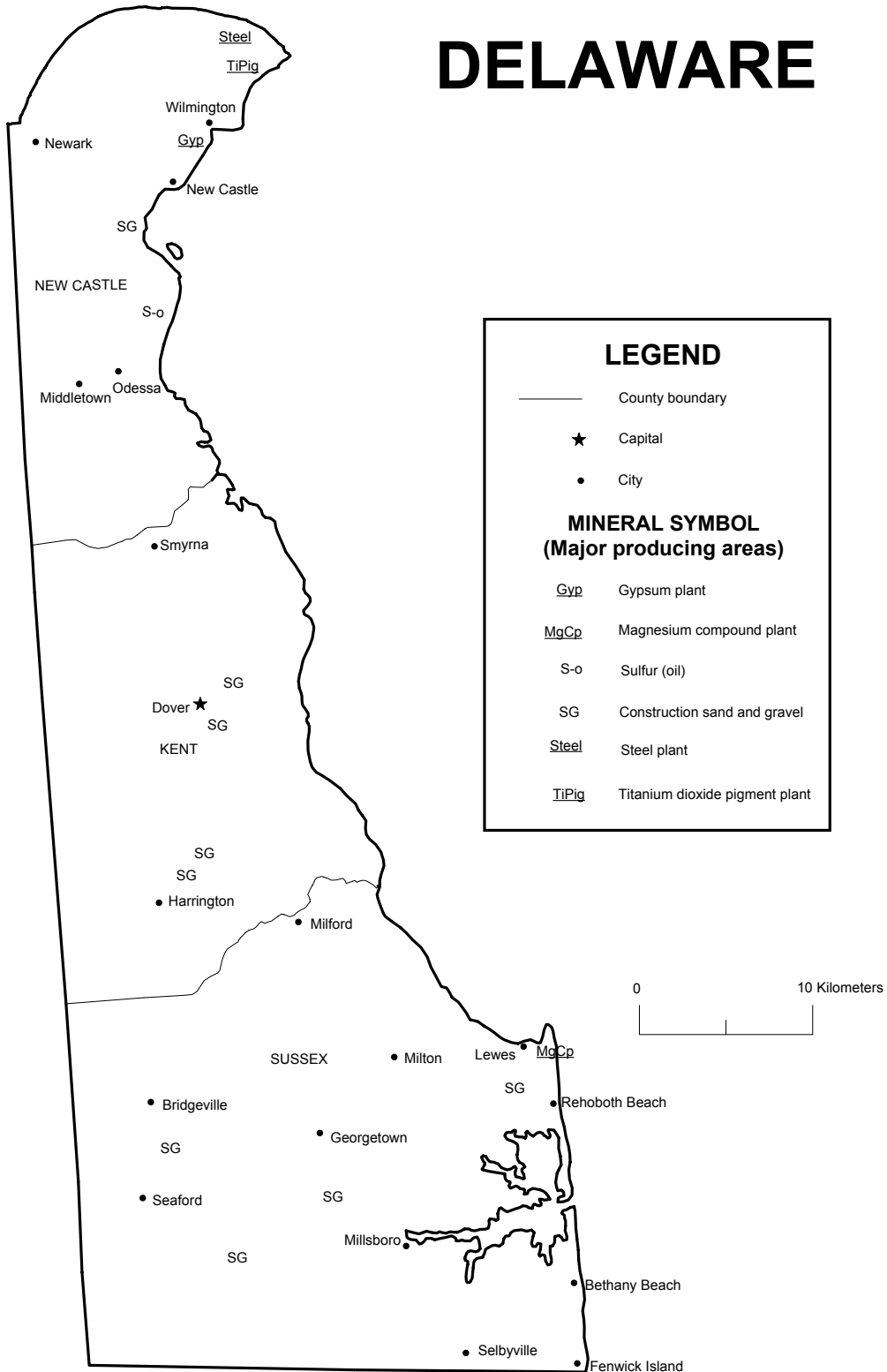


DELAWARE



Source: Delaware Geological Survey/U.S. Geological Survey (2001)

THE MINERAL INDUSTRY OF DELAWARE

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

In 2001, Delaware's estimated value¹ of nonfuel mineral production was \$13.1 million, based upon preliminary U.S. Geological Survey (USGS) data. This was an increase of about \$0.7 million from that of 2000² and followed an increase of about \$1.6 million (up 14.8%) from 1999 to 2000. Production data for magnesium compounds were withheld to protect company proprietary data; the State's actual annual total values are significantly higher than those shown in table 1.

In 2001, construction sand and gravel production and value increased, while that of magnesium compounds decreased slightly. Likewise, in 2000, construction sand and gravel production increased, while its value rose by \$1.6 million; magnesium compounds production was down, its value being down by close to \$1 million. Gemstones mined by hobbyists were valued at the same level for both years.

