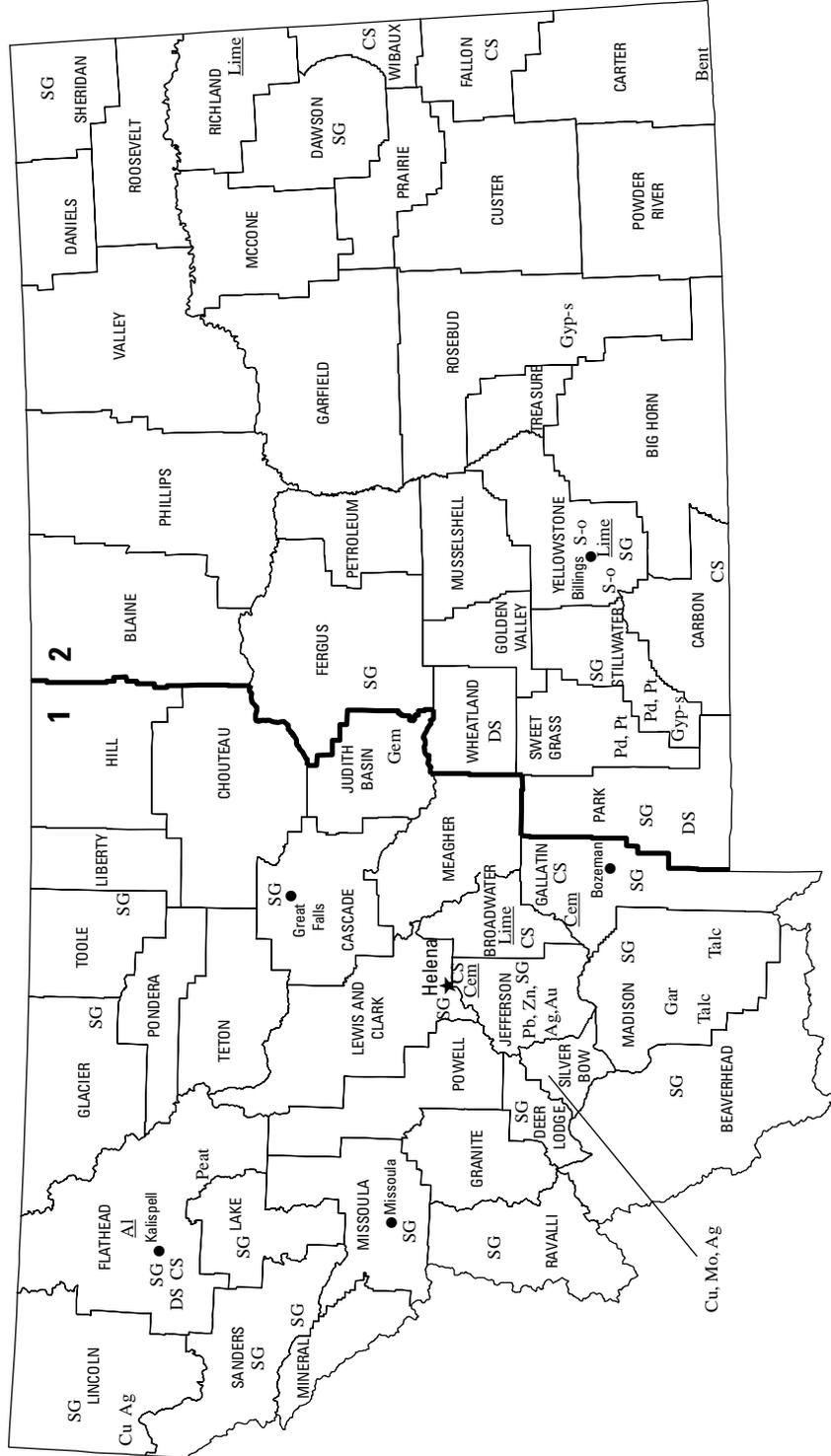




2006 Minerals Yearbook

MONTANA

MONTANA

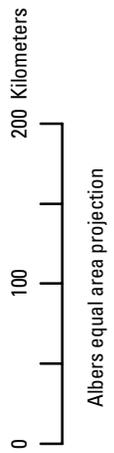


LEGEND

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

MINERAL SYMBOLS (Major producing areas)

