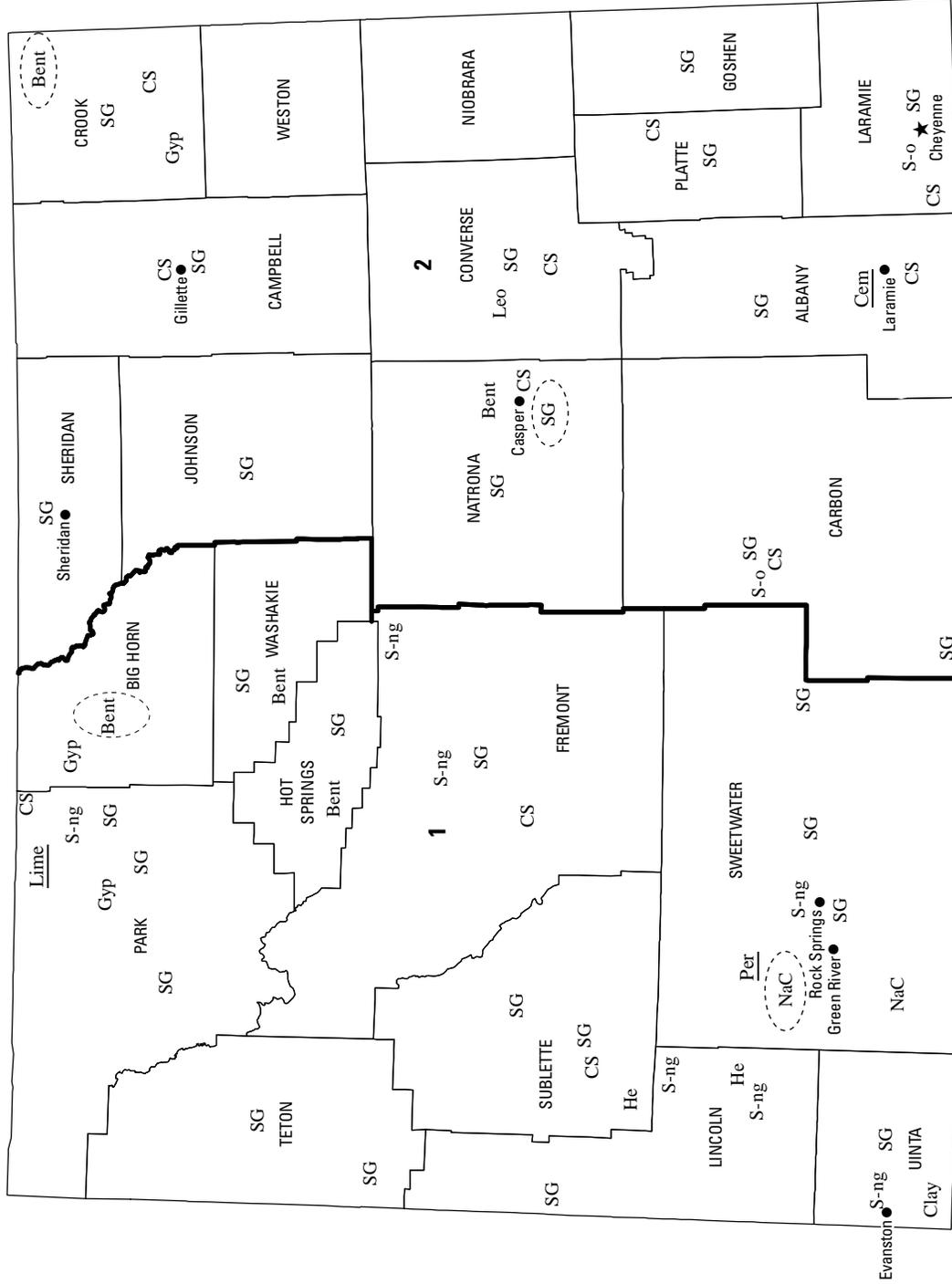




2007 Minerals Yearbook

WYOMING [ADVANCE RELEASE]

WYOMING

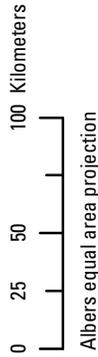


LEGEND

- County boundary
- ★ Capital
- City
- 1— Crushed stone/sand and gravel district boundary

MINERAL SYMBOLS (Major producing areas)

- Bent Bentonite
- Cem Cement plant and quarry
- Clay Common clay
- CS Crushed stone
- Gyp Gypsum
- He Helium
- Leo Leonardite
- Lime Lime plant
- NaC Sodium carbonate
- Per Perlite plant
- SG Construction sand and gravel
- S-ng Sulfur (natural gas)
- S-o Sulfur (oil)
- Concentration of mineral operations



Source: Wyoming State Geological Survey/U.S. Geological Survey (2007).

