

THE MINERAL INDUSTRY OF MAINE

This chapter has been prepared under a Memorandum of Understanding between the U.S. Bureau of Mines, U.S. Department of the Interior, and the Maine Geological Survey for collecting information on all nonfuel minerals.

In 1996, for the fourth consecutive year, Maine ranked 45th in the Nation in total nonfuel mineral production value,¹ according to the U.S. Geological Survey (USGS). The estimated value for 1996 was \$73 million, an 8% increase from that of 1995. This followed nearly an 11% increase from 1994 to 1995. The State accounted for somewhat less than 0.5% of the U.S. total nonfuel mineral production value. Maine's increased nonfuel mineral value in 1996 resulted from the rise in value of construction sand and gravel and, less so, that of crushed stone. Dimension stone (granite) also increased but by a relatively small amount. Decreases occurred for portland and masonry cements, peat, and gemstones. In 1995 the mineral commodities responsible for the State's overall increase were portland cement and construction sand and gravel.

The following narrative information was provided by the Maine Geological Survey² (MGS). According to the MGS, one of the most significant events in Maine's mining industry in 1996 was a proposal by NNM Resources Inc., a wholly owned company of Black Hawk Mining Inc., to open a mine at the Bald Mountain polymetallic deposit in Aroostook County. The Bald Mountain deposit, about 35 miles west of Presque Isle, consists of four zones: a gold-silver gossan, a high-grade supergene copper zone, a primary copper zone, and a low-grade zinc zone. While companies previously have designed projects to mine the whole deposit, the current Black Hawk proposal is for a much more limited project—to only extract gold and silver from the gossan cap. The gossan zone contains 1.1 million metric tons grading 4.1 grams (0.132 troy ounces) per ton gold and 91 grams (2.94 troy ounces) per ton silver. Environmental baseline monitoring was underway in 1996 and formal mining application was expected in 1997. This would be the first application submitted to the State of Maine under mining rules adopted in 1991.

Exploration for base metals in Maine both to evaluate known deposits and prospect for new ones continued in 1996 at a modest level. Several base metal deposits identified in previous exploration efforts have yet to be developed. One prominent reason for this is that on the international market, the Maine deposits are either of inadequate tonnage or grade to compete with mines

elsewhere in the world. Another factor considered by the MGS to be limiting interest in these properties was that the re-opening or expanding of existing mines elsewhere was preferred over opening new mine sites in Maine. Most notably, the record-breaking mining production in New Brunswick, Canada, in 1995 had no direct spinoff effect in Maine, and diverted resources of some regional mining offices away from Maine to New Brunswick. A team from the Mineral Resource Program of the USGS began a reconnaissance field and geochemical study of volcanic rocks hosting the Bald Mountain and Mt. Chase deposits of northern Maine.

The development permit for the Alder Pond copper-zinc-lead deposit in Somerset County, northwestern Maine, was transferred from BHP Minerals International, by way of an option agreement to the GCO Minerals Co. at the end of 1996. Under this permit, GCO Minerals engaged the drilling services of Prospectors Alliance Ltd. Prospectors Alliance, in partnership with yet another company, Larder Minerals Co. began a step-out drilling program adjacent to the Alder Pond main mineralized zone.

Interest in Maine gems among both amateur and professional collectors remained strong in 1996. Activity in several known pegmatite bodies in southern and southwestern Maine continued to produce gem tourmaline, amethyst, apatite, and other minerals. Maine pegmatites, which host the gems' major mineral pockets, were the subject of new petrologic research in 1996. In addition to the value of the gems produced, the mineral industry continues to attract mineral collectors and tourists to the State, thereby having a secondary beneficial impact on Maine's economy.

¹The terms "nonfuel mineral production" and related "values" encompass variations in meaning, depending on 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 1996 USGS mineral production data published in this chapter are estimates as of February 1997. Construction sand and gravel and crushed stone estimates are updated periodically. To obtain the most current information, please contact the appropriate USGS mineral commodity specialist. Call MINES FaxBack at (703) 648-4999 from a fax machine with a touch-tone handset and request Document # 1000 for a telephone listing of all mineral commodity specialists, or call

USGS information at (703) 648-4000 for the specialist's name and number. This telephone listing may also be retrieved over the Internet at <http://minerals.er.usgs.gov/minerals/contacts/comdir.html>

²Henry Berry, Physical Geologist, authored the text of minerals industry information submitted by that agency. He may be contacted at the same address and telephone and fax numbers as Dr. Marvinney.

