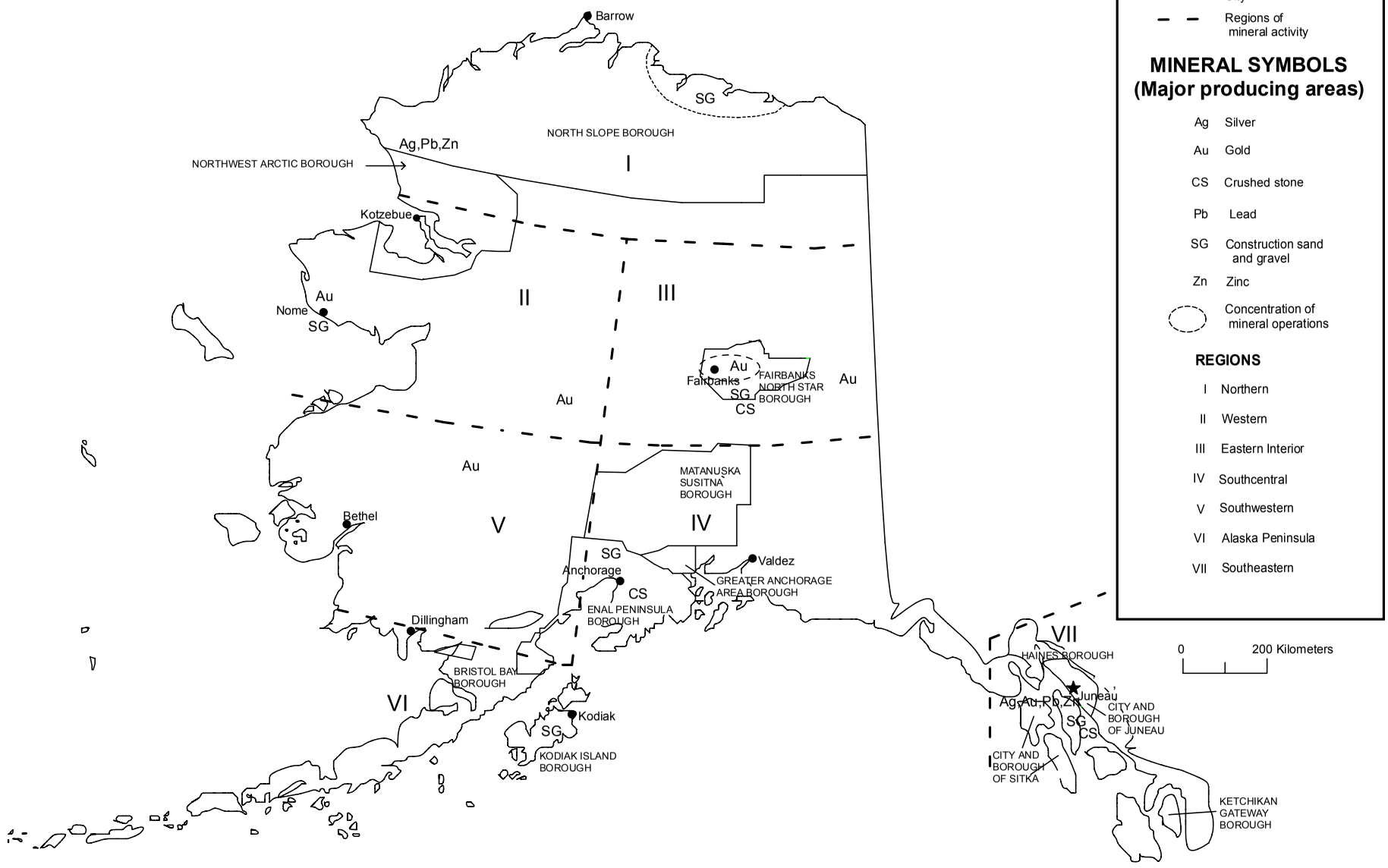
ALASKA



LEGEND

- Borough boundary
- Capital
- City
- Regions of mineral activity

MINERAL SYMBOLS (Major producing areas)