THE MINERAL INDUSTRY OF WYOMING

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

In 2007, Wyoming's nonfuel raw mineral production¹ was valued at \$1.75 billion, based upon annual U.S. Geological Survey (USGS) data. This was a \$160 million, or 10%, increase from the State's total nonfuel mineral production value for 2006, which was up \$290 million, or more than 22%, from that of 2005. For the third consecutive year, the State ranked 14th among the 50 States in total nonfuel raw mineral production value and in 2007 accounted for about 2.5% of the U.S. total value. For the second consecutive year, per capita, the State ranked second (first from 1996–2005) in the Nation in the value of its nonfuel mineral industry's raw mineral production; with a population of 523,000, the value of production was about \$3,360 per person.

Soda ash was Wyoming's leading nonfuel mineral, by value, followed by bentonite, Grade-A helium, construction sand and gravel, and portland cement. Together, the five accounted for slightly more than 95.5% of the State's total nonfuel raw mineral production value. In 2007, most of the State's nonfuel mineral commodities increased in value, with only crushed stone and crude gypsum having decreased for the year.

The largest increases in mineral commodity values, in descending order of change, took place in the production of soda ash, construction sand and gravel, Grade-A helium, and bentonite clay. A relatively small increase in soda ash production led to a more than \$100 million rise in its value and an 11% increase in the production of construction sand and gravel resulted in a 28%, or \$21 million, increase in that mineral commodity's production value. Smaller yet significant increases took place in the production values of lime, which had a small increase in production but a substantial increase in unit value, and portland cement. The largest decrease in mineral commodity value took place in crushed stone. A 4% decrease in crushed stone production coupled with lower unit values resulted in a more than 17%, or more than \$12 million, decrease in its production value (table 1).

In 2007, Wyoming continued to be first in rank in the quantities of soda ash and bentonite clay produced, and second in Grade-A helium production. Wyoming also continued to produce significant quantities of construction sand and gravel, crushed stone, and crude gypsum. The United States is the world's second leading producer of soda ash, which is produced mainly from trona ore. Wyoming was one of only two soda ash-producing States and hosts the world's largest (known) deposit of trona. Soda ash (sodium carbonate) is an inorganic

¹The 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 2007 USGS mineral production data published in this chapter are those available as of June 2009. All USGS Mineral Industry Surveys and USGS Minerals Yearbook chapters—mineral commodity, State, and country—can be retrieved over the Internet at URL <http://minerals.usgs.gov/minerals>.

chemical that is used extensively in the manufacture of glass, paper, soap and detergents, and textiles, and, in the form of sodium bicarbonate, in food products. California produced a significantly smaller quantity of natural soda ash.

The Wyoming State Geological Survey² (WSGS) provided the following narrative information. Production data in the text that follows are reported by the WSGS and are based on the agency's own surveys and estimates. They may differ from production figures reported to the USGS.

Exploration and Development

Wyoming's industrial minerals continued to present possibilities for both expanded and new production throughout 2007. Several companies expressed interest in Wyoming's nonbentonitic clay, chemical grade limestone, dimension stone and flagstone, gypsum, silica sand, and zeolite resources. Strong interest in Wyoming gemstones also continued during 2007. Diamond exploration across the State dominated gemstone activity. Strong markets accompanied the exploration for new deposits of bentonite and aggregate, primarily in support of energy development. The expanding economy also resulted in increased exploration for chemical-grade limestone, silica sand, and decorative stone.

Exploration interest in Wyoming's occurrences of copper, gold, platinum, and other metals remained high during 2007 as a result of continued high metals prices of the past 3 or 4 years. Continued high metals prices were anticipated with indications that metals exploration activity in Wyoming would continue its recent increasing trend.