- Ag Silver
- Al Aluminum plant
- Au Gold
- Bent Bentonite
- Cem Cement plant
- CS Crushed stone
- Cu Copper
- DS Dimension stone
- Gar Garnet
- Gem Gemstones
- Gyp-s Synthetic gypsum
- Lime Lime plant
- Mo Molybdenum
- Pb Lead
- Pd Palladium
- Peat Peat
- Pt Platinum
- S-o Sulfur (oil)
- SG Construction sand and gravel
- Talc Talc
- Zn Zinc



Source: Montana Bureau of Mines and Geology/U.S. Geological Survey (2006).

THE MINERAL INDUSTRY OF MONTANA

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

In 2006, Montana's nonfuel raw mineral production¹ was valued at \$1.07 billion, based upon annual U.S. Geological Survey (USGS) data. This was an increase of \$223 million, or more than 26%, from the value of 2005, which in turn was up \$226 million, or up nearly 36%, from that of 2004. The State rose in rank to 21st from 24th among the 50 States in nonfuel raw mineral production value and accounted for about 1.6% of the U.S. total. Yet, per capita, the State ranked 5th in the Nation in the value of its nonfuel mineral production; with a population of about 945,000, the value of production was nearly \$1,130 per capita.

Metallic minerals accounted for nearly 79% of Montana's total nonfuel mineral production value in 2006. Copper, molybdenum concentrates, platinum, and palladium were, in descending order of value, the State's leading nonfuel minerals, followed by construction sand and gravel, cement (portland and masonry), and gold, the combined total of which accounted for more than 92% of the State's total nonfuel mineral value, up from 89% in 2005. In 2006, increases in the mineral production values of copper, palladium, and platinum led Montana's increase in value with increases of more than \$100 million, about \$63 million, and more than \$45 million, respectively (table 1); the unit values of each also rose significantly. Smaller yet significant increases took place, in descending order of change, in the values of construction sand and gravel (up by \$11.7 million), cement, gold, lime, crushed stone (up by \$2.6 million), silver, and crude talc. The unit values of each also showed significant increases, except that of lime which was down by 6%. The largest decrease in mineral production value from 2005 to 2006 took place in molybdenum concentrates, zinc, and lead, down more than \$15 million, more than \$10 million, and more than \$5 million, respectively. Although small in comparison to most of the State's other mineral commodities, the value of gemstones also significantly decreased, down more than 40% (table 1). Several mines, including one of the State's major sapphire mines, closed in 2006.

In 2006, Montana continued to be the only State to have primary palladium and platinum mine production. It also continued to be first in the quantity of talc produced, third of three industrial garnet-producing States, and fifth in copper, molybdenum concentrates, gold, and silver (listed in descending order of production value). The State rose in rank to second from third in bentonite, decreased to eighth from sixth in

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 2006 USGS mineral production data published in this chapter are those available as of March 2008. 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>.

gemstones (based upon value), and remained a significant producer of construction sand and gravel.

The Montana Bureau of Mines and Geology² (MBMG) provided the narrative information that follows. Production and other data in the following text are those reported by the MBMG, based upon its own surveys and estimates. The data may differ from some production figures reported by the USGS.

Exploration and Development

Southwest of Superior and St. Regis, Golden Eagle Mining continued a mapping and sampling program in the Superior Gold Belt. Results of soil sampling along mineralized areas indicated gold contents between 300 parts per billion (ppb) and 500 ppb. The company hoped to expand its exploration efforts into trenching and drilling programs during 2007.

Kennecott Exploration Company, Salt Lake City, UT, completed a survey of its Copper Cliff property near Clinton using induced polarization (IP) and resistivity geophysical exploration methods. Survey results indicated that a good target depth for initial drilling was about 300 meters (m). A diamond drilling test completed to a depth of 550 m revealed favorable copper mineralization. Kennecott planned to continue its drilling program into 2007.