Ag	Silver
Au	Gold
CS	Crushed stone
Pb	Lead
SG	Construction sand and gravel
Zn	Zinc
	Concentration of mineral operations

REGIONS

I	Northern
II	Western
III	Eastern Interior
IV	Southcentral
V	Southwestern
VI	Alaska Peninsula
VII	Southeastern

Source: Alaska Division of Geological and Geophysical Surveys/U.S. Geological Survey (2004)

THE MINERAL INDUSTRY OF ALASKA

In 2004, Alaska's nonfuel raw mineral production was valued[1] at $1.27 billion, based upon annual U.S. Geological Survey (USGS) data. This was a 17.6% increase from the State's total nonfuel mineral value for 2003,[2] which was up 1.9% from 2002. The State, for the third consecutive year and the fifth of the past six years, ranked 12th among the 50 States in total nonfuel mineral production value and accounted for nearly 3% of the U.S. total value.[3]

During 2004, metallic minerals accounted for nearly 95%[3] of the total value of Alaska's nonfuel mineral production. A large majority of the value was the result of zinc, lead, and silver production (descending order of value) from (1) Teck Cominco Alaska Inc.'s Red Dog Mine near Kotzebue in northwestern Alaska and the Greens Creek Mine (a joint venture of Kennecott Mineral Co. and Hecla Mining Co. in southeastern Alaska southwest of Juneau) and (2) gold production from Kinross Gold Corp.'s Fort Knox Mine near Fairbanks in east-central Alaska and from the Greens Creek Mine. Although the production levels of gold, lead, silver, and zinc were down somewhat from 2003, increases in the average unit values of each resulted in a combined increase in total value of the metals produced of more than$180 million[3] (table 1). By far the largest increase in value was in zinc, followed by lead and silver, which each had increases in value of about one-third as much as that of zinc.[3]

In 2003, nearly all nonfuel minerals showed increases in value. Increases in the production and values of zinc (up more than $40 million) and lead (up more than $10 million) were substantial; the value of gold increased, but production was down slightly, and the production and value of silver increased slightly. The only decrease in the value of nonfuel minerals was in construction sand and gravel, which was down nearly $38 million (table 1).

In 2004, Alaska continued to rank first in the quantities of zinc and silver produced, second in gold among 10 gold-producing States,[4] and second in lead.[3] Production of peat in Alaska was not reported to the USGS partly because of reporting difficulties associated with the seasonal, intermittent nature of peat mining in the State. The Alaska Department of Natural Resources (ADNR), Division of Geological and Geophysical Surveys (DGGS), estimated peat production to be about 159,000 cubic meters, valued at about $2.7 million. The DGGS provided the following narrative information;[5] the data are based on DGGS surveys and estimates.

Exploration, Development, and Drilling Activities

Estimated exploration expenditures during 2004 were about $70 million, which was a substantial increase compared with expenditures of $28 million in 2003 (Szumigala and Hughes, 2005§[6]). Although most of the effort was directed at gold projects, some expenditure was noted for nickel-copper and platinum-group metals, diamond, and base metals. Exploration was conducted across Alaska, but primarily in southwestern Alaska. Fifteen exploration projects had budgets greater than $1 million. The Fairbanks mining district gold projects (Kinross Gold), the Pebble copper-gold project (Northern Dynasty Minerals Ltd.), and the Union Bay platinum-nickel-copper project (Freegold Ventures Ltd., Lonmin plc, and Pacific North West Capital Corp.) accounted for most of the exploration expenditures and drill footage. Advanced exploration projects included the Donlin Creek gold project (Calista Corp., NovaGold Resources Inc., and Placer Dome Inc.) and the Pebble copper-gold project (Northern Dynasty Minerals).

Base-metal exploration was led by NovaGold Resources' exploration of the Arctic volcanogenic massive sulfide (VMS) deposit in the Brooks Range. Platinum and associated metals exploration continued at the MAN project in the Alaska Range (Anglo American Exploration Ltd. and Nevada Star Resource Corp.) and at Union Bay in southeastern Alaska (Freegold Ventures, Lonmin, and Pacific North West Capital).

