

THE MINERAL INDUSTRY OF ALASKA

The State of Alaska ranked 27th nationally in total nonfuel mineral value¹ in 1994, rising from 29th in 1993, according to the U.S. Bureau of Mines. The State had been 21st in 1992. The estimated value for 1994 was \$429 million, about a 14% increase from that of 1993. This followed a 28% decrease in 1993 from that of 1992. The State accounted for more than 1% of U.S. total value. Overall, metallic minerals accounted for about 86% of Alaska's total nonfuel mineral value, while construction sand and gravel and crushed stone almost entirely made up the remaining 14% represented by industrial minerals. In 1994, increased average metal prices for lead (80%), silver (21%), and gold (8%), as well as for zinc (16%) late in the year, together with increased zinc production at the Red Dog Mine, were the main causes for the State's increased mineral value, according to Alaska's Department of Natural Resources (DNR). The substantial decrease that occurred from 1992 to 1993 resulted mainly from low zinc and lead prices, which were largely responsible for the temporary closing of the Greens Creek polymetallic—zinc, lead, silver, and gold—mine in April 1993. Compared with 1993, the value of zinc, gold, construction sand and gravel, lead, and crushed stone increased. Decreases occurred for silver and tin.

In estimated mineral production for 1994, Alaska remained 1st in zinc, 2d in lead, 3d in peat, 1 of the top 7th silver producers, 8th² of the 13 U.S. gold producing States, and the only State with significant production of tin.

According to Alaska's DNR, Division of Geological and Geophysical Surveys, exploration expenditures in Alaska were reported to be \$28.3 million. As in past years,

projects in the southeastern and eastern interior regions dominated the exploration expenditures with investments of \$8.2 million and \$9.9 million, respectively. Reported development expenditures increased from \$27.3 million in 1993 to \$42.5 million in 1994, an increase of 56%. Major developments at Echo Bay Alaska Inc.'s Alaska-Juneau Mine the "A-J" and Kennecott Corp.'s Greens Creek Mine, both in southeast Alaska, accounted for most of these expenditures. Final Federal permits were approved for Fairbanks Gold Mining Inc.'s gold project at the Fort Knox Mine, near Fairbanks. Cominco Alaska Inc. mined and milled more than 2.1 million metric tons (almost 2.4 million short tons) of zinc-lead-silver ore from the Red Dog Mine in northwest Alaska. A record 598,000 tons of zinc, lead, and bulk concentrates were shipped to overseas and Canadian smelters. Red Dog continues to be the largest zinc mine in North America, accounting for more than one-half of U.S. production in 1994, and an estimated 7 percent of the world's production. For the first time in 15 years, all gold production was derived exclusively from placer deposits. However, several new hardrock gold projects, including Nixon Fork, Illinois Creek, and Fort Knox, should result in significant Alaskan hardrock gold output in the near future. Usibelli Coal Mine Inc. again produced steam coal. About one-half of the nearly 1.4 million tons of coal was used in Alaska, while the remainder was exported. Commercial construction projects in the Anchorage, Fairbanks, and Juneau urban areas; road maintenance and construction; and maintenance of the Trans Alaska Pipeline kept the crushed stone and sand and gravel industries at stable levels. Mining and mineral

TABLE 1
NONFUEL RAW MINERAL PRODUCTION IN ALASKA¹

Mineral	1992		1993		1994 ^p	
	Quantity	Value (thousands)	Quantity	Value (thousands)	Quantity	Value (thousands)
Gemstones	NA	\$10	NA	\$10	NA	—
Gold ² kilograms	5,003	55,492	2,777	32,223	³ 4,540	³ \$52,700
Sand and gravel (construction) thousand metric tons	13,613	43,335	^e 13,100	^e 42,600	13,500	45,200
Stone (crushed) ⁴ do.	^e 2,722	^e 13,400	2,425	11,294	^e 2,500	^e 11,900
Combined value of lead, silver, stone crushed sandstone, tin (1993-94), and zinc	XX	413,875	XX	291,489	XX	319,000
Total	XX	526,112	XX	377,616	XX	⁵ 429,000

^pEstimated. ^pPreliminary. NA Not available. XX Not applicable.

¹Production as measured by mine shipments, sales, or marketable production (including consumption by producers).

²Recoverable content of ores, etc.

³Placer canvassing discontinued beginning 1994.

