 and $40,205, respectively (National Mining Association, unpub. data, February 4, 2016).

In 2013, on the basis of production quantity, Kentucky was third in the production of lime out of 33 producing States, and fifth in the production of ball clay out of 5 producing States. In 2012, Kentucky was third in the production of lime out of 33 producing States, and fourth in the production of ball clay out of 5 producing States.

In 2013 and 2012, Kentucky also produced common clay, construction and industrial sand and gravel, crushed stone, masonry and portland cements, and natural gemstones.

Commodity Review

The Kentucky Geological Survey[3] prepared a report on the nonfuel mineral industry of the State of Kentucky covering activities in 2012 and 2013 from which the following information has been extracted. These data may differ from U.S. Geological Survey (USGS) data, which are based on company responses to USGS surveys and estimation for nonrespondents. The USGS withheld some data to avoid disclosing company proprietary data.

All metal production in the State, especially that of raw steel, was the result of the processing of materials acquired from other domestic and foreign sources.

Metals

Metal processing activity was as follows:

- A new company, Horizon Steel Co., announced plans to manufacture a high strength steel at Bowling Green, Warren County, with plant construction to start in 2015. Horizon Steel is expected to be the sole supplier and processor for Bilstein Group, a German company that is also planning to locate in Bowling Green (Area Development, 2013).
- Freedom Metals Inc., La Grange, Oldham County, launched a new stainless steel and alloy scrap processing division in 2013 to diversify into niche fields in the scrap market.
- Various steel products such as flat, rolled, coiled, tubular, and construction steel were produced at several plants in the State for use in the automotive, truck, construction, and manufacturing industries. Many of these steel products were stainless, galvanized, and ferro- and (or) manganese alloys.
- Kentucky was a significant producer of primary aluminum from raw material obtained outside the State.

Industrial Minerals

Industrial minerals mining activity was as follows:

- Drakes Creek Holding LLC received mine permits for a new limestone mine in Simpson County, which was immediately challenged by opposition groups (EQW Staff, 2013).
- Boonesboro Quarry, Madison County, sought a zone change and an expansion of the current limestone operation into adjacent Clark County, but public opposition stalled its efforts.
- Glass Aggregates, LLC, in Barren County, upgraded its operations.
- Synthetic gypsum for wallboard was produced as a byproduct at several of the Kentucky coal-fired power plants. Some of the coal-fired plants began switching to natural gas, which will reduce future supplies of synthetic gypsum.
- Synthetic graphite was produced in several Kentucky counties.
- H and G Limestone Products LLC invested in a limestone processing plant in Lyon County, producing a

[1]The 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 USGS mineral production data published in this chapter are those available as of February 2016. Data in this report are rounded to three significant digits and percentages are calculated from unrounded data. All USGS Mineral Industry Surveys and USGS Minerals Yearbook chapters—mineral commodity, State, and country—can be retrieved over the Internet at http://minerals.usgs.gov/minerals.

[2]Partial total; excludes values that must be withheld to avoid disclosing company proprietary data. Total for 2013 is complete.

[3]Warren H. Anderson, Kentucky Geological Survey, provided the State nonfuel mineral industry information.

fine-grained limestone for roofing shingles and animal food supplements.

- Vulcan Materials' underground limestone mine in southeast Fayette County was denied an expansion request by the Kentucky Board of Adjustment.
- Unique Granite & Marble expanded its operations in Owensboro, Daviess County, making countertops for homebuilders and remodelers.
- A new remote-controlled calcium carbide furnace was installed at the Carbide Industries LLC's Louisville plant, Jefferson County.
- Freshwater pearl and Kentucky agate (a semiprecious stone) were produced in some Kentucky counties.

Exploration

Mineral exploration activity was as follows:

- In 2012–13, Hastie Mining and Fluorspar and Moodie Minerals Inc. completed permitting and began mining fluorite on the Klondike Mine II site in Livingston County.
- During 2012–13, KGS responded to numerous inquiries related to sands for hydraulic fracturing of oil and gas formations (frac sand) in the State and began evaluation of the potential of the State's sand deposits for frac sand applications.

References Cited

Area Development, 2013, Horizon Steel plans $15 million Bowling Green, Kentucky, manufacturing plant: Area Development press release, November 20. (Accessed April 19, 2016, at http://www.areadevelopment.com/newsItems/11-20-2013/horizon-steel-facility-bowling-green-kentucky348904.shtml.)