Gold remained a major exploration target, but copper-gold porphyry systems (grouped with polymetallic deposits) were the major exploration target in 2004. Base-metal exploration expenditures increased significantly from 2003 levels. Platinum-group-element exploration was unchanged.

Development investment increased to $209 million for 2004, which was a significant increase—much more than the $39 million spent in 2003. The increase was primarily owing to the construction at the Teck Pogo Inc. gold project by Teck Cominco Inc. and

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[1]The 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 2004 USGS mineral production data published in this chapter are those available as of December 2005.[3] All USGS Mineral Industry Surveys and USGS Minerals Yearbook chapters—mineral commodity, State, and country—also can be retrieved over the Internet at URL http://minerals.usgs.gov/minerals.

[2]Values, percentage calculations, and rankings for 2003 may differ from the Minerals Yearbook, Area Reports: Domestic 2003, Volume II, owing to the revision of preliminary 2003 to final 2003 data. Data and rankings for 2004 are considered to be final and are not likely to change significantly.

[3]Correction posted August 4, 2006.

[4]Gold figures in table 1, as reported to the USGS, may differ from 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 responsible for U.S. nonfuel mineral production data collection from 1924 to 1995) in 1994. Some gold production and value data in table 1 will be further estimated by the USGS in cooperation with the DGGS. Estimates based upon data collected by the DGGS indicate the production quantity in 2002 was 17,500 kilograms (kg) valued at $174 million; in 2003, 16,400 kg (hardrock gold, 15,700 kg; placer gold, 700 kg[3]) valued at $192 million; and in 2004, nearly 14,100 kg[3] (hardrock gold, 13,300 kg; placer gold, 767 kg) valued at $186 million.[3] The USGS final 2002-04 total gold production and value data for Alaska, done in collaboration with the DGGS, are published in the text of the Gold chapter in Volume I of the 2004 USGS Minerals Yearbook.

[5]Richard A. Hughes of the Alaska Department of Commerce, Community and Economic Development's Division of Community and Business Development, and David J. Szumigala, Senior Mineral Geologist with the Alaska Department of Natural Resources' Division of Geological and Geophysical Surveys, authored the text of the State mineral industry information provided by that State agency.

[6]A reference that includes a section mark (§) is found in the Internet Reference Cited section.

Sumitomo Metal Mining Co., which was fully permitted in mid-2004. Other significant investments were made at Fort Knox Mine, the Greens Creek Mine, the Kensington Project, and the Usibelli Coal Mine and in the sand and gravel industry.

Teck Pogo began construction at the Pogo project after the company received its final permits; an all-weather 80-kilometer (km) road was completed between Richardson Highway and the project site. A power transmission line from Golden Valley Electric Association facilities near Richardson Highway was constructed, with power due to be delivered in early 2006; mill and infrastructure facilities construction continued through 2004.

In other developments, Fairbanks Gold Mining Co. Inc. (FGMI) (a wholly owned subsidiary of Kinross Gold) acquired capital equipment and undertook advanced stripping at the Fort Knox Mine. Coeur Alaska Inc. continued development investment at Kensington Project in anticipation of a resolution of its permit appeal in early 2005. Greens Creek Mine Co. undertook tailings storage improvements and investments in underground development during the year. Usibelli Coal Mine Inc. invested in equipment and advanced stripping. The acquisition of a large cutter-head floating dredge by a Fairbanks gravel producer was a highlight for the sand and gravel industry.

Drilling was conducted during all phases of mining (exploration, development, and production) on various projects across Alaska during 2004. Preliminary drilling totals for 2004 were 100,000 meters (m) of core drilling, 7,500 m of reverse-circulation drilling, and 762 m of placer auger/churn drilling. No drilling was reported for coal operations.

Major drill programs were conducted by Northern Dynasty Minerals at the Pebble property; by Kinross Gold (FGMI) in the Fairbanks mining district, which included the Fort Knox and the True North Mines; AngloGold USA Exploration Inc. at several properties near Livengood and Pogo; Kennecott Minerals Co. at the Greens Creek Mine; the joint venture of Meridian Gold Inc. and Freegold Ventures on the Golden Summit property; NovaGold Resources at the Rock Creek, the Big Hurrah, and the Arctic properties; Teck Cominco in the Red Dog area; Kennecott Exploration Co. at the Whistler property; the joint venture of Freegold Ventures, Lonmin, and Pacific North West Capital at the Union Bay property; and the joint venture of St. Andrew Goldfields Ltd. and Mystery Creek Resources Inc. at the Nixon Fork property.