O.T. Mining Corporation, Montreal, Quebec, Canada, continued to explore for Butte-type porphyry copper mineralization at the company's Ruby property, north of Butte. Further IP and resistivity geophysical exploration identified several sulfide targets at a depth of 335 m beneath the Lowland Creek volcanics. O.T. Mining planned to drill 18 diamond-drill holes on these North Anomaly area targets in 2007. Drilling in this area had been delayed several years as a result of legal appeals by environmental groups to halt such drilling. Limited exploration drilling just south of the northernmost identified targets revealed subeconomic mineralization.

Exploration drilling by O.T. Mining for precious metals in the southern area of the Ruby property revealed chloritic alteration and disseminated pyrite/chalcopyrite veinlets. The company interpreted this intercept as the fringe of a copper-molybdenum system rather than an epithermal precious metal system.

Near Silver Star, Coronado Resources Ltd., Vancouver, British Columbia, Canada, completed drilling an additional eight holes on its Madison copper-gold project. This drill program augmented previous extensive drilling by other companies as well as Coronado's program which was conducted in 2005. A report commissioned by the company verified the existence of four skarn zones and a massive sulfide zone. The company contracted with Blue Range Engineering Company Inc. of Butte to drive a 213-m decline at a 15% grade into the zones to

²Robin B. McCulloch, Associate Research Mining Engineer, authored the text of the State mineral industry information provided by the Montana Bureau of Mines and Geology

facilitate further definition drilling (Coronado Resources Ltd., 2006). A permit was secured to allow water to be pumped from the original mine workings at the Madison site, thereby enabling Coronado to develop areas below the water table.

Millstream Mines Ltd., Toronto, Ontario, Canada, drove a 62-m decline with a 15% grade at its Tamarack Mine near Sheridan, encountering a gold-bearing mineralization zone at the 42-m level. A 0.6-m-wide channel sample of this mineralization zone assayed 15.5 grams per metric ton (g/t) of gold (Millstream Mines Ltd., 2006b). Millstream began to stockpile mined ore at the mine portal and was developing a small mill near the mine to process the ore. A representative sample of the stockpiled ore assayed 10.2 g/t gold (Millstream Mines Ltd., 2006a).

At Marysville, RX Exploration Inc., Toronto, Ontario, Canada, drilled six holes at the Drumlummon Mine. Initial results from the drilling program indicated gold contents between 3.4 g/t and 5.2 g/t (RX Exploration Inc., 2007).

West of Marysville, Montana Molybdenum, Inc. completed preliminary mill testing of sample lots obtained from the Bald Butte Mine. Molybdenum recovery was low and was attributed to mineralogy problems associated with the mixed oxide/sulfide content of the sample lots of the ore. The company planned to continue exploration with an extensive drilling program at Bald Butte in 2007.

Near Helmville, Darden Engineering, Inc. identified previously unknown Tertiary channels of gold-bearing gravels in the foothills of the Finn District. Although the sampling was not complete, preliminary results indicated that the gold may have been from an epithermal source on the southern end of the mining district. Mapping results on the north end of the district revealed the possibility of a skarn source. The lode target may be the contact between Proterozoic middle belt carbonates and the granitic intrusive exposed at the top of the range.

Elkhorn Goldfields, Inc. further defined its current ore body near Elkhorn using angled diamond drilling methods, but ore body limits remained undefined on the north and east sides. The company received a permit to proceed with an exploration decline that will allow for definition drilling and obtaining of a bulk ore sample for milling test. Pump tests for dewatering the ore zone were completed during the year, as Elkhorn continued its development of the ore body toward the production stage. In 2007, the company planned to include drilling tests at the Mt. Haggin and Gold Hill ore zones as part of its overall development program. Elkhorn also purchased the Diamond Hill Mine and mill from Montana Tunnels Mining, Inc.

Northeast of Twin Bridges, Big Timber Minerals & Reclamation Inc. was in the process of developing a plan to mine the Johnson-Moffit copper skarn deposit. The ore body is garnet-chalcopyrite skarn along a highly altered granitic intrusive and limestone contact. Drilling by the USGS and the U.S. Bureau of Mines during World War II outlined a potential ore reserve that was further drilled by companies after the war. Big Timber completed a number of metallurgical tests on the deposit during the year. Results of these tests were considered favorable for continued sampling and testing of the ore body. The company planned to begin some open pit mining with recovery of the copper oxides attained using heap-leaching techniques. The sulfide zone of the ore body was being

considered as an underground mining target. The copper would be recovered using conventional flotation mill processing.

