

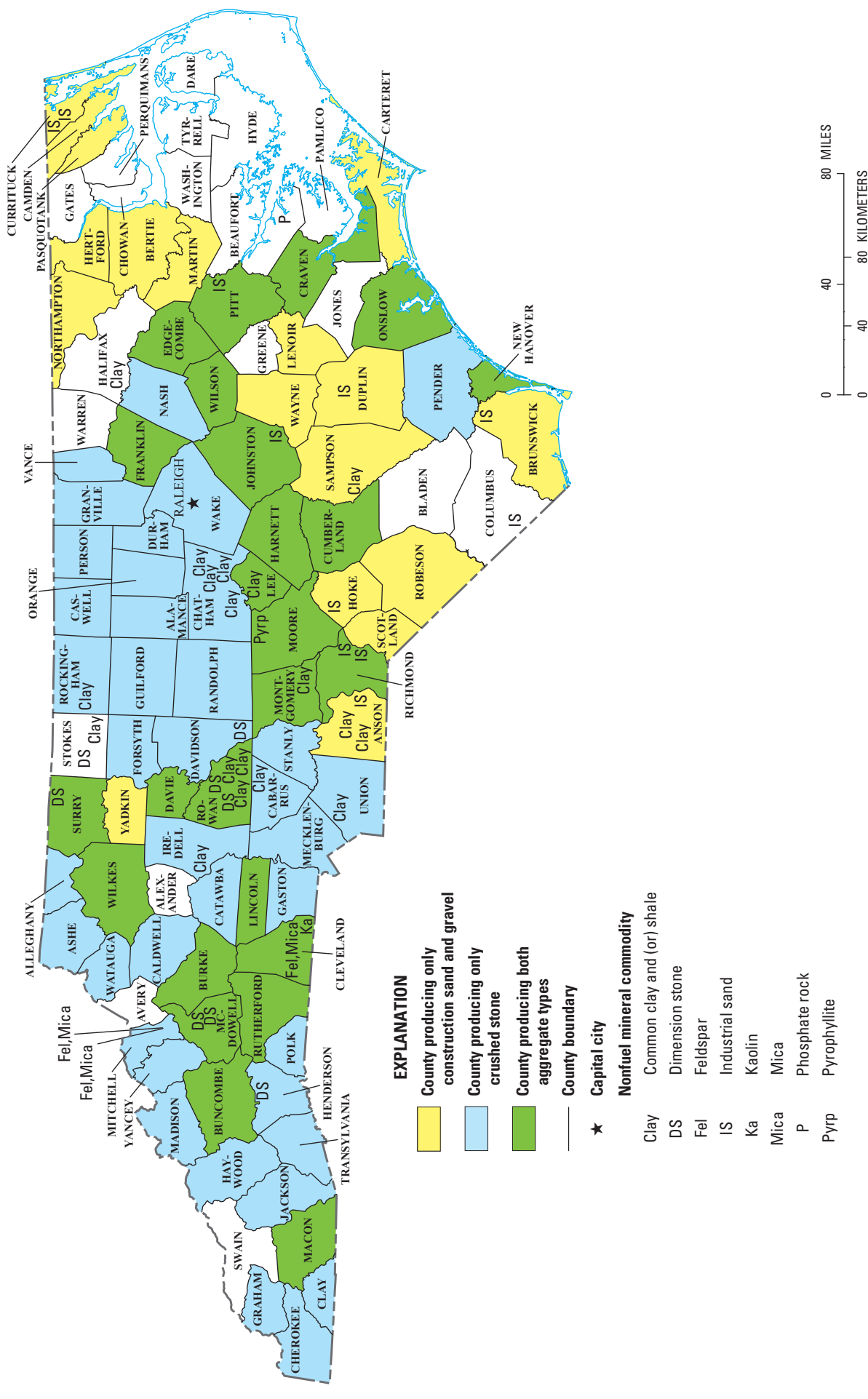


# 2014 Minerals Yearbook

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**NORTH CAROLINA [ADVANCE RELEASE]**

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Base from U.S. Geological Survey digital data  
 Albers Equal-Area Conic projection

**Figure 1.** Map showing major nonfuel-mineral-producing areas in North Carolina in 2014. Sources: North Carolina Geological Survey and U.S. Geological Survey.