Commodity Review

The production estimates included in this report were compiled from DGGS questionnaires and telephone interviews of Alaskan Native corporations, agencies, and municipalities (Szumigala and Hughes, 2005§). Production data were collected on metals (gold, lead, silver, and zinc), industrial minerals (rock and sand and gravel), and coal and peat.

Total minerals industry employment in 2004 was estimated to be 3,048 full-time-equivalent jobs compared with 1,906 in 2003 (Szumigala and Hughes, 2005§). Most of the increase was in the exploration and development sectors. The number of jobs in the development sector is expected to increase in 2005 as more large mining projects transition into the construction phase.

Industrial Minerals

Crushed Rock and Sand and Gravel.—Production of rock and sand and gravel was up considerably compared with that of 2003. This is believed to be due to the combination of better reporting and increased production in 2004.

Metals

Gold.—FGMI operated the Fort Knox Mine and the satellite True North Mine. The company recovered about 10,500 kilograms (kg) of gold in 2004, or about 13.7% less than that of 2003. The shortfall was owing primarily to the result of lower gold ore grade. At the True North Mine, mining was suspended for a portion of the year to concentrate on stripping at Fort Knox. Production from True North was put on hold indefinitely at the end of the year. FGMI mined 17.1 million metric tons (Mt) of ore, 16 Mt from Fort Knox and 1.1 Mt from True North. Stripping volumes were 22 Mt at Fort Knox and 2.3 Mt at True North. Mill throughput amounted to 13.2 Mt at a calculated grade of 0.8 gram per metric ton (g/t) gold. Employment averaged 427.

Placer gold production reports were limited but reflected an increase in production to 873 kg in 2004. The 2003 reported production was 734 kg (Szumigala and Hughes, 2005§).

Zinc, Lead, and Silver.—The Red Dog Mine was the world's leading producer of zinc. It was 100% owned and operated by Teck Cominco under a development agreement with NANA Regional Corporation, Inc. (an Alaskan Native corporation). The mine is located in the DeLong Mountains of Alaska's Brooks Range; this remote site is approximately 144 km north of Kotzebue and 88 km from the Chukchi Sea.

Red Dog dominated Alaska's mineral production value and accounted for more than 50% of the annual value of Alaska's mineral industry. The mill processed 2.95 Mt at an average grade of 22% zinc. Sulfide concentrates contained 554,000 metric tons (t) of zinc, 117,000 t of lead, and an estimated 225,000 kg of silver. Red Dog reported an operating profit of $207 million compared with $42 million for 2003 (2003 numbers have been restated owing to new accounting standards by Teck Cominco). The improved results were attributed to higher average zinc prices. The domestic producer price for zinc was about $0.53 per pound in 2004 compared with $0.41 per pound in 2003 (Plachy, 2005).

In the southeastern region of Alaska southwest of Juneau, the Greens Creek Mine produced a silver-gold doré and sulfide concentrates that contained zinc, lead, and minor amounts of copper. The mine achieved another record year by milling 731,000 t of ore, which was a 3% increase compared with 2003. The average silver head grade was 675 g/t. Metal production totaled 302,000 kg of silver, 2,700 kg of gold, 62,700 t of zinc, and 19,800 t of lead.

Government Programs, Activities, Reclamation Awards

The DGGS conducted geologic mapping and geochemical sampling near the Big Hurrah area and in the Council area as part of an integrated program to follow up on the airborne geophysical survey results released by the DGGS in 2003. The DGGS also contracted for and worked on a 54,000-hectare (ha) airborne magnetic and electromagnetic geophysical survey in the southern Goodpaster region of the Big Delta Quadrangle. The data from this survey will be released in early 2005.