During 2007, The uranium industry in Wyoming remained very active in response to the rising spot price of yellowcake, a uranium concentrate powder (commonly as crystals or granules) (mostly U₃O₈ or triuranium octoxide). The price hit a record high of \$304.24 per kilogram (kg) (\$138.00 per pound) in June, production nearly equaled that of 2006, and companies continued exploring and developing projects in anticipation of additional production in the following years. Wyoming remained the nation's leader in yellowcake production.

Industrial Minerals

Diamond.—Low-intensity exploration for diamonds, in particular for the common diamond host rock kimberlite and kimberlite pipe structures, continued across most of the State during 2007. Individual prospecting was concentrated, roughly by the intensity of exploration, in the Big Horn Basin, the Cedar Mountain area, the Medicine Bow Mountains, and in the Seminole Mountains.

²Wayne M. Sutherland, Geologist (gemstones, metals and economic geology specialist), and Robert Gregory, Geologist (uranium and minerals specialist) of the Wyoming State Geological Survey, coauthored the text of the State mineral industry information.

In early November, DiamonEx Ltd. (Brisbane, Australia) announced that it was engaged in more serious exploration activities. On November 5, the DiamonEx managing director announced the company's acquisition of more than 400 hectares (ha) (more than 1,000 acres) of diamond prospects in the Wyoming-Colorado State line kimberlite district and in the adjacent Happy Jack area. DiamonEx identified more than 150 prospective kimberlite exploration targets in the region (ABN Newswire, 2007). The State line district, the largest kimberlite district in the United States, sits along the southern edge of the Wyoming Craton. The Wyoming Craton is part of the ancient core of the North American continent (older than about 2.5 billion years) that extends southward from Canada beneath Montana and most of Wyoming. This stable part of the continent is thought to have high potential for diamond deposits (Hausel, 1998, p. 32–35).

Gemstones.—Even though diamond exploration dominated gemstone activity across the State, there was significant interest in exploring for corundum and jade in the Granite Mountains area. The release of information by Star Mountain Mining Co. concerning the company's large, deep-reddish-purple corundum crystals from the Granite Mountains-Pathfinder Reservoir area in central Wyoming heightened awareness of the possibility of new corundum discoveries. Star Mountain reported irregular to linear pods of mica schist hosting corundum crystals as large as 12.7 centimeters (five inches) long and more than 5 centimeters (two inches) in diameter. Rubies and sapphires from several parts of the Granite Mountains were reported as early as 1943 (Hausel and Sutherland, 2000), but these were only the first well-documented specimens. Ice Resources, Inc., a Canadian-controlled company, acquired claims for iolite, kyanite, and ruby deposits in the Laramie Mountains.

The collection and marketing of precious and semiprecious gemstones as well as unique geologic materials from Wyoming continued as a diverse and untracked small-scale activity. As in previous years, sale of these materials during 2007 by amateur collectors, prospectors, semiprofessionals, and professional dealers took place primarily at gem and mineral shows, in local jewelry and rock shops, and over the Internet. These mineral commodities included agates, iolite, jasper, kyanite, labradorite, nephrite jade, opal, quartz, ruby, sapphire, satin spar, and a wide variety of lapidary materials. Kimberlite, lamproite, and other types of rock specimens also were sold under similar conditions.

Sand, Industrial.—The Cassa silica deposit, which is in the Lower Cretaceous Cloverly Formation, was located southeast of Glendo. This high-purity sandstone deposit, which was previously evaluated and found to be nearly 99% SiO₂ (silicon dioxide) (Harris, 1988), averaged 5.5 meters (m) [18 feet (ft)] in thickness, with little to no overburden, and occupied slightly more than 240 ha (600 acres). No detectable boron, a problem contaminant in some of the State's silica deposits, was found in the silica rock in the deposit. The silica from this site could be used in the manufacture of semiconductors and photoelectric solar cells. During the second half of 2007, the Cassa silica deposit also received serious consideration as a possible source for metallurgical-grade silicon. Advantages for potential development of the site included easily mined material, nearby

rail and highway transportation, and proximity to electric power and water.