# THE MINERAL INDUSTRY OF NORTH CAROLINA

By Robert M. Callaghan

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

In 2014, the partial value of the nonfuel mineral production<sup>1</sup> in the State of North Carolina (fig. 1) increased to \$857 million,<sup>2</sup> a 3% increase from the State's revised nonfuel mineral production partial value of \$835 million<sup>2</sup> in 2013 (table 1). Crushed stone was the leading nonfuel mineral commodity; approximately 70% consisted of granite, 17% was classified as traprock, and 6% was limestone. Smaller quantities of other types, such as dolomite and slate, were also produced. Other major mineral commodities mined in North Carolina included construction sand and gravel, dimension stone, industrial sand and gravel, and phosphate rock. North Carolina was an important feldspar producer, ranking first of seven producing States in production of feldspar, and was the only U.S. producer of andalusite and pyrophyllite. Several companies (table 3) mined common clay in North Carolina, mainly for brick. In 2014, North Carolina ranked 23d in nonfuel mineral production value among the 50 States, and the per capita value of nonfuel mineral production rose to \$86 compared with a national average of \$252. However, the total number of active mines and employment at mines decreased in 2014 from 2013 (table 2).

## Events, Trends, and Issues

With crushed stone as the leading mineral commodity in the State, the total nonfuel mineral commodity value was closely tied to construction industry activity. In North Carolina, the nonfuel mineral production value began to slowly rise after reaching a low point in 2009, with increased unit prices for crushed stone contributing to a continued increase in the State's nonfuel mineral production value despite a decrease in production quantity (fig. 2). There was a small decrease in the housing construction market in 2014 to 49,911 housing unit completions as compared with 51,290 in 2013, though this was far below the peak of 99,979 in 2006 (U.S. Census Bureau, undated). Crushed stone production reached a peak in 2006, at 78.8 million metric tons (Mt) compared with 46.2 Mt in 2014, but was on an upward trend since 2009.

Among all mineral commodities produced in North Carolina, the largest percentage increase in production quantity was of industrial sand and gravel, with increased demand across the United States in 2014 owing to the increased use in

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<sup>1</sup>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 June 2017. 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>.

<sup>2</sup>Partial total; excludes values that must be withheld to avoid disclosing company proprietary data.

hydraulic fracturing. Production value only increased by 38% in North Carolina, however, compared with 138% in the United States. Other States produced the most highly sought-after industrial sand for this end use (Benson and Wilson, 2015, p. 1); historically much of North Carolina's industrial sand was used in filtration, glassmaking, and recreational uses such as for golf courses. High-purity quartz was mined in the State for use in the semiconductor, solar, optical, and lighting industries; this specialty quartz material, with prices that could reach \$5,000 per metric ton (Dolley, 2015, p. 66.3), was not included in the industrial sand and gravel survey.

Cement was last produced in North Carolina in 1982 at the Castle Hayne cement plant, which had used the energy-intensive wet grinding process. In 2014, the plant's owner, Carolina Cement Co., a subsidiary of Titan America LLC, announced plans for a new bagging facility on the site that would operate in conjunction with the existing cement terminal and new air quality permit (Titan America LLC, 2014). The air quality permit had been received in 2012 while planning was underway for a new cement plant to replace the old one; however, the U.S. Army Corps of Engineers indicated in 2014 that the next step of contacting them to continue the Environmental Impact Statement had not been taken. It was estimated that approximately 600 acres of wetlands and U.S. waters could be affected, and there were concerns related to fishery resources, wetland impacts, and air quality (U.S. Army Corp of Engineers, 2014).