The DGGS released new trace-element geochemical data and whole-rock geochemical data for surface rock samples that were collected over 34,000 ha of the central Livengood Quadrangle in 2001 and 2003. One highly anomalous sample from a known prospect yielded slightly more than 34 g/t gold. DGGS also released new 1:50,000-scale geologic maps of the Livengood area as part of an integrated program to follow up on the airborne geophysical survey results released by the agency in 1999.

The DGGS also released a new bedrock geologic map of the Salcha River-Pogo area, which is located in the central Big Delta Quadrangle of Alaska. This 1:63,360-scale map, which covers approximately 113,000 ha within parts of the Fairbanks and the Goodpaster mining districts, was based on airborne geophysical survey (helicopter-based aeromagnetic, radiometric, and electromagnetic data) released by the DGGS in 2000 as part of the State-funded Alaska Airborne Geophysical/Geological Mineral Inventory Program. The map also contains information derived from fieldwork that was conducted during the summers of 2000 through 2002 by mineral-resource personnel from the DGGS and the University of Alaska–Fairbanks.

The ADNR released "LAS Mapper," which is an Internet mapping service. This mapping tool allows access to the Land Administration System (LAS) spatial and tabular data via an interactive map-based interface. The ADNR adjudicators had maintained a case file-based system within LAS for nearly 20 years. The LAS Mapper uses Internet mapping technology that enables the user to view the database of permits, leases, land sales, and other land-status information used to create Land Status Plats.

The ADNR continued working as a cooperating agency with the U.S. Environmental Protection Agency (EPA) and the U.S. Forest Service on the necessary permits for the expansion of the Greens Creek tailings facility in southeastern Alaska. This successful expansion required the approval of a revised solid waste permit from the Department of Environmental Conservation and additional revisions to the financial assurances. Work was also in progress to update permits for the Red Dog Mine. The ADNR worked with the EPA and the U.S. Army Corps of Engineers on permitting issues for Coeur Alaska's Kensington Project, which included preparing draft decisions on several State leases and permits related to the project.

The USGS, in cooperation with other agencies, continued work on the 5-year project Tintina Metallogenic Province Integrated Studies on Geological Framework, Mineral Resources, and Environmental Signatures. Fieldwork on the Black Mountain-Tibbs Creek area of the Big Delta B-1 Quadrangle included geologic mapping and baseline geochemistry and biogeochemistry studies.

The DGGS, the U.S. Bureau of Land Management (BLM), and the USGS continued a number of cooperative projects under the Minerals Data and Information Rescue in Alaska (MDIRA) program. The DGGS continued work on the Alaska Resource Database Files (ARDF) project. Other DGGS-managed, MDIRA-funded projects included compilations of the Alaskan bedrock and surficial geology map index project and DGGS lithochemical data and the building of a comprehensive database system at the agency. Other MDIRA-funded projects were in progress at other divisions of the ADNR, at the University of Alaska–Fairbanks, and with private contractors.

In 2004, the BLM conducted the final year of an extensive multiyear field program in the Delta River mining district of eastern and southcentral Alaska. Lode, placer, industrial, and coal sites were visited, geochemical samples were collected, and the analytical results were published. Final results from this work were expected to be published in 2005. Fieldwork during the 5-week field season at the Aniak mining district study focused on property examinations and sample collection in the central one-third of the district. BLM geologists succeeded in visiting 86 mineral occurrences in the central part of the study area and collected 287 samples. Work began around the historic mining town of Flat and proceeded south through Granite Creek and Julian Creek areas to the vicinity of Donlin Creek. The district evaluation then concentrated on mercury deposits in the Red Devil area. The gold and mercury occurrences in the west-central Sleetmute Quadrangle (Gold Run, Kolmakof, Mountain Top, and Murray Gulch) were then evaluated. A small crew was able to visit the Forty-Seven Creek and the Taylor Mountain areas, which extended the fieldwork into the southern district boundary. Summaries of this fieldwork and the analytical results were published in early 2005.

In July 2004, the Governor's Office formed several subcabinets to allow commissioners to deal with issues and push for process improvements. A Natural Resources Development Policy subcabinet that included representatives from the ADNR (as lead), the Department of Environmental Conservation, the Department of Transportation & Public Facilities, the Department of Law, the Alaska Department of Fish & Game, the Department of Commerce, Community, & Economic Development, the Department of Labor, and the Governor's Office was formed to promote resource development.