EQW Staff, 2013, Drakes Creek Holding Company receives conditional permit for proposed limestone quarry in Kentucky: Aggregates Manager, August 12. (Accessed May 23, 2016, at http://www.aggman.com/drakes-creek-holding-company-receives-conditional-permit-for-proposed-limestone-quarry-in-kentucky.)

U.S. Mine Safety and Health Administration, [2013], Mine injury and worktime, quarterly, January–December 2012, Final, closeout edition, 33 p. (Accessed February 4, 2016, at http://arlweb.msha.gov/Stats/Part50/WQ/MasterFiles/MIWQ%20Master_20125.pdf.)

U.S. Mine Safety and Health Administration, [2014], Mine injury and worktime, quarterly, January–December 2013, Final, closeout edition, 34 p. (Accessed February 4, 2016, at http://arlweb.msha.gov/Stats/Part50/WQ/MasterFiles/MIWQ%20Master_20135.pdf.)

TABLE 1
NONFUEL MINERAL PRODUCTION IN KENTUCKY[1, 2]

(Thousand metric tons and thousand dollars)

Mineral	2011		2012		2013	
	Quantity	Value	Quantity	Value	Quantity	Value
Clays, common	328	6,430	271	4,390	W	(3)
Gemstones, natural	NA	11	NA	11	NA	11
Sand and gravel, construction	6,810 r	32,500 r	6,610	32,400	8,110	42,800
Stone, crushed	48,000 r	463,000 r	44,400	447,000	46,300	452,000
Combined values of cement, clays (ball), lime, sand and gravel [industrial (2013)]. and value indicated by footnote 3	XX	W	XX	W	XX	312,000
Total	XX	502,000 r	XX	484,000	XX	807,000

[r]Revised. NA Not available. W Withheld to avoid disclosing company proprietary data; excluded from total. XX Not applicable.
[1]Production as measured by mine shipments, sales, or marketable production (including consumption by producers).
[2]Data are rounded to three significant digits; may not add to totals shown.
[3]Withheld to avoid disclosing company proprietary data; included in "Combined values" data.

TABLE 2

KENTUCKY: CRUSHED STONE SOLD OR USED IN THE UNITED STATES, BY TYPE[1]

Type	2012 Number of quarries	2012 Quantity (thousand metric tons)	2012 Value (thousands)	2012 Unit value	2013 Number of quarries	2013 Quantity (thousand metric tons)	2013 Value (thousands)	2013 Unit value
Limestone[2]	87	44,200	$445,000	$10.07	85	46,100	$451,000	$9.78
Miscellaneous stone	2	199	2,060	10.32	2	190	1,910	10.08
Total or average	XX	44,400	447,000	10.07	XX	46,300	452,000	9.78

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 kinds of stone.

TABLE 3

KENTUCKY: CRUSHED STONE SOLD OR USED BY PRODUCERS BY USE[1]

Use	2012 Quantity (thousand metric tons)	2012 Value (thousands)	2012 Unit value	2013 Quantity (thousand metric tons)	2013 Value (thousands)	2013 Unit value
Construction:						
Coarse aggregate (+1½ inch):						
Riprap and jetty stone	238	$2,580	$10.82	192	$2,220	$11.52
Filter stone	93	726	7.80	246	2,030	8.24
Unspecified coarse aggregate	487	5,310	10.89	747	6,390	8.56
Coarse aggregate, graded:						
Concrete aggregate, coarse	566	5,390	9.53	770	7,660	9.95
Bituminous aggregate, coarse	406	4,360	10.74	574	6,330	11.03
Bituminous surface-treatment aggregate	19	215	11.29	W	W	W
Railroad ballast	104	930	8.95	68	652	9.58
Unspecified graded coarse aggregate	3,220	35,200	10.93	3,470	37,600	10.85
Fine aggregate (-⅜ inch):						
Stone sand, concrete	108	1,170	10.85	65	594	9.18
Stone sand, bituminous mix or seal	211	2,450	11.60	363	3,920	10.80
Screening, undesignated	74	522	7.05	127	1,290	10.12
Unspecified fine aggregate	1,130	12,400	10.95	1,040	10,100	9.72
Coarse and fine aggregates:						
Graded road base or subbase	2,440	21,200	8.71	2,510	20,900	8.33
Unpaved road surface	W	W	W	502	5,440	10.83
Crusher run or fill or waste	21	188	8.96	46	403	8.79
Unspecified coarse and fine aggregates	3,930	43,700	11.13	4,080	38,700	9.49
Unspecified and other construction materials	4	27	6.69	3	18	6.40
Agricultural:						
Agricultural Limestone	452	3,360	7.44	397	3,060	7.71
Unspecified and other agricultural uses	W	W	W	--	--	--
Chemical and metallurgical:						
Lime manufacture	W	W	W	W	W	W
Flux stone	W	W	W	W	W	W
Sulfur oxide removal	W	W	W	W	W	W
Special:						
Other fillers or extenders	3	18	6.10	--	--	--
Other miscellaneous uses and specified uses not listed						
Unspecified:[2]						
Reported	3,800	39,200	10.30	5,720	59,200	10.35
Estimated	26,400	261,000	9.91	24,100	235,000	9.73
Total or average	44,400	447,000	10.07	46,300	452,000	9.78