Near Nye, Beartooth Platinum Corporation drilled 11 core holes in the Iron Mountain area. The intercepts in the "B" chromite zone were 0.6 m to 1.2 m wide with grades of 3.4 g/t total gold and platinum-group metals. The highest grade detected in the intercepts was 13.5 g/t total gold and platinum-group metals.

Trend Mining Company, Littleton, CO, continued drilling at the Mouat property southwest of the Stillwater Mine in the Beartooth uplift, but had to suspend exploration because of a forest fire. Trend planned to reopen the Mouat portal (Mountain View) in 2007, enabling an expanded sampling of the copper-nickel zone in the Stillwater Complex (Trend Mining Company, 2006).

Commodity Review

Industrial Minerals

Cement.—Holcim (U.S.), Inc. maintained steady cement production throughout the year at its Trident plant near Three Forks. Total production declined compared with that of 2005 as the market softened slightly in 2006. A draft environmental impact statement (EIS) was received pertaining to Holcim's proposal to partially substitute used tires for coal as a fuel in its operations. The final EIS was anticipated in the first half of 2007. Holcim's cement-kiln-dust recycling project was completed, resulting in less production of waste material.

Garnet.—Ruby Valley Garnet, LLC continued to modify its mill near Alder in order to decrease the hornblende content in concentrates obtained from the company's Red Wash deposit. Installation of additional spirals in the mill circuit yielded garnet concentrates in excess of 92% for the production of coarser-sized garnets. The company continued to search for a solution to a similar concentrate problem in the production of finer-sized garnets for use in the water-jet market. RubyValley also initiated an evaluation of garnet recovery from the dredge tails in upper Alder Gulch. Initial test results indicated 6% to 7% recoverable-garnet grades in the dredge tails.

Apex Abrasives Company was issued a permit to reprocess the garnet-rich tailings from the former General Electric tungsten mill south of Melrose. Apex planned to produce garnet and tungsten concentrates from the tailings. The recovered garnet sand was expected to be sold as water-jet cutting media. Remaining waste material was to be incorporated into the reclamation of the original tailings ponds at the tungsten mill. In this case, the waste of one mine has become the ore of another with resulting benefit to the environment.

Lime.—Graymont Western US Inc., Salt Lake City, UT, maintained production near the plant's capacity level at its Indian Creek burnt lime plant near Townsend. A recently completed drill program at the limestone quarry near the plant revealed that the thickness of the minable limestone zone doubles to the south of current mining operations. The purity of the limestone is sufficiently high to meet the requirements of the precipitated calcium carbonate market. The company was in the process of obtaining a life-of-mine expansion permit that

would extend the current mine area by 745 hectares. Graymont also was constructing a haul road west of the boundary with the National Guard Firing Range.

Talc.—Barretts Minerals Inc. (a wholly owned subsidiary of Minerals Technologies Inc.) produced steadily at the Regal and the Treasure talc mines near Dillon. An environmental assessment for relocating the county road, which would isolate the road from the public, and redesign the waste dumps at the Regal Mine was in review. Additional ore definition drilling tests also were conducted at the Regal Mine. At the Treasure Mine, the company completed a long-term reclamation project of its waste-rock dumps. Improvements at Barretts' processing facilities included the installation of a new jet mill, silos, and a thickener. Transportation of material was a concern throughout the year as a result of difficulties in obtaining replacement tires for the company's large vehicles.

Production of talc by Luzenac America Inc. from its Yellowstone talc mine, south of Ennis, remained steady throughout the year. Luzenac received a Montana Pollutant Discharge Elimination System (MPDES) permit from the Montana Department of Environmental Quality for discharging water from its facilities. In addition, the company received a permit allowing for the storage of additional overburden from its mining operation. Luzenac became part of Rio Tinto Minerals in 2005 through a management consolidation of three industrial minerals companies.