Stone, Dimension.—Interest in the decorative stone resources of Wyoming by companies outside the State significantly increased during 2007. Companies from as far away as California, Vermont, and Virginia inquired and considered Wyoming as a potential source of domestic stone products as their interest focused on domestic rather than foreign sources of flagstone, marble, sandstone, and any other stone of a unique appearance. The State had extensive deposits of high-quality decorative stone, including those of gneiss, granite, limestone, marble, quartzite, sandstone, and some volcanic rock (Harris, 1991, p. 4; 2003, p. 7).

Metals

Copper, Gold, and Silver.—Black Range Minerals had encouraging results from drilling at the Ferris-Haggerty Mine in the Sierra Madre and extended its option on the property for another 12 months. The company's 2007 drilling confirmed high-grade base and precious-metal mineralization. Drilling intercepts included 2.2 m of 5.04% copper with 1.21 grams per metric ton (g/t) gold and 5.95 g/t silver, and 0.4 m of 1.72% copper and 0.16% nickel with 0.11 g/t gold and greater than 10,000 g/t [more than 290 troy ounces per short ton] silver (Black Range Minerals, 2007a, p. 1, 10, 16–17; b). Additional drilling was planned for the second quarter of 2008 (Black Range Minerals, 2007b). Black Range Minerals' exploration at the mine was the first modern drilling and evaluation of the property.

The high-grade Ferris-Haggerty deposit hosted the world's 27th largest copper mine near the start of the 20th century. The mine closed in 1908 after copper prices declined and fire destroyed the mine's processing facilities. The Ferris Haggerty deposit was last examined in 1988 by Exxon Minerals Co. and its evaluation projected about 840,000 metric tons (t) [929,000 short tons (st)] of ore containing 6.5% copper and 3,600 kg (117,000 troy ounces) of gold (U.S. Geological Survey, 1997, p. 2–3).

Wyoming Gold Mining Co. completed 27 core holes in the Silver Crown mining district in the Laramie Mountains west of Cheyenne. The company collected 5,490 m (18,000 ft) of core to evaluate the potential of the copper/gold deposit. Evaluation of the data from the coring program was projected for completion during spring 2008 (Norm Burmeister, manager, Wyoming Gold Mining Co., oral commun., January 28, 2008).

Gold.—Golden Predator Mines Inc. (Vancouver, British Columbia, Canada) in association with Bald Mountain Mining Co. continued exploration in the Rattlesnake Hills, about 72 km (45 miles) west of Casper. The Rattlesnake Hills gold exploration area is located within a fragment of Archean supracrustal rocks dominated by metagreywacke, metabasalt, and metagabbro intruded by Eocene trachytic to phonolitic dikes. The WSGS discovered gold in the Rattlesnake Hills in 1982. Between 1983 and 1987, American Copper and Nickel Co. (Golden, CO) drilled 32 holes totaling about 3,000 m and found significant gold mineralization in Archean iron

formation in Tertiary alkalic volcanic rocks. Newmont Mining Corp.'s Exploration Division (Denver, CO) continued work in the area, drilling 14 holes totaling 3,260 m between 1993 and 1995 (Hausel, 1996). The company encountered a large zone of low-grade gold mineralization in the Tertiary alkalic volcanic rocks. By yearend 2006, about 1,560 ha, comprising 127 unpatented claims and three State leases of the Rattlesnake Hills area were under exploration (Golden Predator Mines, Inc., 2006b). On October 11, Golden Predator stated that they planned to continue exploration in the Rattlesnake Hills through a joint venture with Evolving Gold Corp. (Golden Predator Mines, Inc., 2007b).

The Lewiston District, about 14 km southeast of South Pass City and within the South Pass greenstone belt, was also targeted for exploration by Golden Predator Mines. Gold-bearing shear zones in chloritized hematitic metagreywacke in the Miners Delight Formation were characteristic of historic mines within the Lewiston District. Those mines rarely exceeded 30 m in depth. Historic gold occurrences, found as fracture fillings in quartz or associated with sulfides, varied ranging from trace amounts to rare specimen-grade ore showing as much as 106 kilograms per metric ton (3,100 troy ounces per short ton) (Hausel, 1989, p. 40; 1991, p. 12). Golden Predator began geophysical surveys and sampling in the area during summer 2006; a comprehensive evaluation of the Lewiston District had not previously been undertaken. The company scheduled some exploratory drilling to begin in early summer 2008 (Golden Predator Mines, Inc., 2007a). Golden Predator's interest in the area included approximately 200 claims representing nearly 1,600 ha (Golden Predator Mines, Inc., 2006a).