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

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

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

TABLE 4

KENTUCKY: CRUSHED STONE SOLD OR USED BY PRODUCERS IN 2012, 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 (+1½ inch)[2]	W	W	91	1,040	122	1,040
Coarse aggregate, graded[3]	931	9,050	992	10,500	1,180	12,100
Fine aggregate (-⅜ inch)[4]	W	W	392	4,060	141	1,520
Coarse and fine aggregates[5]	1,310	12,400	1,190	11,300	W	W
Other construction materials	--	--	--	--	--	--
Agricultural[6]	W	W	165	935	43	327
Chemical and metallurgical[7]	--	--	W	W	W	W
Special[8]	--	--	--	--	3	18
Other miscellaneous uses and specified uses not listed	--	--	--	--	--	--
Unspecified:[9]						
Reported	--	--	1,030	10,600	900	9,280
Estimated	7,260	69,500	6,500	65,700	10,900	109,000
Total	10,400	99,000	10,600	107,000	16,800	171,000

Use	District 4	
	Quantity	Value
Construction:		
Coarse aggregate (+1½ inch)[2]	307	3,720
Coarse aggregate, graded[3]	1,220	14,400
Fine aggregate (-⅜ inch)[4]	625	7,640
Coarse and fine aggregates[5]	760	8,800
Other construction materials	4	27
Agricultural[6]	31	222
Chemical and metallurgical[7]	--	--
Special[8]	--	--
Other miscellaneous uses and specified uses not listed	--	--
Unspecified:[9]		
Reported	1,880	19,300
Estimated	1,740	16,900
Total	6,570	71,000

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]Includes riprap and jetty stone, filter stone, and unspecified coarse aggregate.

[3]Includes concrete aggregate (coarse), bituminous aggregate (coarse), bituminous surface-treatment aggregate, railroad ballast, and unspecified graded coarse aggre

[4]Includes stone sand (concrete), stone sand (bituminous mix or seal), screening (undesignated), and unspecified fine aggregate.

[5]Includes graded road base or subbase, unpaved road surface, crusher run, roofing granules, and unspecified coarse and fine aggregates.

[6]Includes agricultural limestone and other agricultural uses.

[7]Includes lime manufacture, flux stone, and sulfur oxide removal.

[8]Includes other fillers or extenders.

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

TABLE 5

KENTUCKY: CRUSHED STONE SOLD OR USED BY PRODUCERS IN 2013, 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 (+1½ inch)[2]	610	4,360	104	1,020	157	1,490
Coarse aggregate, graded[3]	889	8,300	977	10,600	1,660	17,800
Fine aggregate (-⅜ inch)[4]	469	4,080	417	4,020	345	3,700
Coarse and fine aggregates[5]	2,230	18,600	1,350	12,100	2,980	28,500
Other construction materials	W	W	W	W	--	--
Agricultural[6]	W	W	110	796	W	W
Chemical and metallurgical[7]	--	--	W	W	W	W
Special	--	--	--	--	--	--
Other miscellaneous uses and specified uses not listed	--	--	--	--	--	--
Unspecified:[8]						
Reported	--	--	1,030	10,600	900	9,280
Estimated	7,260	69,500	6,470	65,400	13,200	133,000
Total	10,400	99,000	10,600	106,000	19,200	195,000

Use	District 4	
	Quantity	Value
Construction:		
Coarse aggregate (+1½ inch)[2]	314	3,760
Coarse aggregate, graded[3]	1,490	16,900
Fine aggregate (-⅜ inch)[4]	359	4,070
Coarse and fine aggregates[5]	576	5,230
Other construction materials	W	W
Agricultural[6]	34	269
Chemical and metallurgical[7]	--	--
Special	--	--
Other miscellaneous uses and specified uses not listed	--	--
Unspecified:[8]		
Reported	2,730	29,500
Estimated	1,880	18,100
Total	7,380	78,900

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 riprap and jetty stone, filter stone, and unspecified coarse aggregate.