Based upon USGS estimates of the quantities produced in the United States during 2001, Delaware remained fourth of five States that produce magnesium compounds. Magnesium compounds, extracted from seawater close to the mouth of the Delaware Bay, near Lewes, Sussex County, were used to manufacture chemical and pharmaceutical products.

The narrative information that follows was provided by the Delaware Geological Survey³ (DGS). According to the DGS, there are at least 11 major sand and gravel production operations in Delaware. General locations are shown on the map on the facing page and on the DGS Internet Web site at URL <http://www.udel.edu/dgs/Minres/sandmap.html>. The DGS

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 2001 USGS mineral production data published in this chapter are preliminary estimates as of August 2002 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. Specialist contact information may be retrieved over the Internet at URL <http://minerals.usgs.gov/minerals/contacts/comdir.html>; alternatively, specialists' names and telephone numbers may be obtained by calling USGS information at (703) 648-4000 or by calling the USGS Earth Science Information Center at 1-888-ASK-USGS (275-8747). All Mineral Industry Surveys—mineral commodity, State, and country—also may be retrieved over the Internet at URL <http://minerals.usgs.gov/minerals>.

²Values, percentage calculations, and rankings for 2000 may differ from the Minerals Yearbook, Area Reports: Domestic 2000, Volume II, owing to the revision of preliminary 2000 to final 2000 data. Data for 2001 are preliminary and are expected to change; related rankings may also change.

³John H. Talley, Associate Director, authored the text of the State minerals information provided by the Delaware Geological Survey.

estimates of the quantities of sand and gravel produced from the State's natural resources are typically higher than those previously reported by the USGS (table 1). Reasons for this difference include (1) not all major producers necessarily report production to the USGS, (2) government agencies or companies that produce from pits for their own use do not necessarily report production, (3) many operations that mine relatively small amounts of sand and gravel are not contacted and, therefore, do not report production, and (4) production of sand from offshore areas for beach replenishment is not included in USGS figures. For example, according to the Delaware Department of Natural Resources and Environmental Control, in 1998, approximately 2.2 million metric tons of sand with an estimated value of \$6.9 million was dredged offshore Delaware and placed on beaches along the Atlantic Coast and Delaware Bay.

The U.S. Department of the Interior's Minerals Management Service (MMS) continued to provide support for studies to characterize offshore sand resources in both State and Federal waters for possible use for beach replenishment. The DGS recently completed a report entitled "An Evaluation of Sand Resources, Atlantic Offshore, Delaware." Evaluation of 266 vibracores along with geologic mapping and evaluation of seismic data resulted in the identification of 16 coastal areas of Delaware as excellent or good sand resource areas covering nearly 28 square kilometers containing an estimated 80 million cubic meters of the resource. An additional 20 vibracores are currently being evaluated.

The DGS continues to operate and maintain the DGS Atlantic Outer Continental Shelf Core and Sample Repository. Federal agencies, other State agencies, and private institutions that recognize the value of having a centralized repository contributed samples. The repository contains samples from all 51 oil and gas exploratory wells drilled on the North, Middle, and South Atlantic Outer Continental Shelf between 1977 and 1984. Samples include cores, unwashed cuttings, vials containing samples processed for micropaleontology and palynology, thin sections of cores and cuttings, and micropaleontology and palynology slides. A summary of holdings can be found on the DGS Internet Web site at URL <http://www.udel.edu/dgs/Minres/ocsrepos.htm>. The DGS is designated as the primary repository for these samples by the MMS.

The DGS continues to be actively involved in the mineral industry in Delaware through the identification and evaluation of sand and gravel resources as part of its geologic and hydrologic mapping programs and through service on a county committee involved in evaluating and renewing applications for extractive use operations.

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

(Thousand metric tons and thousand dollars unless otherwise specified)

Mineral	1999		2000		2001 p/	
	Quantity	Value	Quantity	Value	Quantity	Value
Gemstones	NA	1	NA	1	NA	1
Magnesium compounds metric tons	W	(3/)	W	(3/)	W	(3/)
Sand and gravel, construction	2,100	10,800	2,330	12,400	2,420	13,100
Total	XX	10,800	XX	12,400	XX	13,100

p/ Preliminary. NA Not available. W Withheld to avoid disclosing company proprietary 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/ Value excluded to avoid disclosing company proprietary data.

TABLE 2
DELAWARE: CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN 2000,
BY MAJOR USE CATEGORY 1/

Use	Quantity (thousand metric tons)	Value (thousands)	Unit value
Concrete aggregate (including concrete sand) 2/	1,600	\$8,820	\$5.51
Other miscellaneous uses 3/	578	2,860	4.94
Unspecified, estimated 4/	150	770	5.04
Total or average	2,330	12,400	5.34

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 asphaltic concrete aggregates and other bituminous mixtures, fill, road base and coverings, and snow and ice control.

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