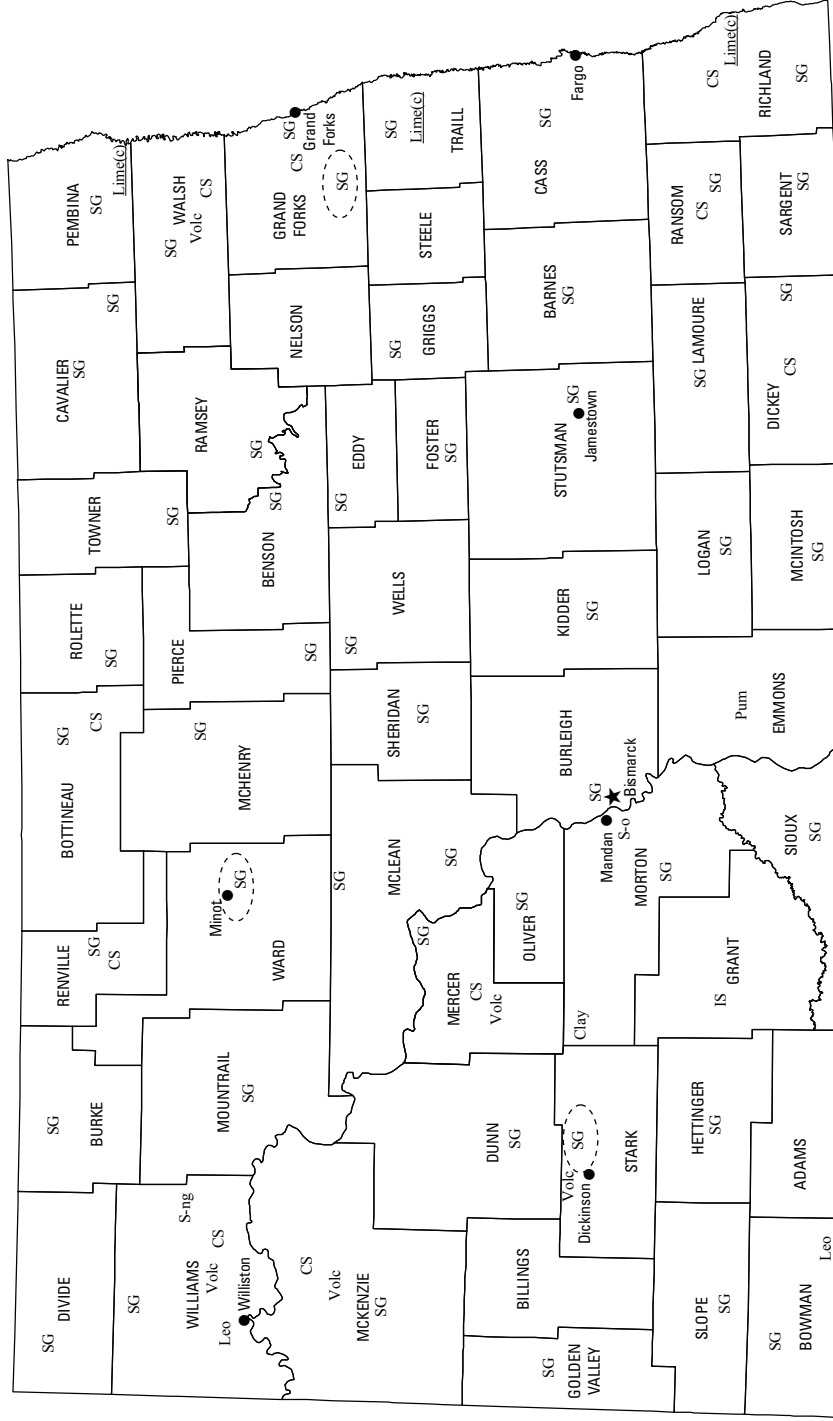




2012–2013 Minerals Yearbook

NORTH DAKOTA [ADVANCE RELEASE]