[3]Includes concrete aggregate (coarse), bituminous aggregate (coarse), bituminous surface-treatment aggregate, railroad ballast, and unspecified graded coarse aggre

[4]Includes stone sand (concrete), stone sand (bituminous mix or seal), screening (undesignated), and unspecified fine aggregate.

[5]Includes graded road base or subbase, unpaved road surface, crusher run, roofing granules, and unspecified coarse and fine aggregates.

[6]Includes agricultural limestone and other agricultural uses.

[7]Includes lime manufacture, flux stone, and sulfur oxide removal.

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

TABLE 6
KENTUCKY: CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN 2012,
BY MAJOR USE CATEGORY[1]

Use	Quantity (thousand metric tons)	Value (thousands)	Unit value
Concrete aggregate and concrete products[2]	3,550	$17,800	$5.01
Asphaltic concrete aggregates and other bituminous mixtures	393	1,840	4.68
Fill	228	709	3.11
Other miscellaneous uses[3]	43	429	9.98
Unspecified:[4]			
Reported	1,630	7,910	4.85
Estimated	764	3,750	4.91
Total or average	6,610	32,400	4.90

[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 golf course.
[4]Reported and estimated production without a breakdown by end use.

TABLE 7
KENTUCKY: CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN 2013,
BY MAJOR USE CATEGORY[1]

Use	Quantity (thousand metric tons)	Value (thousands)	Unit value
Concrete aggregates (including concrete sand)[2]	4,210	$23,400	$5.56
Asphaltic concrete aggregates and road base materials[3]	725	3,210	4.43
Fill	227	1,070	4.69
Other miscellaneous uses	14	173	12.36
Unspecified:[4]			
Reported	606	3,330	5.49
Estimated	2,330	11,600	4.98
Total or average	8,110	42,800	5.28

[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 (lime).
[4]Reported and estimated production without a breakdown by end use.

TABLE 8

KENTUCKY: CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN 2012, BY USE AND DISTRICT[1]

(Thousand metric tons and thousand dollars)

Use	District 1		District 2		District 3	
	Quantity	Value	Quantity	Value	Quantity	Value
Concrete aggregate and concrete products[2]	W	W	8	70	W	W
Asphaltic concrete aggregates and other bituminous mixtures	W	W	3	25	W	W
Fill	31	97	6	22	174	527
Other miscellaneous uses[3]	42	417	1	12	--	--
Unspecified:[4]						
Reported	--	--	--	--	1,630	7,910
Estimated	251	1,230	369	1,810	145	709
Total	2,870	11,900	386	1,940	3,340	18,500

Use	District 4	
	Quantity	Value
Concrete aggregate and concrete products[2]	--	--
Asphaltic concrete aggregates and other bituminous mixtures	--	--
Fill	17	63
Other miscellaneous uses[3]	--	--
Unspecified:[4]		
Reported	--	--
Estimated	--	--
Total	17	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 plaster and gunite sands.

[3]Includes golf course.

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

TABLE 9

KENTUCKY: CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN 2013, BY USE AND DISTRICT[1]

(Thousand metric tons and thousand dollars)

Use	District 1		District 2		District 3	
	Quantity	Value	Quantity	Value	Quantity	Value
Concrete aggregates (including concrete sand)[2]	W	W	W	W	W	W
Asphaltic concrete aggregates and road base materials[3]	W	W	W	W	W	W
Fill	--	--	6	14	189	736
Other miscellaneous uses	--	--	2	15	12	158
Unspecified:[4]						
Reported	--	--	482	2,340	124	983
Estimated	191	1,060	170	942	2	9,850
Total	2,960	13,600	1,400	6,840	3,720	22,000

Use	District 4	
	Quantity	Value
Concrete aggregate and concrete products[2]	6	26
Asphaltic concrete aggregates and road base materials[3]	--	--
Fill	32	315
Other miscellaneous uses	--	--
Unspecified:[4]		
Reported	--	--
Estimated	--	--
Total	38	341

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 plaster and gunite sands.

[3]Includes road and other stabilization (lime).

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