Alaska House Bill 556 by the House State Affairs committee authorized the Alaska Industrial Development and Export Authority to issue up to $20 million in bond debt for facilities to support the development of the Kensington Mine near Juneau. These tax-exempt bonds will help reduce construction costs of a port development project at Slate Creek Cove and Cascade Point on Lynn Canal.

Alaska Senate Bill 295 extended the termination date of the Navigable Waters Commission for Alaska until September 18, 2006. The Commission had been charged with expediting the process of settling title to the State's submerged lands. Membership on the commission, however, includes representatives of governments, and the bill requires authorization by the Alaska Senate and the U.S. Congress. Alaska Senate Bill 305 asserts the State's title to submerged lands by giving general notice that the State of Alaska claims title to navigable waters in the State; providing authority for the State to identify, in accordance with applicable Federal and State laws, which water bodies are navigable and which are not; and requiring the Commissioner of Natural Resources to notify Native corporations that they can obtain nonsubmerged acreage for submerged lands they may have received under the Alaska Native Claims Settlement Act.

The State of Alaska filed 13 applications that covered 31 water bodies for Recordable Disclaimers of Interest with BLM. A Disclaimer of Interest is a document issued by the Federal Government that confirms that it does not own Federal certain lands. In this case, the Federal Government agrees that it has no interest in the beds of certain navigable rivers and lakes. In 2004, the BLM issued a disclaimer for portions of the Black River and four of its tributaries—the Klutina River, Klutina Lake, Kvichak Lake, and Lake Iliamna. These are the first three such disclaimers to be issued in the United States.

In June 2004, the State reviewed and accepted TransCanada Corp.'s application under the Stranded Gas Development Act, which made it the third such application to be negotiated with companies interested in building a pipeline to move Alaska's North Slope gas to market. Calgary-based pipeline operator TransCanada and its wholly owned subsidiary Alaskan Northwest Natural Gas Transportation Co. have proposed building a 19-centimeter-diameter, steel pipeline from the North Slope to the Alaska-Yukon Territory border where 4.5 billion cubic feet per day of gas would feed into the Canadian portion of the project for distribution across North America. In addition to TransCanada, the State was actively negotiating with two other sponsor groups, which included the three major North Slope producers (BP, ConocoPhillips, and Exxon Mobil Corp.), and Enbridge Inc. (another Canadian pipeline company).

The ADNR revised the financial assurance requirements for large mine operators to allow sinking trust funds to be established and to require total financial assurance in the amount needed to reclaim a large lode mine site, rather than the previous $304 per hectare or $750 per acre rule, an amount that still holds for placer mines.

More than 2.8 million ha of Alaska burned during 2004. Wildfires threatened communities and mining operations across the State and particularly in the Eastern Interior region. The National Guard was mobilized to assist Federal and State firefighters. No serious accidents resulted from the fires, but several mining projects were partially to completely burned. As a result, all fire policies were placed under review.

Two employees from Taiga Mining Co. Inc. were awarded the 2004 annual State reclamation award by the ADNR in recognition of the company's excellent reclamation work on Bear Creek and its tributaries, Dry and Ida Creeks. The BLM recommended Taiga on the basis of Taiga's mining and reclamation plans that have created stream valleys with adequate floodplain widths and channel locations such that streams were reestablished with uniform slopes and appropriate widths and depths. These efforts reduced the stream headcutting, lateral migration, and subsequent sedimentation typical of new channels. The establishment of riparian vegetation within the active floodplain of Ida Creek was indicative of this channel's stability. Taiga had been mining in the Bear Creek Watershed for more than a decade. Approximately 81 ha had been mined and reclaimed. Bear Creek is located within the BLM's Hogatza River Area of Critical Environmental Concern, which a special management area created for its exceptional summer-run chum salmon spawning habitat.

Reference Cited

Plachy, Jozef, 2005, Zinc: U.S. Geological Survey Mineral Commodity Summaries 2005, p. 188-189.