## Aggregates by State and End Use

A companion dataset, "Aggregates by State and End Use," replaces the discrete aggregate tables that were included in the individual State chapters prior to 2014 and is available on the State Minerals Statistics and Information web page at <https://minerals.usgs.gov/minerals/pubs/state/>. This dataset is updated annually.

## References Cited

- Benson, M.E., and Wilson, A.B., 2015, Frac sand in the United States—A geological and industry overview: U.S. Geological Survey Open-File Report 2015-1107, 78 p. (Accessed April 4, 2018, at <https://dx.doi.org/10.3133/ofr20151107>.)
- Dolley, T.P., 2016, Silica [advance release], *in* Metals and minerals: U.S. Geological Survey Minerals Yearbook 2014, v. 1, p. 66.1–66.18. (Accessed April 6, 2018, at <https://minerals.usgs.gov/minerals/pubs/commodity/silica/myb1-2014-silic.pdf>.)
- Titan America LLC, 2014, CCC applies for building permit: Titan America LLC press release, June 6. (Accessed June 29, 2017, at [http://www.titanamerica.com/our\\_company/newsroom/ccc\\_applies\\_for\\_building\\_permit/default.aspx](http://www.titanamerica.com/our_company/newsroom/ccc_applies_for_building_permit/default.aspx).)

U.S. Army Corps of Engineers, 2014, Carolinas Cement Company, LLC—Cement manufacturing facility and quarry near Castle Hayne, New Hanover, North Carolina (regulatory): Wilmington District, NC, U.S. Army Corps of Engineers Congressional Fact Sheet, February 5, 2 p. (Accessed June 29, 2017, at [http://www.saw.usace.army.mil/Portals/59/docs/review\\_plans/2014%20Congressional%20Fact%20Sheets/50-%20Carolinas%20Cement%20Co%20%20LLC%20February%2014.pdf](http://www.saw.usace.army.mil/Portals/59/docs/review_plans/2014%20Congressional%20Fact%20Sheets/50-%20Carolinas%20Cement%20Co%20%20LLC%20February%2014.pdf).)

U.S. Census Bureau, [undated], Number of new residential housing units by State (total): U.S. Census Bureau, 51 p. (Accessed July 16, 2016, at <http://www.census.gov/construction/bps/xls/annualhistorybystatebystructure.xls>.)

TABLE 1  
NONFUEL MINERAL PRODUCTION IN NORTH CAROLINA<sup>1,2,3</sup>

(Thousand metric tons and thousand dollars)

Mineral	2012		2013		2014	
	Quantity	Value	Quantity	Value	Quantity	Value
Clays, common clay	732	20,100	727	20,000	799	17,500
Gemstones, natural <sup>c</sup>	NA	2,060	NA	371	NA	235
Sand and gravel:						
Construction	7,310 <sup>r</sup>	43,600 <sup>r</sup>	7,390 <sup>r</sup>	49,900 <sup>r</sup>	7,340	48,800
Industrial	1,230	30,400	1,290	30,700	2,730	42,300
Stone:						
Crushed	41,100	615,000	46,600	715,000	46,200	727,000
Dimension	53	8,480	47	19,600	44	20,700
Combined values of andalusite, clays (kaolin), feldspar, mica (crude), phosphate rock, pyrophyllite (crude)	XX	W	XX	W	XX	W
Total	XX	720,000 <sup>r</sup>	XX	835,000 <sup>r</sup>	XX	857,000

<sup>c</sup>Estimated. <sup>r</sup>Revised. NA Not available. W Withheld to avoid disclosing company proprietary data; excluded from "Total." XX Not applicable.

<sup>1</sup>Includes data available through June 2017.

<sup>2</sup>Production as measured by mine shipments, sales, or marketable production (including consumption by producers).