NORTH DAKOTA



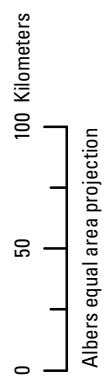
LEGEND

- County boundary
- ★ Capital
- City

**MINERAL SYMBOLS
(Principal producing areas)**

- Clay
- CS Crushed stone
- IS Industrial sand
- Leo Leonardite
- Lime(c) Lime (captive)
- Pum Pumicite
- S-ng Sulfur (natural gas)
- S-o Sulfur (oil)
- SG Construction sand and gravel
- Volc Volcanic cinder

○ Concentration of mineral operations



THE MINERAL INDUSTRY OF NORTH DAKOTA

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

In 2013, the value of nonfuel mineral production¹ in the State of North Dakota was \$263 million,² 0.4% of the total U.S. nonfuel mineral production, ranking it 42d in the Nation. In 2012, the value was \$221 million,² 0.3% of the U.S. total nonfuel mineral production, ranking it 43d among the 50 States. In 2013, on a per capita basis, nonfuel mineral production in North Dakota had a value of \$364 compared with the national average of \$238. In 2012, the per capita value was \$315 compared with the national average of \$241.

The value of nonfuel mineral production in North Dakota² for the years 2006 through 2013 was as follows (in millions of dollars): \$44.4 (2006), \$50.6 (2007), \$39.8 (2008), \$50.5 (2009), \$70.2 (2010), \$125 (2011), \$221 (2012), and \$263 (2013).

In 2013, there were 856 employees in nonfuel mineral mines in North Dakota and 37 in mills and preparation plants. In 2012, the corresponding numbers were 948 in nonfuel mineral mines and 27 in mills and preparation plants (U.S. Mine Safety and Health Administration, 2013, p. 13; 2014, p. 13). In 2013, the average annual wage in North Dakota for all mining was \$80,193 compared with \$48,740 for all industries. In 2012, the corresponding figures were \$77,380 and \$46,823, respectively (National Mining Association, unpub. data, February 4, 2016).

In 2013 and 2012, North Dakota produced common clay, construction and industrial sand and gravel, crushed stone, lime, and natural gemstones. The largest increase in quantity and value was for construction sand and gravel, which has increased steadily since 2011.

Commodity Review

The North Dakota Geological Survey³ prepared a report on the nonfuel mineral industry of the State of North Dakota 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.

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 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>.

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

³Ned W. Kruger, Geologist, North Dakota Geological Survey, Department of Mineral Resources, provided the State nonfuel mineral industry information.

Industrial Minerals

Mineral industry activity with respect to industrial minerals was as follows:

- In 2013, there were 29 surface mining operations, affecting 393 hectares (ha), for mining sand and gravel, clay, scoria, and rock. A total of 1.11 million cubic meters of overburden was disturbed from 104 pits ranging in size from 0.3 to 18 ha.
- In 2012, 29 surface mining operations affecting 498 ha, mined the same minerals as in 2013. A total of 1.23 million cubic meters of overburden was disturbed from 108 pits ranging in size from 0.1 to 49 ha.
- In both years, one-third of the clay was mined by the Hebron Brick Company to produce brick, and one-third of the clay mined for the manufacture of brick was kaolinite. Hebron was the only brick manufacturing company in North Dakota.
- State law requires that any person or company removing 7,650 cubic meters or more of earth materials or products (including overburden) affecting 0.2 ha or more in combined mining operations file a surface mining report with the State Soil Conservation Committee each calendar year. Minerals covered include cement rock, clay, gravel, limestone, manganese, molybdenum, peat, potash, pumicite, salt, sand, scoria, sodium sulfate, stone, zeolite, and other minerals (except coal).

