

THE MINERAL INDUSTRY OF ALASKA

In 2000, the estimated value¹ of nonfuel mineral production for Alaska was about \$1.13 billion, based upon preliminary U.S. Geological Survey (USGS) data. This was about a 4.6% increase from that of 1999² and followed an 8.1% increase from 1998 to 1999. The State remained 12th in rank in 1999 among the 50 States in total nonfuel mineral production value and accounted for close to 3% of the U.S. total.

Overall, metallic minerals accounted for more than 94% of the State's total nonfuel mineral production value in 2000. A large majority of this was from zinc, lead, and silver production at Cominco Alaska Inc.'s Red Dog Mine, which is near Kotzebue in northwestern Alaska, and gold production from the Kinross Gold Corp.'s Fort Knox Mine, which is near Fairbanks in east-central Alaska. (Listings of mineral commodities are in descending order of value, magnitude of change in value, or quantity produced.) In 2000, most of the State's increase in nonfuel mineral value resulted from a 5.1% increase in the production of zinc, resulting in a more than \$50 million increase in the metal's value. Significantly smaller increases occurred in construction sand and gravel, up \$3.5 million, and silver. The only significant decreases were a \$9 million drop in gold and a \$1 million decrease in the value of lead. In 1999, substantial increases in the production and values of zinc, lead, and silver, especially that of zinc, up more than \$100 million, significantly offset decreases of \$33 million in gold and about \$24 million in construction sand and gravel, resulting in the State's rise in value (table 1).

On the basis of USGS estimates of the quantities produced in the 50 States during 2000, Alaska remained first in zinc and second in lead and silver. The State decreased to fourth from third in the production of gold.³ Production of peat was not

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 2000 USGS mineral production data published in this chapter are preliminary estimates as of July 2001 and are expected to change. For some mineral commodities, such as 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. A telephone listing for the specialists may be retrieved over the Internet at URL <http://minerals.usgs.gov/minerals/contacts/comdir.html>, by using MINES FaxBack at (703) 648-4999 from a fax machine with a touch-tone handset (request Document #1000 for a telephone listing of all mineral commodity specialists), or by calling USGS information at (703) 648-4000 for the specialist's name and number. All Mineral Industry Surveys—mineral commodity, State, and country—also may be retrieved over the Internet at URL <http://minerals.usgs.gov/minerals>; facsimile copies may be obtained from MINES FaxBack.

²Values, percentage calculations, and rankings for 1999 may vary from the Minerals Yearbook, Area Reports: Domestic 1999, Volume II, owing to the revision of preliminary 1999 to final 1999 data. Data for 2000 are preliminary and are expected to change; related rankings may also be subject to change.

³Gold figures in table 1, as reported to the USGS, may conflict with estimates made by the Alaska Department of Natural Resources, Division of Geological and Geophysical Surveys (DGGS). The canvassing of gold placer mineral production was discontinued by the U.S. Bureau of Mines (the Federal agency formerly responsible for U.S. nonfuel mineral production data collection) in 1994. Gold production and value data in table 1 contain data that will be further estimated by the USGS in cooperation with the DGGS. Current estimates based on data collected by the DGGS indicate the production quantity in 1998 was ALASKA—2000

reported to the USGS, partly because of reporting difficulties associated with the seasonal, intermittent nature of the mineral commodity's mining in the State. The Alaska Department of Natural Resources, Division of Geological and Geophysical Surveys (DGGS), estimated peat production to be about 30,600 cubic meters for an estimated value of about \$174,000. Additionally, the DGGS reported production of jade and soapstone to be about 1.8 metric tons (t) at an estimated value of \$25,000 (Szumigala and Swainbank, 2001).

The DGGS provided the following narrative information; the data are based on DGGS surveys and estimates (Szumigala and Swainbank, 2001). Production at Cominco Ltd.'s Red Dog Mine increased to 531,000 t zinc, 83,100 t lead, and an estimated 182 t silver. Fort Knox Mine, which is near Fairbanks, was Alaska's largest gold producer—11.3 t in 2000. The Greens Creek Mine, owned by Kennecott Minerals Co. and Hecla Mining Co., milled a record 562,000 t of ore to produce concentrates containing 76,300 t of zinc, 28,700 t of lead, 386 t of silver, and 4 t of gold.