Metals

Copper and Silver.—In the northwest corner of the State, Genesis, Inc. (a subsidiary of Revett Silver Company, Spokane, WA) continued production of copper and silver from the Troy Mine, processing ore at a rate of about 2,270 metric tons per day (t/d). Production rates were limited by a shortage of skilled labor, lack of access to ore feed material, and difficulties in acquiring equipment. Genesis initiated an extensive drilling program near the south adit during the year, targeting the two lower mineralized zones that had been successfully drilled at other locations in the mine. Preliminary drilling results from these zones indicated that the reserve base at the mine would likely be expanded to 7 years. Consideration was given to the possibility of backfilling the mined areas to facilitate pillar recovery as a mining method.

Revett Silver Company received permits to operate its Rock Creek Mine after earlier permits had been withdrawn by the U.S. Fish and Wildlife Service because of concerns voiced by local environmental groups. In receiving the permits, Revett Silver presented a more environmentally compatible plan of operation that included an agreement to fund a number of projects to assist in the preservation of grizzly bears and bull trout. Development of the mine was expected to take 5 years, beginning with the construction of a decline into the ore body in the spring of 2007.

Mines Management Inc., Spokane, WA, continued the repermitting process for its Montanore Mine, located in southwestern Montana. The former Noranda Mining Company, Toronto, Ontario, Canada, had relinquished the original permits when Noranda decided against developing the mine. Mines

Management acquired the portal property for the decline, as well as the Hard Rock Operating permit, and the MPDES permit by acquiring Noranda Minerals Corporation and Norwin Resource Corporation from Noranda Finance Inc. This purchase enabled the company to accelerate the timetable for dewatering the decline and continue the project begun by Noranda. Mines Management planned to advance the decline 915 m and then drift an additional 3,050 m while developing stations for 13,700 m of diamond drilling. Current reserves at Montanore, without this additional drilling, reportedly were estimated to be about 73.9 million metric tons (Mt) grading about 70 g/t silver and 0.75% copper (Mines Management, Inc., 2006).

In Butte, Montana Resources, Inc. continued to upgrade facilities and equipment at its Continental Pit Mine. Focus was on mine support equipment and the electronic controls for operating the processing mill. The company also completed testing for development of the supergene zone between the Continental Pit and the Berkeley Pit, drilling large core holes to gather metallurgical samples for confirming the proposed milling process. The Pittsmtont crosscut to the adjacent Berkeley Pit was grouted shut and a pump test was successfully completed to confirm that the supergene zone could be mined below the water level of the Berkeley Pit with the inflow of water controlled by pumps. Equipment availability and cost, however, were likely to slow the development of the supergene zone. Under current operations, the Continental Pit Mine has a projected life of about 17 years, but the development of the supergene zone could more than triple that life. During the year, additional resources also were discovered in an area north of the Continental Pit Mine. Montana Resources subsequently initiated overburden removal to access the newly discovered resources.

Gold.—Barrick Gold Corporation, Toronto, Ontario, Canada, continued mining at the Golden Sunlight Mine near Whitehall following Barrick's acquisition of the mine through the purchase of Placer Dome, Inc., Vancouver, British Columbia, Canada. Mining operations were focused on the stage 5b open pit, where ore production was maintained at about 27,000 t/d. This production level was expected to continue until 2008. Barrick also contracted to begin the process of reopening the underground mine located beneath the open pit mine. A new portal was to be constructed at a higher elevation than the original portal, which was buried as a result of a pit wall failure. Underground mining was anticipated to begin in mid-2007.

Prior to its sale to Barrick, Placer Dome had discovered three additional gold deposits separate from the current Golden Sunlight mining operations. Although these resources, the East, North, and Rattlesnake deposits, were identified by Placer Dome, they were not delineated. Barrick did not plan further exploration or development of these or other identified deposits in the near future.

Several individuals continued placer gold mining during the year. Reserves developed at Confederate Gulch, north of Townsend, were nearly exhausted on the north side of the drainage, but had not yet been developed on the south side. Near Nevada City, gold placer mining was completed in the lower third of the Browns Gulch. Reclamation was begun and was to be completed in mid-2007. Upstream resources remained untested by yearend.