Internet Reference Cited

Szumigala, D.J., and Hughes, R.A., 2005, Alaska's mineral industry 2004—Special Report 59, Alaska Division of Geological and Geophysical Surveys, 75 p., accessed November 10, 2005, at URL http://www.dggs.dnr.state.ak.us/scan1/sr/text/SR59.PDF.

TABLE 1
NONFUEL RAW MINERAL PRODUCTION IN ALASKA[1, 2]

(Thousand metric tons and thousand dollars unless otherwise specified)

Mineral	2002		2003		2004	
	Quantity	Value	Quantity	Value	Quantity	Value
Gemstones	NA	12	NA	12	NA	12
Gold[4] kilograms	16,900	170,000	W	W	W	W
Sand and gravel, construction	16,300	93,400	9,980	55,700	9,430 [3]	51,600 [3]
Silver[5] kilograms	559,000	83,100	W	W	W	W
Stone, crushed[6]	2,810 [r]	15,200 [r]	2,640	15,300	2,230 [3]	13,900 [3]
Combined values of lead, stone [crushed dolomite, granite, limestone, shell (2002), crushed granite and shell (2003-04)], zinc, and values indicated by symbol W	XX	695,000	XX	1,010,000	XX	1,200,000 [3]
Total	XX	1,060,000 [r]	XX	1,080,000	XX	1,270,000 [3]

[p]Preliminary. [r]Revised. NA Not available. W Withheld to avoid disclosing company proprietary data. Withheld values included in "Combined values" 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]Corrections posted August 4, 2006.

[4]Recoverable content of ores, etc.

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

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

	2002				2003			
Kind	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	W	--	--	--	--
Granite	2	W	W	$7.41 r	2	W	W	$7.25
Traprock	3	(3)	(3)	4.30	4	(3)	(3)	6.27
Shell	1	W	W	3.00	1	W	W	4.28
Miscellaneous stone	7	(3)	(3)	5.49 r	7	(3)	(3)	5.78
Total or average	XX	2,810 r	$15,200 r	5.42	XX	2,640	$15,300	5.81

rRevised. W Withheld from total to avoid disclosing company proprietary data. XX Not applicable. -- Zero.

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

TABLE 3

ALASKA: CRUSHED STONE SOLD OR USED BY PRODUCERS IN 2003, BY USE[1, 2]

Use	Quantity (thousand metric tons)	Value (thousands)	Unit value
Construction:			
Coarse aggregate (+1 1/2 inch):			
Riprap and jetty stone	W	W	$9.23
Filter stone	W	W	11.82
Total or average	15	$163	10.87
Coarse aggregate, graded:			
Concrete aggregate, coarse	W	W	7.87
Railroad ballast	W	W	7.72
Other graded coarse aggregate	8	73	9.13
Total or average	15	128	8.53
Coarse and fine aggregates:			
Graded road base or subbase	W	W	7.72
Unpaved road surfacing	W	W	10.70
Crusher run (select material or fill)	W	W	14.33
Other coarse and fine aggregates	13	98	7.54
Total or average	73	664	9.10
Unspecified:[3]			
Reported	2,430	13,800	5.68
Estimated	100	560	5.41
Total or average	2,540	14,400	5.67
Grand total or average	2,640	15,300	5.81

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

[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 Natural Resoures, 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 2003,
BY MAJOR USE CATEGORY[1]

Use	Quantity (thousand metric tons)	Value (thousands)	Unit value
Concrete aggregate and concrete products	1,750	$9,840	$5.65
Asphaltic concrete aggregates and other bituminous mixtures	682	6,410	9.40
Road base and coverings	1,210	6,940	5.75
Fill	2,610	10,200	3.91
Snow and ice control	101	1,010	9.99
Other miscellaneous uses[2]	9	92	9.75
Unspecified:[3]			
Reported	2,470	14,400	5.84
Estimated	1,200	6,700	5.86
Total or average	9,980	55,700	5.58

[1]Data are rounded to no more than three significant digits; may not add to totals shown.
[2]Includes railroad ballast.
[3]Reported and estimated production without a breakdown by end use.