<sup>3</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

TABLE 2  
MINING ACTIVITY IN NORTH CAROLINA

Mining activity	2012	2013	2014
State rank <sup>1</sup>	25	22	23
Employment, number: <sup>2</sup>			
Nonfuel mineral mines	1,808	1,675	1,595
Mills and plants	1,201	1,159	1,163
Number of nonfuel mineral mines <sup>2</sup>	262	264	254
Number of mills and plants <sup>2</sup>	112	114	112
Average annual wage, all mining <sup>3</sup>	dollars per year	43,919	45,368
Average annual wage, all industries <sup>3</sup>	do.	43,039	43,758
Per capita value <sup>4</sup>	dollars per person	74	85
National per capita value <sup>1</sup>	do.	241	236
do. Ditto.			

<sup>1</sup>Based on unadjusted State total value.

<sup>2</sup>Source: U.S. Mine Safety and Health Administration.

<sup>3</sup>Source: National Mining Association.

<sup>4</sup>Based on partial State total value to avoid disclosing company proprietary data.

TABLE 3  
STRUCTURE OF THE NONFUEL MINERAL INDUSTRY IN NORTH CAROLINA

(Nonfuel-mineral-producing companies, not including aggregate producers)

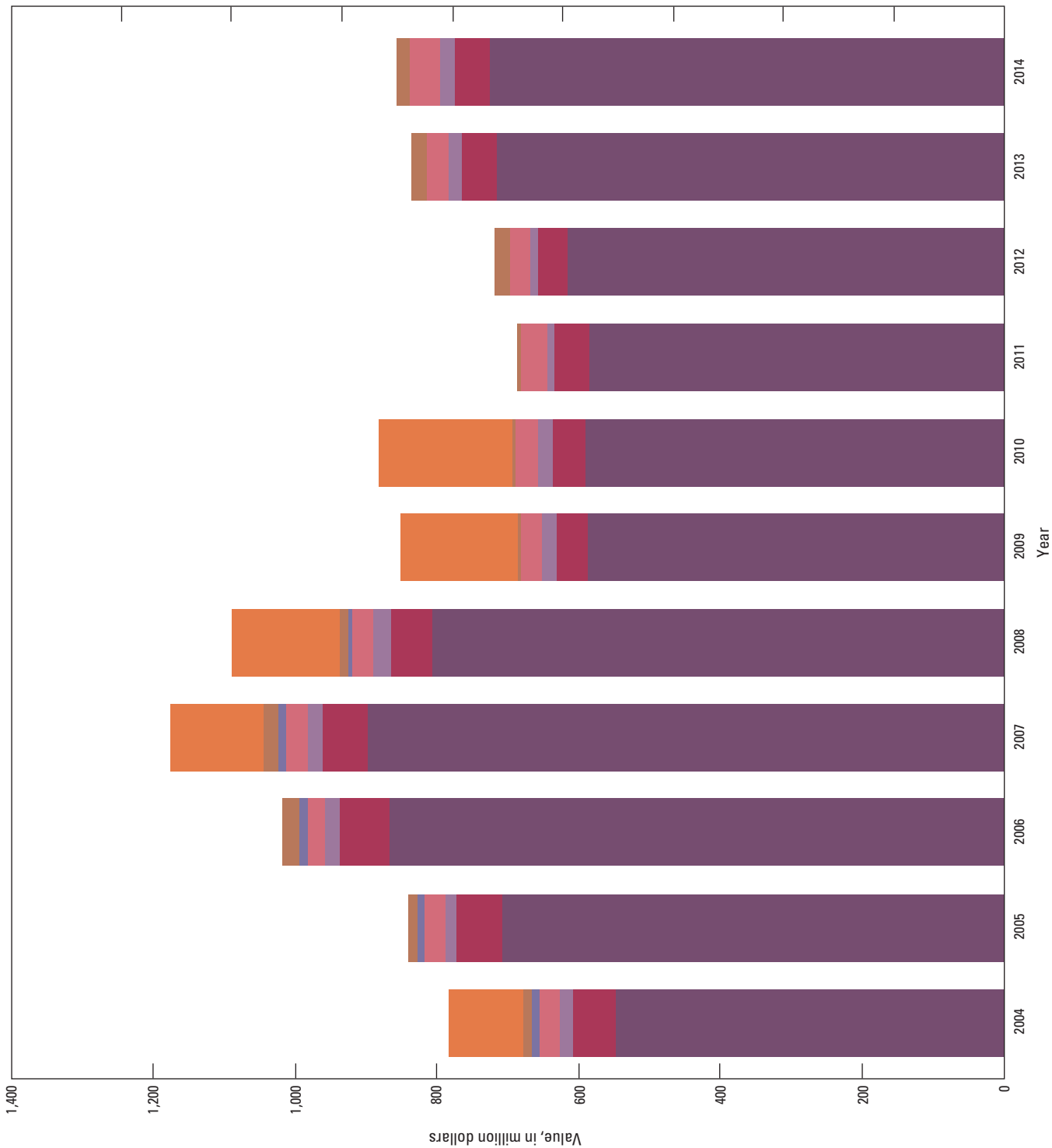
Commodity	Company	County
Clays:		
Common clay and (or) shale	Boral Bricks Inc.	Rowan
Do.	Cunningham Brick Company	Davidson
Do.	General Shale Brick, Inc.	Chatham and Lee
Do.	Hammill Construction Co, Inc.	Cabarrus
Do.	Hanson Brick East LLC	Anson, Chatham, Guilford, Sampson, and Union
Do.	Lee Brick & Tile Co.	Lee
Do.	Nash Brick Co, Inc.	Halifax
Do.	Pine Hall Brick Company, Inc.	Rockingham and Stokes
Do.	Statesville Brick Co.	Iredell and Rowan
Do.	Taylor Clay Prod Co.	Montgomery and Rowan
Do.	Triangle Brick Co.	Anson
Kaolin	Kings Mountain Minerals Inc. (IMERYS S.A.)	Cleveland