For the Sundance gold exploration joint venture between Rare Element Resources Ltd. and Newmont North America Exploration Ltd. in the Bear Lodge Mountains, Rare Element Resources reported encouraging results from their 2007 drilling program. The drilling of the final 7 of the 15 holes planned for the company's 2007 program began in October and expanded the gold-mineralized zone in their Carbon target area, with mineralization remaining open in several directions. Among their intercepts was slightly more than 85 m of 0.47 g/t gold that included about 9.1 m of 1.18 g/t gold. Newmont subsequently worked to expand its permitted area to allow drilling on as much as 81 ha (200 acres) during 2008 (Rare Element Resources Ltd., 2008).

Significant gold occurrences in the large, strongly altered alkaline-igneous complex of the Bear Lodge property improved understanding of alkaline-igneous gold systems and continued high gold prices intensified interest in the area. Anomalous antimony, arsenic, gold, and tellurium coincides with potassic alteration over much of the property. Highest reported gold values of 10 g/t gold came from surface samples in an area referred to as the Taylor prospect. The Bear Lodge alkaline-igneous complex has been compared to the similar but more deeply eroded Cripple Creek mining district in Colorado (Rare Element Resources Ltd., 2008).

Platinum-Group Metals.—Rocky Mountain Resources Corp. (Vancouver, British Columbia, Canada) continued platinum-group metals exploration in the Medicine Bow Mountains with its Lake Owen project. The company

announced the completion of a detailed ground magnetic survey of its entire 4,000 ha-claim block (18-square miles) (Rocky Mountain Resources Corp., 2007b). Rocky Mountain also finished a 2,600-rock-chip and soil geochemical survey to test platinum and palladium anomalies identified in its ground magnetic surveys; compilation of the survey was not completed at yearend. Approximately 760 m (2,500 ft.) of core collected by Chevron Resources Corp., which drilled the property between 1983 and 1992, was scheduled to be split and assayed for platinum. Contingent on the success of these studies, new drilling was planned to test known anomalies and horizons of interest (Rocky Mountain Resources Corp., 2007a).

The Lake Owen layered mafic complex crops out over a 6,470-ha area (25-square-miles) in the form of a funnel-shaped intrusive tilted at an average 75° on its side, and exposing a cross-section with at least 18 cyclic layered units. Anomalous platinum occurred in labradorite-bearing gabbroic norite; cumulus sulfides were identified in at least 12 stratigraphic horizons in the complex; and some zones contained elevated gold and platinum, plus or minus palladium (Loucks and Glasscock, 1989, unpub. data, December 24, 1989). Rocky Mountain Resources explored for ore-grade platinum-group mineralization along the base of magnetite-rich horizons possibly later intruded by olivine gabbro (Rocky Mountain Resources Corp., 2007a). Optimism stemmed from the similarities of the Lake Owen complex to well known platinum-palladium deposits in the Stillwater complex in Montana and the Bushveld complex in South Africa.

The Lake Owen layered mafic complex was essentially underformed, unmetamorphosed, and had intruded the Green Mountain terrain south of the Mullen Creek-Nash Fork shear zone. The Green Mountain terrain was part of an oceanic island arc accreted western North America at about 1.78 billion years ago. Lake Owen and the surrounding area were included within the WSGS's preliminary geologic map of the 1:100,000-scale Saratoga Quadrangle (Sutherland and Hausel, 2005).

Rare Earths.—In addition to its gold joint venture with Newmont, Rare Element Resources, Ltd. explored the Bear Lodge complex for rare-earth elements. Near yearend, Rare Element Resources reported four separate mineralized intervals in one drill hole with an aggregate thickness of nearly 34 m (112 ft.) that averaged 4.69% of rare-earth oxides (Rare Element Resources Ltd., 2007). Mineralization occurred in carbonatite dikes and in an iron-manganese-rare-earth-element dike. By convention, company assays are reported as combined rare-earth oxide equivalents of the 15 lanthanide-series elements. Oxide equivalents for the Bear Lodge property were roughly 17% higher than the combined metal assay values. The Bear Lodge property mainly hosted the light rare-earth elements (LREE) dominated by cerium, lanthanum, neodymium, and praseodymium with additional europium, gadolinium, and samarium (Rare Element Resources Ltd., 2007).