Lead and Zinc.—Colorado-based Apollo Gold Corporation announced plans to reopen the Montana Tunnels Mine near Jefferson City in late 2006 through a joint-venture agreement with Elkhorn Tunnels, LLC, an affiliate of Calim Private Equity, LLC. Elkhorn Tunnels was to provide \$13 million for up to 50% interest in Montana Tunnels. Milling operations were to begin in early 2007 following completion of a remediation program designed to taper the pit walls to a more stable slope angle. As part of the remediation, 4.5 Mt of rock and soil mass were to be removed from the upper benches of the east wall and 2.3 Mt of waste removed from the pit floor (Apollo Gold Corporation, 2006).

Platinum-Group Metals.—Stillwater Mining Company continued to operate its East Boulder and Stillwater Mines during the year, producing platinum-group metals as well as cobalt, copper, gold, and nickel. At the East Boulder Mine near Big Timber, a second ventilation raise was completed, and the tailings pond was expanded to the stage II height of the tailings embankment. Transition to a mainly cut-and-fill method of mining was begun because of a significant dip (inclined angle) in the ore body. The transition was expected to be completed in from 3 to 5 years. Use of the cut-and-fill method would result in an appreciable decrease in the amount of waste that is brought to the surface during mining, effectively reducing the dilution of the mined ore. Significant expansion of the reserve base at East Boulder also was achieved during the year.

At the Stillwater Mine near Nye, up to 50% of the ore was mined using the cut-and-fill method of mining. Efforts were continued to further increase the use of this mining method, so as to increase the grade of ore to be processed and reduce overall processing costs. In other activities, Stillwater installed rail haulage in the lower levels of the mine and completed a new sand backfill plant and distribution system in the upper west area of the mine. Also, a new exhaust ventilation raise was completed for the mine during the year. Stillwater's proven reserves were to be maintained at a level consistent with 40 months of planned production, according to a new company policy established in 2006.

At Stillwater's smelter complex in Columbus, the company planned to upgrade its laboratory facilities. Plans also were being developed to further expand the smelting capabilities and to increase the recycling of catalytic converters from automotive salvage.

Legislation and Government Programs

The MBMG 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. In 2006, the MBMG and others continued mapping geology in western and southwestern portions of the State under the STATEMAP and EDMAP programs. Many of the mapping activities served to create more detailed 1:100,000- and 1:24,000-scale maps from 1:250,000-scale maps previously published. New maps were published for the Culbertson, Plentywood, Scobey, and Wolf Point 30 x 60 minute quadrangles and a few 7.5 minute quadrangles. Development of a new State geologic map scale progressed during the year with a finished product expected in the near future. Mapping of both gold and sapphire placers continued; however, completed reports were not immediately anticipated. Current publications and activities can be accessed at <http://www.mbmgt.mtech.edu/>.

The U.S. Government continued its process to transfer management of the National Guard Firing Range that includes some of Graymont's mine area, from the U.S. Bureau of Land Management to the U.S. Department of Defense. The Legislative EIS necessary to accomplish this transfer was not completed by yearend.

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

(Thousand metric tons and thousand dollars unless otherwise specified)

Mineral	2004		2005		2006	
	Quantity	Value	Quantity	Value	Quantity	Value
Clays, bentonite	102	8,400	W	W	W	W
Gemstones, natural	NA	653	NA	644	NA	379
Palladium ³ kilograms	13,700	102,000	13,300	87,100	14,400	150,000
Platinum ³ do.	4,040	110,000	3,920	113,000	4,290	158,000
Sand and gravel, construction	14,400	80,000	14,000	83,600	13,700	95,300
Stone:						
Crushed	4,090	13,700	3,430 ^r	16,600 ^r	3,570	19,200
Dimension	14	2,550	12	2,620	12	2,620
Combined values of cadmium (byproduct in zinc concentrates), ⁴ cement [masonry (2005-06), portland], clays (common), copper, garnet [industrial (2005)], gold, lead, lime, molybdenum concentrates, peat (2004-05), silver, talc (crude), zinc, and values indicated by symbol W	XX	303,000	XX	543,000 ^r	XX	641,000
Total	XX	621,000	XX	847,000	XX	1,070,000

^rRevised. NA Not available. W Withheld to avoid disclosing company proprietary data. Withheld values included in "Combined values" data. 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.

³Recoverable content of ores, etc.

⁴Data not available for 2006.