References Cited

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 NORTH DAKOTA^{1,2}

(Thousand metric tons and thousand dollars)

Mineral	2011		2012		2013	
	Quantity	Value	Quantity	Value	Quantity	Value
Clays, common	W	W	W	W	W	W
Gemstones, natural	NA	4	NA	4	NA	4
Lime	W	W	W	W	W	W
Sand and gravel:						
Construction	21,700 ^r	116,000	29,400	208,000	32,600	255,000
Industrial	W	W	W	W	W	W
Stone, crushed	1,390 ^r	8,700 ^r	2,070	12,800	1,290	8,650
Total	XX	125,000	XX	221,000	XX	263,000

^rRevised. NA Not available. W Withheld to avoid disclosing company proprietary data; excluded from "Total." 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
NORTH DAKOTA: CRUSHED STONE SOLD OR USED IN THE UNITED STATES, BY TYPE¹

Type	2012				2013			
	Number of quarries	Quantity (thousand metric tons)	Value (thousands)	Unit value	Number of quarries	Quantity (thousand metric tons)	Value (thousands)	Unit value
Sandstone and quartzite ²	1	545	3,370	6.18	1	428	2,720	6.34
Volcanic cinder and scoria	6	821	5,180	6.31	6	578	4,010	6.94
Miscellaneous stone	9	707	4,270	6.04	9	283	1,930	6.81
Total or average	XX	2,070	12,800	6.18	XX	1,290	8,650	6.71

XX Not applicable.

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

²Includes sandstone-quartzite reported with no distinction between the two kinds of stone.

TABLE 3
NORTH DAKOTA: CRUSHED STONE SOLD OR USED BY PRODUCERS, BY USE¹

Use	2012			2013		
	Quantity (thousand metric tons)	Value (thousands)	Unit value	Quantity (thousand metric tons)	Value (thousands)	Unit value
Construction:						
Coarse aggregate (+1½ inch):						
Filter stone	--	--	--	W	W	W
Unspecified coarse aggregate	--	--	--	W	W	W
Fine aggregate (-¾ inch):						
Stone sand, bituminous mix or seal	--	--	--	W	W	W
Coarse and fine aggregates:						
Graded road base or subbase	--	--	--	W	W	W
Crusher run or fill or waste	67	\$304	\$4.54	W	W	W
Other miscellaneous uses and specified uses not listed	--	--	--	--	--	--
Unspecified: ²						
Reported	1,180	7,410	6.28	576	\$3,650	\$6.34
Estimated	825	5,100	6.19	501	3,180	6.34
Total or average	2,070	12,800	6.18	1,290	8,650	6.71

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

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

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

TABLE 4
NORTH DAKOTA: CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN 2012,
BY MAJOR USE CATEGORY¹

Use	Quantity (thousand metric tons)	Value (thousands)	Unit value
Concrete aggregate (including concrete sand)	446	\$4,270	\$9.57
Asphaltic concrete aggregates and road base materials ²	5,780	43,800	7.58
Fill	563	1,830	3.25
Other miscellaneous uses ³	42	363	8.64
Unspecified: ⁴			
Reported	11,700	81,200	6.94
Estimated	10,800	76,500	7.08
Total or average	29,400	208,000	7.07

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

²Includes road and other stabilization (cement).

³Includes railroad ballast, and snow and ice control.

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

TABLE 5
NORTH DAKOTA: CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN 2013,
BY MAJOR USE CATEGORY¹

Use	Quantity (thousand metric tons)	Value (thousands)	Unit value
Concrete aggregate (including concrete sand)	380	\$5,750	\$15.13
Asphaltic concrete aggregates and road base materials ²	6,160	55,400	8.99
Fill	805	3,250	4.04
Other miscellaneous uses ³	580	5,270	9.09
Unspecified: ⁴			
Reported	10,700	72,700	6.79
Estimated	14,000	112,000	8.00
Total or average	32,600	255,000	7.82

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

²Includes road and other stabilization (cement and lime).

³Includes railroad ballast, and snow and ice control.

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