Mineral Fuels and Related Materials

Uranium.—Power Resources, Inc. (Douglas, WY) planned additional wells at the company's Smith Ranch-Highland in-situ operation in Converse County and the addition, in 2009, of

an in-situ operation in the Gas Hills area of Fremont County. Additionally, several other companies were at various stages of permitting and licensing for new production elsewhere in the State. Several well fields were planned in the western and southern Powder River Basin, the Gas Hills area of the Wind River Basin, and the Crooks Gap and Great Divide Basin areas in south-central Wyoming. More than a dozen additional operations were planned with production beginning in the following 2 to 5 years, most of them being in-situ leach operations.

In the western Powder River Basin, primarily in the Pumpkin Buttes uranium district, several companies were developing in-situ projects. Among these projects were Christiansen Ranch, Moore Ranch, Nichols Ranch, a project in the Pine Tree-Reno Creek area, and the Hank project. In the southern Powder River Basin, expanded production was being planned at the greater Smith Ranch-Highland, with additional in-situ mining in the nearby Reynolds Ranch area. To the southwest of Smith Ranch-Highland at least two companies planned in-situ projects northeast of Glenrock.

In the Gas Hills area of the Wind River Basin, several deposits still contained minable reserves, recoverable by both open pit and in-situ leach methods. Among the fields projected to produce in the following 2 to 5 years were Strathmore Minerals Corp.'s (based in Kelowna, British Columbia, Canada) Andria, Day Loma, Jeep, and the newly staked Beaver Rim areas. Another property, Sky, located about 32 kilometers (km) west of the Gas Hills, was in the permitting stage and was minable by in-situ leach methods.

The Great Divide Basin (GDB), in the northeastern portion of the Greater Green River Basin, contained several minable sandstone-hosted uranium deposits that were expected to begin producing within the following 3 to 4 years. Ur-Energy USA, Inc., (Ken Caryl Ranch, CO) was developing several projects in the GDB, and expected in-situ production in late 2010: the Lost Creek Project was likely to be the first field to produce. The company planned to process pregnant solution to produce yellowcake slurry that would then be transported to a licensed drying facility. Ur-Energy applied to the U.S. Nuclear Regulatory Commission for a license to build a drying facility near the GDB projects, and hoped to be packaging yellowcake in 3 to 4 years. Other projects in the GDB were at various stages of permitting and resource evaluation by several other companies.

At the southern extent of the Greater Green River Basin in Wyoming, Strathmore Minerals was permitting the Juniper Ridge Project in the Poison Basin uranium mining district just west of Baggs.

Commodity Review

Industrial Minerals

Bentonite.—Although bentonite plant production decreased by nearly 3%, the value of produced bentonite rose by slightly more than 8% to near \$227 million.

Helium.—Wyoming was the second leading State in the production of Grade-A helium with more than 20% of U.S. production.

Limestone.—Pete Lien & Sons, Inc. announced that the company would begin construction of a new limestone quarry and a \$50 million lime plant 16 km north of Laramie where they planned the mining of high-purity limestone from the Casper Formation. Construction was expected to begin in 2008 or 2009 on the facility. The operation was planning to produce fine-grind limestone, typically used as a livestock feed supplement and in glass manufacturing, and to produce lime, which was used as a scrubbing agent for reducing smokestack emissions, as a neutralizer in water treatment, and in sugar refining process. Reserves were projected to potentially support mining for 75 to 100 years (Wagner, 2007). The quarry and plant will employ 50 to 60 workers. Anticipated annual economic benefits from the operation included a \$3-million payroll, almost \$50,000 in sales taxes, \$16,500 in severance taxes, and more than \$208,000 in property taxes (LeClair, 2008).