TABLE 2
MONTANA: CRUSHED STONE SOLD OR USED, BY KIND¹

Kind	2005			2006		
	Number of quarries	Quantity (thousand metric tons)	Value (thousands)	Number of quarries	Quantity (thousand metric tons)	Value (thousands)
Limestone	4	2,550	\$12,500	4	2,490	\$13,700
Granite	3	110	862	9	101	793
Sandstone and quartzite	1	34	164	2	42	201
Traprock	2	W	W	2	W	W
Volcanic cinder and scoria	1	W	W	2	W	W
Miscellaneous stone	12	254	1,010	20	74	393
Total	XX	3,430 ^r	16,600 ^r	XX	3,570	19,200

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

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

TABLE 3
MONTANA: CRUSHED STONE SOLD OR USED BY PRODUCERS IN 2006, BY USE¹

(Thousand metric tons and thousand dollars)

Use	Quantity	Value
Construction:		
Concrete aggregate (+1½ inch), riprap and jetty stone	14	60
Coarse aggregate graded:		
Bituminous aggregate, coarse	W	W
Railroad ballast	W	W
Fine aggregate (-¾ inch), stone sand (concrete)	W	W
Coarse and fine aggregates, unpaved road surfacing	W	W
Other construction materials	11	88
Chemical and metallurgical:		
Cement manufacture	W	W
Lime manufacture	W	W
Unspecified:²		
Reported	234	1,230
Estimated	2,400	13,000
Total	2,640	14,100
Grand total	3,570	19,200

W Withheld to avoid disclosing company proprietary data; included in "Grand 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
MONTANA: CRUSHED STONE SOLD OR USED BY PRODUCERS IN 2006, 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	14	60	--	--	--	--
Coarse aggregate, graded ³	W	W	--	--	--	--
Fine aggregate (-¾ inch) ⁴	W	W	--	--	--	--
Coarse and fine aggregates ⁵	W	W	--	--	--	--
Other construction materials	11	88	--	--	--	--
Chemical and metallurgical⁶						
W	W	--	--	--	--	
Unspecified:⁷						
Reported	74	388	159	833	1	4
Estimated	1,500	8,300	880	4,500	--	--
Total	2,520	13,800	1,040	5,380	1	4

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) and railroad ballast.

⁴Includes stone sand (concrete).

⁵Includes unpaved road surfacing.

⁶Includes cement and lime manufacture.

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

TABLE 5
MONTANA: CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN 2006,
BY MAJOR USE CATEGORY¹

Use	Quantity (thousand metric tons)	Value (thousands)	Unit value
Concrete aggregates and concrete products ²	1,020	\$9,920	\$9.74
Asphaltic concrete aggregates and other bituminous mixtures	780	10,200	13.08
Road base and coverings ³	2,880	15,300	5.30
Fill	576	3,680	6.38
Snow and ice control	53	234	4.42
Other miscellaneous uses	57	625	10.96
Unspecified: ⁴			
Reported	2,860	16,700	5.84
Estimated	5,490	38,700	7.05
Total or average	13,700	95,300	6.95

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

²Includes plaster and gunite sands.

³Includes road and other stabilization (cement).

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

TABLE 6
MONTANA: CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN 2006, BY USE AND DISTRICT¹

(Thousand metric tons and thousand dollars)

Use	District 1		District 2		Unspecified districts	
	Quantity	Value	Quantity	Value	Quantity	Value
Concrete aggregate and concrete products ²	817	8,560	201	1,350	--	--
Asphaltic concrete aggregates and road base materials ³	2,600	20,600	743	3,450	318	1,430
Fill	475	3,450	101	227	--	--
Snow and ice control	53	234	--	--	--	--
Other miscellaneous uses ⁴	52	558	5	67	--	--
Unspecified: ⁵						
Reported	1,130	5,650	1,730	11,100	--	--
Estimated	4,340	30,600	1,150	8,090	--	--
Total	9,460	69,600	3,930	24,300	318	1,430

W Withheld to avoid disclosing company proprietary data; included with "Other Miscellaneous Uses." -- Zero.

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

²Includes plaster and gunite sands.

³Includes road and other stabilization (cement).

⁴Includes fill and railroad ballast.

⁵Reported and estimated production without a breakdown by end use.