Mining resumed at the Illinois Creek hardrock open pit gold/silver mine in July when American Reclamation Group LLC began a program of "mining-to-reclaim" under an agreement with the State of Alaska. Production during 2000 was from ore placed on the leach pad. Reclamation of the camp area was initiated, and several tons of excess chemicals were removed.

Production of sand and gravel was boosted by BP plc's construction of the Northstar gravel island in the Beaufort Sea, but construction in the several villages of northwestern Alaska was also robust.

Development expenditures in 2000 were estimated to be \$137.1 million in large part because of activity at Red Dog, Greens Creek, Fort Knox, Pogo, and Kensington. The 405% increase from the previous year more than compensates for the decline in exploration expenditures. Cominco invested about \$100 million for the Mill Optimization Project (MOP). When complete, MOP will increase mill throughput by about 8%.

Preliminary estimates indicate that \$31.2 million was spent on mineral exploration in Alaska in 2000, and about 57% of that total was spent in the eastern interior region. Exploration highlights include continued thick base metal drill intercepts reported from the Anarraaq deposit near the Red Dog Mine, significant platinum-group metals exploration being conducted by several companies in the south-central and southeastern regions of Alaska, polymetallic mineralization discovered at the Road Metal prospect near Northway, and lode gold mineralization encountered at several more prospects in the Goodpaster mining district. The Pogo deposit advanced towards the development phase and other prospects on the Pogo property were drill tested.

The True North deposit near the Fort Knox Mine continued through the permitting stage and received final permits late in

18,500 kilograms (kg) valued at \$175 million; in 1999, 16,100 kg valued at \$144 million; and in 2000, 17,000 kg valued at \$152 million (Szumigala and Swainbank, 2001). The USGS final 1998-2000 total gold production and value data for Alaska, done in collaboration with the DGGS, will be reflected in the upcoming USGS Mineral Industry Surveys—Gold, 2000 Annual Review.

the year. Cominco American Inc. continued a major optimization project at the Red Dog mill.

New Federal mining claims staked during 2000 numbered 557, an 80% increase from that of 1999. Approximately 400 new State prospecting sites were filed during 2000, down 80% from that of 1999.

Significant changes were made to the statutes governing location and recording of State mining claims and prospecting sites in 2000, effective August 31. The allowable time between location in the field and recording at the Recorder's Office was reduced from 90 days to 45. Mining claim law was expanded to include the option of filing a 65-hectare claim.

For the first time in 8 years, there was no mineral-related airborne geophysical survey by DGGS, but crews field checked the 1998 Fortymile and 1999 Pogo area surveys. The Division of Mining, Land, and Water continued its joint-venture work with the USGS in the Pogo area. The U.S. Bureau of Land Management, assisted by DGGS, released the results of its April airborne geophysical survey of the Aniak district, which included the 358 t Donlin Creek gold prospect, in September.

The Alaska Department of Natural Resources presented reclamation awards in 2000 to Kvaerner Environmental Technologies Inc., Fairbanks Gold Mining Inc., and the Alaska Department of Fish and Game's Northern Habitat Division for outstanding reclamation projects. Kvaerner fulfilled all abandonment responsibilities incurred by Echo Bay Alaska

Inc.'s lease of the Alaska-Juneau Gold Mine from 1985 to 1997. Kvaerner operated the closeout phase of the project from 1997 to 2000 and completed all legal and regulatory requirements along with various contractual obligations.

Fairbanks Gold Mine Inc. established a wetland complex as part of the reclamation plan for the Fort Knox Mine in the area of Fish Creek between the tailing dam and the freshwater reservoir.

The Alaska Department of Transportation and Public Facilities began a \$2 million regional transportation study of northwestern Alaska that covers an area from St. Michael, near the mouth of the Yukon River, to the North Slope. The study is an important step towards securing Federal and State funds for public infrastructure in this area that includes mineral deposits on the Seward Peninsula, the western Arctic coalfield, the Noatak (Red Dog) mining district, and the Ambler Mineral Belt. All options for transportation are being considered, including a freight railroad that could connect to interior Alaska or the western coast near the Red Dog port or on Norton Sound on the south side of the Seward Peninsula.