Soda Ash.—Soda ash production increased slightly during 2007, equaling the previous record set in 2005. Four companies operating five plants in the Green River Basin in southwestern Wyoming accounted for the vast majority of U.S. domestic production. The total value of the 2007 U.S. production was \$1.3 billion for 11.1 million t (12.2 million st) of soda ash. All producers raised prices by \$16.50 per metric ton (\$15 per short ton) during the summer, and two companies again raised prices by another \$16.50 per metric ton beginning in September, with an additional processing surcharge of \$7 per million British Thermal Units (BTUs) of energy used in the production of the soda ash because of higher natural gas prices. The manufacture of glass, chemicals, and soap and detergents accounted for 88% of the end uses for soda ash in 2007, and the remaining end uses were as distributors, miscellaneous uses, as a chemical agent in flue gas desulfurization, in pulp and paper manufacture, and in water treatment (Kostick, 2008).

Zeolites.—The wide variety of uses for natural zeolite made it valuable to many industries. The WSGS received numerous inquiries on Wyoming's zeolite resources, including the mineral's potential for the treatment of water produced during coal-bed natural gas production. However, Wyoming's lone commercial zeolite quarry, which was located in the Washakie Basin southeast of Rock Springs, remained inactive during 2007.

Mineral Fuels and Related Materials

Uranium.—Wyoming had one active mine during 2007, the Smith Ranch-Highland in-situ operation. The mine was operated by Power Resources, Inc. (a subsidiary of Cameco Corp. of Saskatoon, Saskatchewan, Canada). In 2007, Smith Ranch-Highland produced 900 t (more than 1,980,000 pounds) of yellowcake, a uranium concentrate powder (oxide) obtained from leach solutions; this was down 3% from the 927 t (more than 2,040,000 pounds) produced in 2006.

Government Activities

The WSGS continued to be an active participant in the STATEMAP program. STATEMAP is a component of the congressionally mandated National Cooperative Geologic Mapping Program (NCGMP), through which the USGS distributes Federal funds to support geologic mapping efforts through a competitive funding process. The NCGMP has three primary components: (1) FEDMAP, which funds Federal geologic mapping projects, (2) STATEMAP, which is a matching-funds grant program with State geological surveys, and (3) EDMAP, a matching-funds grant program with universities that has a goal to train the next generation of geologic mappers. The Bear Lodge Mountains, under exploration for both gold and rare-earth elements, were mapped by the WSGS in cooperation with the USGS as part of the STATEMAP program. The WSGS' geologic map of the 30' x 60' Sundance Quadrangle included the southern portion of the Bear Lodge Mountains (Sutherland, 2007a), and the agency's 30' x 60' Devils Tower Quadrangle mapping covered the northern portion (Sutherland, 2007b).

The WSGS introduced a new, more fully organized WSGS Web site. The agency was in the process of instituting the changes necessary for the Web site to be continuously updated so as to meet changing information, ideas, and demands. For additional information on the State's minerals and minerals production, recent publications, and further information on the geology of Wyoming, visit the WSGS home page at <http://www.wsgs.uwyo.edu/>.

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TABLE 1
NONFUEL RAW MINERAL PRODUCTION IN WYOMING^{1,2}

(Thousand metric tons and thousand dollars)

Mineral	2005		2006		2007	
	Quantity	Value	Quantity	Value	Quantity	Value
Clays:						
Bentonite	4,160	190,000	4,360	209,000	4,250	227,000
Common	53	128	53	206	59	226
Gemstones, natural	NA	14	NA	14	NA	15
Sand and gravel, construction	11,700	52,400	17,200	74,600	19,100	95,800
Stone, crushed	6,990	39,800	12,500 ^r	71,100 ^r	12,000	58,700
Combined values of cement (portland), gypsum (crude), helium (Grade-A), lime, soda ash, zeolites	XX	1,010,000	XX	1,240,000	XX	1,370,000
Total	XX	1,300,000	XX	1,590,000	XX	1,750,000

^rRevised. NA Not available. XX Not applicable.

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

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

TABLE 2
WYOMING: CRUSHED STONE SOLD OR USED, BY TYPE¹

Type	2006			2007		
	Number of quarries	Quantity (thousand metric tons)	Value (thousands)	Number of quarries	Quantity (thousand metric tons)	Value (thousands)
Limestone ²	20	3,460 ^r	\$19,700 ^r	20	2,960	\$18,400
Sandstone and quartzite	1	(³)	1	--	--	--
Volcanic cinder and scoria	9	4,470	25,400	12	4,100	23,800
Miscellaneous stone	12 ^r	4,630 ^r	26,000 ^r	4	4,950	16,500
Total	XX	12,500 ^r	71,100 ^r	XX	12,000	58,700

^rRevised. XX Not applicable. -- Zero.