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

(Thousand metric tons and thousand dollars unless otherwise specified)

Mineral	1994		1995		1996 p/	
	Quantity	Value	Quantity	Value	Quantity	Value
Gemstones	NA	235	NA	305	NA	W
Peat	W	W	15 3/	845 3/	W	W
Sand and gravel (construction)	5,890	24,400	6,420	26,900	7,170	31,200
Stone (crushed)	2,740	15,500	3,110	16,100	3,300	17,300
Combined value of cement, clays (common), stone [dimension (1994), dimension granite (1995-96)], and values indicated by symbol W		20,900	XX	23,500	XX	24,600
Total	XX	61,000	XX	67,600	XX	73,100

p/ Preliminary. NA Not available. W Withheld to avoid disclosing company proprietary data; value included with "Combined value" data. 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/ Data series changed to production beginning in 1995; prior years shipment data may not be comparable.

TABLE 2
MAINE: CRUSHED STONE 1/ SOLD OR USED BY PRODUCERS IN 1995, BY USE 2/

Use	Quantity (thousand metric tons)	Value (thousands)	Unit value
Coarse aggregate (+1 1/2 inch):			
Riprap and jetty stone	(3/)	\$2	\$7.35
Filter stone	79	358	4.53
Coarse aggregate, graded:			
Concrete aggregate, coarse	80	658	8.23
Bituminous aggregate, coarse	112	554	4.95
Railroad ballast	9	71	7.89
Fine aggregate (-3/8 inch): Screening, undesignated	5	19	3.80
Coarse and fine aggregate: Graded road base or subbase	191	840	4.40
Chemical and metallurgical:			
Cement manufacture	W	W	2.65
Lime manufacture	W	W	2.73
Unspecified: 4/			
Actual	772	4,740	6.14
Estimated	1,260	7,240	5.75
Total	3,110	16,100	5.17

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

1/ Includes calcareous marl, granite, limestone, miscellaneous stone, quartzite, slate, and traprock.

2/ Data are rounded to three significant digits; may not add to totals shown.

3/ Less than 1/2 unit.

4/ Includes production reported without a breakdown by end use and estimates for nonrespondents.

TABLE 3
MAINE: CRUSHED STONE SOLD OR USED, BY KIND 1/

Kind	1994				1995			
	Number of quarries	Quantity (thousand metric tons)	Value (thousands)	Unit value	Number of quarries	Quantity (thousand metric tons)	Value (thousands)	Unit value
Limestone	6	1,530	\$9,450	\$6.19	6	1,590	\$7,910	\$4.96
Calcareous marl	1	W	W	11.50	1	W	W	11.43
Granite	3	314	1,420	4.52	2	W	W	5.04
Quartzite	--	--	--	--	1	W	W	5.65
Slate	2	W	W	6.43	2	W	W	6.61
Traprock	2	W	W	5.28	2	W	W	5.52
Miscellaneous stone	2	198	750	3.79	4	W	W	4.70
Total	XX	2,740	15,500	5.65	XX	3,110	16,100	5.17

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

1/ Data are rounded to three significant digits; may not add to totals shown.

TABLE 4
MAINE: CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN 1995,
BY MAJOR USE CATEGORY 1/

Use	Quantity	Value	Value
	(thousand metric tons)	(thousands)	per ton
Concrete aggregate (including concrete sand)	609	\$2,800	\$4.60
Concrete products (blocks, bricks, pipe, decorative, etc.)	(2/)	1	6.80
Asphaltic concrete aggregates and other bituminous mixtures	944	4,820	5.11
Road base and coverings 3/	1,460	5,760	3.94
Fill	774	1,590	2.05
Snow and ice control	548	1,730	3.15
Other	54	102	1.89
Unspecified: 4/			
Actual	259	1,280	4.92
Estimated	1,770	8,800	4.97
Total or average	6,420	26,900	4.18

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ Less than 1/2 unit.

3/ Includes road and other stabilization (cement and lime).

4/ Includes production reported without a breakdown by end use and estimates for nonrespondents.