⁴Excludes certain stones; kind and value included with "Combined value" data.

⁵Data do not add to total shown because of independent rounding.

exploration companies reported 137,681 meters (451,710 feet) of drilling in 1994, including placer exploration and hardrock core and rotary drilling, an almost 63 percent increase compared with that of 1993. Although Greens Creek mine remained closed, Kennecott Greens Creek Mining Company and the U.S.D.A. Forest Service, which manages the land underlying part of the mineral deposit, announced an agreement in which Kennecott would pay \$1 million and up to a 3% royalty to the Forest Service when the mine resumes operations. In return, the Forest Service would open an additional

3,000 hectares (7,500 acres) near the mine to mineral development.

¹The term value means the total monetary value as represented by either mine shipments, mineral commodity sales, or marketable production as is applicable to the individual mineral commodities.

²Gold figures in table 1, as reported to the U.S. Bureau of Mines probably understate production. Data collected by the State indicate production to have been as follows, in kilograms: 1992—8,163; 1993—5,948; and 1994—5,737. This correspondingly would raise Alaska's ranking from eighth to seventh among the U.S. gold-producing States.

TABLE 2
ALASKA: CRUSHED STONE¹ SOLD OR USED BY PRODUCERS IN 1993, BY USE

Use	Quantity (thousand metric tons)	Value (thousands)	Unit value
Coarse aggregate (+1 1/2 inch) ²	9	\$82	\$9.11
Coarse aggregate, graded ³	287	2,127	7.41
Fine aggregate (-3/8 inch) ⁴	49	342	6.98
Coarse and fine aggregates:			
Graded road base or subbase	1,171	4,077	3.48
Unpaved road surfacing	50	428	8.56
Crusher run or fill or waste	156	1,004	6.44
Other coarse and fine aggregates	W	W	7.72
Other construction materials	34	240	7.06
Other specified uses not listed ⁵	116	569	4.91
Unspecified: ⁶			
Actual	69	204	2.96
Estimated	484	2,221	4.59
Total	2,425	11,294	4.66
Total ^{7 8}	2,673	11,294	4.23

W Withheld to avoid disclosing company proprietary data; included with "Other construction materials."

¹Includes granite, miscellaneous stone, sandstone, slate, and traprock; excludes value for sandstone from State total to avoid disclosing company proprietary data.

²Includes riprap and jetty stone and other coarse aggregate.

³Includes concrete aggregate, coarse, bituminous aggregate, coarse, bituminous surface-treatment aggregate, railroad ballast, and other graded coarse aggregate.

⁴Includes stone sand, concrete and other fine aggregate.

⁵Includes other agricultural uses and other fillers or extenders.

⁶Includes production reported without a breakdown by use and estimates for nonrespondents.

⁷One short ton is equal to 907 kilograms or 2,000 pounds. To convert metric tons to short tons, divide metric tons by 0.907185.

⁸Total shown in thousand short tons and thousand dollars.

TABLE 3
ALASKA: CRUSHED STONE SOLD OR USED, BY KIND

Kind	1991				1993			
	Number of quarries	Quantity (thousand metric tons)	Value (thousands)	Unit value	Number of quarries	Quantity (thousand metric tons)	Value (thousands)	Unit value
Limestone	4	51	\$225	\$4.41	—	—	—	—
Granite	3	56	246	4.39	4	172	\$1,322	\$7.69
Traprock	6	407	1,970	4.84	6	528	2,607	4.94
Sandstone	(¹)	(¹)	(¹)	(¹)	1	6	(²)	(²)
Slate	1	7	32	4.57	1	19	90	4.74
Volcanic cinder and scoria	1	64	200	3.13	—	—	—	—
Miscellaneous stone	6	426	2,116	4.97	15	1,700	7,275	4.28
Total	XX	1,011	³ 4,788	4.74	XX	2,425	11,294	4.66
Total ^{4 5}	XX	1,114	\$4,788	4.30	XX	2,673	\$11,294	4.23

XX Not applicable.

¹Excludes sandstone from State total to avoid disclosing company proprietary data.

²Excludes sandstone value from State total to avoid disclosing company proprietary data.

³Data do not add to total shown because of independent rounding.

⁴One short ton is equal to 907 kilograms or 2,000 pounds. To convert metric tons to short tons, divide metric tons by 0.907185.

⁵Total shown in thousand short tons and thousand dollars.