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

²Includes limestone-dolomite reported with no distinction between the two.

³Less than ½ unit.

TABLE 3
WYOMING: CRUSHED STONE SOLD OR USED BY PRODUCERS IN 2007, BY USE¹

(Thousand metric tons and thousand dollars)

Use	Quantity	Value
Construction:		
Coarse aggregate (+ 1½ inch), riprap and jetty stone	W	W
Coarse aggregate, graded:		
Concrete aggregate, coarse	W	W
Bituminous aggregate, coarse	W	W
Bituminous surface-treatment aggregate	W	W
Railroad ballast	W	W
Coarse and fine aggregates:		
Graded road base or subbase	W	W
Unpaved road surfacing	W	W
Crusher run or fill or waste	W	W
Other construction materials	14	84
Chemical and metallurgical, cement manufacture	W	W
Special, asphalt fillers or extenders	W	W
Unspecified: ²		
Reported	9,943	45,696
Estimated	834	4,908
Total	12,005	58,680

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

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

²Reported and estimated production without a breakdown by end use.

TABLE 4
WYOMING: CRUSHED STONE SOLD OR USED BY PRODUCERS IN 2007, BY USE AND DISTRICT¹

(Thousand metric tons and thousand dollars)

Use	District 1		District 2		Unspecified districts	
	Quantity	Value	Quantity	Value	Quantity	Value
Construction:						
Coarse aggregate (+ 1½ inch) ²	--	--	W	W	--	--
Coarse aggregate, graded ³	--	--	W	W	--	--
Coarse and fine aggregate ⁴	--	--	W	W	--	--
Other construction materials	--	--	14	84	--	--
Chemical and metallurgical ⁵	--	--	W	W	--	--
Special ⁶	--	--	W	W	--	--
Unspecified: ⁷						
Reported	132	779	7,536	44,335	2,275	583
Estimated	72	425	762	4,484	--	--
Total	204	1,204	9,526	56,894	2,275	583

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

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

²Includes riprap and jetty stone.

³Includes bituminous aggregate (coarse), bituminous surface-treatment aggregate, concrete aggregate (coarse), and railroad ballast.

⁴Includes crusher run or fill or waste, graded road base or subbase, and unpaved road surfacing.

⁵Includes cement manufacture.

⁶Includes asphalt fillers or extenders.

⁷Reported and estimated production without a breakdown by end use.

TABLE 5
WYOMING: CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN 2007,
BY MAJOR USE CATEGORY¹

Use	Quantity (thousand metric tons)	Value (thousands)	Unit value
Concrete aggregate (including concrete sand) ²	814	\$7,940	\$9.76
Asphaltic concrete aggregates and other bituminous mixtures	705	7,460	10.59
Road base and coverings	3,820	19,600	5.13
Fill	568	2,950	5.18
Snow and ice control	8	120	15.00
Railroad ballast	11	106	9.64
Other miscellaneous uses	992	3,990	4.03
Unspecified: ³			
Reported	6,840	26,000	3.80
Estimated	5,300	28,000	5.18
Total or average	19,100	95,800	5.02

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

²Includes plaster and gunite sands.

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

TABLE 6
WYOMING: CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN 2007,
BY USE AND DISTRICT¹

(Thousand metric tons and thousand dollars)

Use	District 1		District 2		Unspecified districts	
	Quantity	Value	Quantity	Value	Quantity	Value
Concrete aggregates (including concrete sand) ²	614	6,400	200	1,540	--	--
Road base and coverings	1,710	11,100	1,930	7,940	177	576
Fill	412	2,330	156	620	--	--
Other miscellaneous uses ³	490	4,590	937	4,550	289	2,550
Unspecified: ⁴						
Reported	1,820	8,140	1,720	7,450	3,310	10,400
Estimated	2,700	13,000	1,800	11,000	800	3,400
Total or average	7,780	45,300	6,760	33,500	4,550	17,000

-- Zero.

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

²Includes plaster and gunite sands.

³Includes asphaltic concrete aggregates.

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