Reference Cited

Szumigala, D.J., and Swainbank, R.C., 2001, Alaska's mineral industry 2000—A summary: Alaska Department of Natural Resources, Division of Geological and Geophysical Surveys, Information Circular 47, 14 p.

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

(Thousand metric tons and thousand dollars unless otherwise specified)

Mineral	1998		1999		2000 p/	
	Quantity	Value	Quantity	Value	Quantity	Value
Gemstones	NA	11	NA	11	NA	11
Gold 3/ 4/ kilograms	18,300	174,000	15,700	141,000	15,600	140,000
Sand and gravel, construction	13,700	72,700	9,620	48,500	10,000	52,000
Stone, crushed 5/	1,700	9,970	1,800	9,900	1,800	10,200
Combined values of copper (1998-99), lead, silver, stone [crushed dolomite, limestone, shell, slate], zinc	XX	743,000	XX	880,000	XX	932,000
Total	XX	999,000	XX	1,080,00	XX	1,130,000

p/ Preliminary. NA Not available. 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/ Recoverable content of ores, etc.

4/ Data collected by the State.

5/ Excludes certain stones; kind and value included with "Combined values" data.

TABLE 2
ALASKA: CRUSHED STONE SOLD OR USED, BY KIND 1/ 2/

	1998				1999			
	Number of quarries	Quantity (thousand metric tons)	Value (thousands)	Unit value	Number of quarries	Quantity (thousand metric tons)	Value (thousands)	Unit value
Limestone-dolomite	1	W	W	\$3.60	1	W	W	\$6.00
Granite	1	(3/)	(3/)	3.83	1	(3/)	(3/)	8.26
Shell	1	W	W	4.33	1	W	W	4.33
Traprock	4 r/	582 r/	\$2,610 r/	4.48 r/	4	477	\$2,410	5.05
Slate	1	W	W	6.86	1	W	W	6.00
Miscellaneous stone	9	1,100	7,270	6.64	9	1,280	7,180	5.61
Total or average	XX	1,700	9,970	5.86	XX	1,800	9,900	5.51

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

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

2/ Data derived, in part, from information obtained from the Alaska Department of Natural Resources, Division of Geological and Geophysical Surveys.

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

TABLE 3
ALASKA: CRUSHED STONE SOLD OR USED BY PRODUCERS
IN 1999, BY USE 1/ 2/

Use	Quantity (thousand metric tons)	Value (thousands)	Unit value
Construction:			
Coarse aggregates (+1 1/2 inch):			
Riprap and jetty stone	12	\$109	\$9.08
Filter stone	4	34	8.50
Other coarse aggregate	12	55	4.58
Coarse aggregate, graded:			
Concrete aggregate, coarse	45	255	5.67
Bituminous surface-treatment aggregate	5	72	14.40
Fine aggregate (-3/8 inch), screening, undesignated	2	29	14.50
Coarse and fine aggregates:			
Graded road base or subbase	11	63	5.73
Unpaved road surfacing	12	127	10.58
Crusher run or fill or waste	13	139	10.69
Other construction materials	29	141	4.86
Unspecified: 3/			
Reported	1,180	6,510	5.52
Estimated	470	2,400	5.03
Total or average	1,800	9,900	5.51

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

2/ Data derived, in part, from information obtained from the Alaska Department of Natural Resources, Division of Geological and Geophysical Surveys.

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

TABLE 4
ALASKA: CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN 1999,
BY MAJOR USE CATEGORY 1/ 2/

Use	Quantity (thousand metric tons)	Value (thousands)	Unit value
Concrete aggregates and concrete products	324	\$2,080	\$6.43
Asphaltic concrete aggregates and other bituminous mixtures	739	4,730	6.40
Road base and coverings	724	4,230	5.84
Fill	351	1,460	4.15
Snow and ice control	26	193	7.42
Railroad ballast	94	449	4.78
Unspecified: 3/			
Reported	6,930	32,800	4.73
Estimated	430	2,600	6.05
Total or average	9,620	48,500	5.04

1/ To avoid disclosing company proprietary data, no regions tables were produced for 1999.

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

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