Feldspar, mica	do.	Do.
Feldspar, mica, quartz	The Quartz Corp, USA	Mitchell
Do.	Unimin Corp.	Avery and Mitchell
Gemstones <sup>1</sup>	Various	Various
Phosphate rock	PCS Phosphate Co., Inc.	Beaufort
Pyrophyllite	Standard Mineral Co., Inc.	Moore
Sand and gravel, industrial	Ashley Heights Sand Co.	Hoke
Do.	B & M Prince Development Corp.	Columbus
Do.	B. V. Hedrick Gravel and Sand Co.	Anson
Do.	Blue Water Sand & Gravel Inc	Johnston
Do.	Currituck Sand, Inc.	Currituck
Do.	Duplin Minerals Co.	Duplin
Do.	Elbow Road Farm, Inc.	Currituck
Do.	Landsdown Mining Corp.	Brunswick
Do.	Pea Creek Mine LLC	Pitt
Do.	Southern Products & Silica Co.	Richmond
Do.	Unimin Corp.	Do.
Stone, dimension	Appalachian Stone Co.	McDowell
Do.	Blue Ridge Mountain Stone, LLC	Do.
Do.	Boyd Stone & Quarries, Inc.	Do.
Do.	Carolina Quarries Inc	Rowan
Do.	J R Stone Sales Inc	Henderson
Do.	Jacob's Creek Stone Co., Inc.	Davidson
Do.	North Carolina Granite Corp.	Surry

Do., do. Ditto.

<sup>1</sup>Most natural gemstone producers in the United States are small businesses that are widely dispersed and operate independently.

**EXPLANATION**

- Other
- Clays (common clay)
- Mica (crude)
- Sand and gravel (industrial)
- Stone (dimension)
- Sand and gravel (construction)
- Stone (crushed)



**Figure 2.** The production value of nonfuel mineral commodities from 2004 through 2014 in North Carolina. Values less than \$5 million are not shown. "Other" includes the "Combined values" data listed in table 1 in this and (or) previous years. For a complete list of nonfuel mineral commodities and production values for all States, please refer to the Statistical Summary chapter (tables 5, 6).