



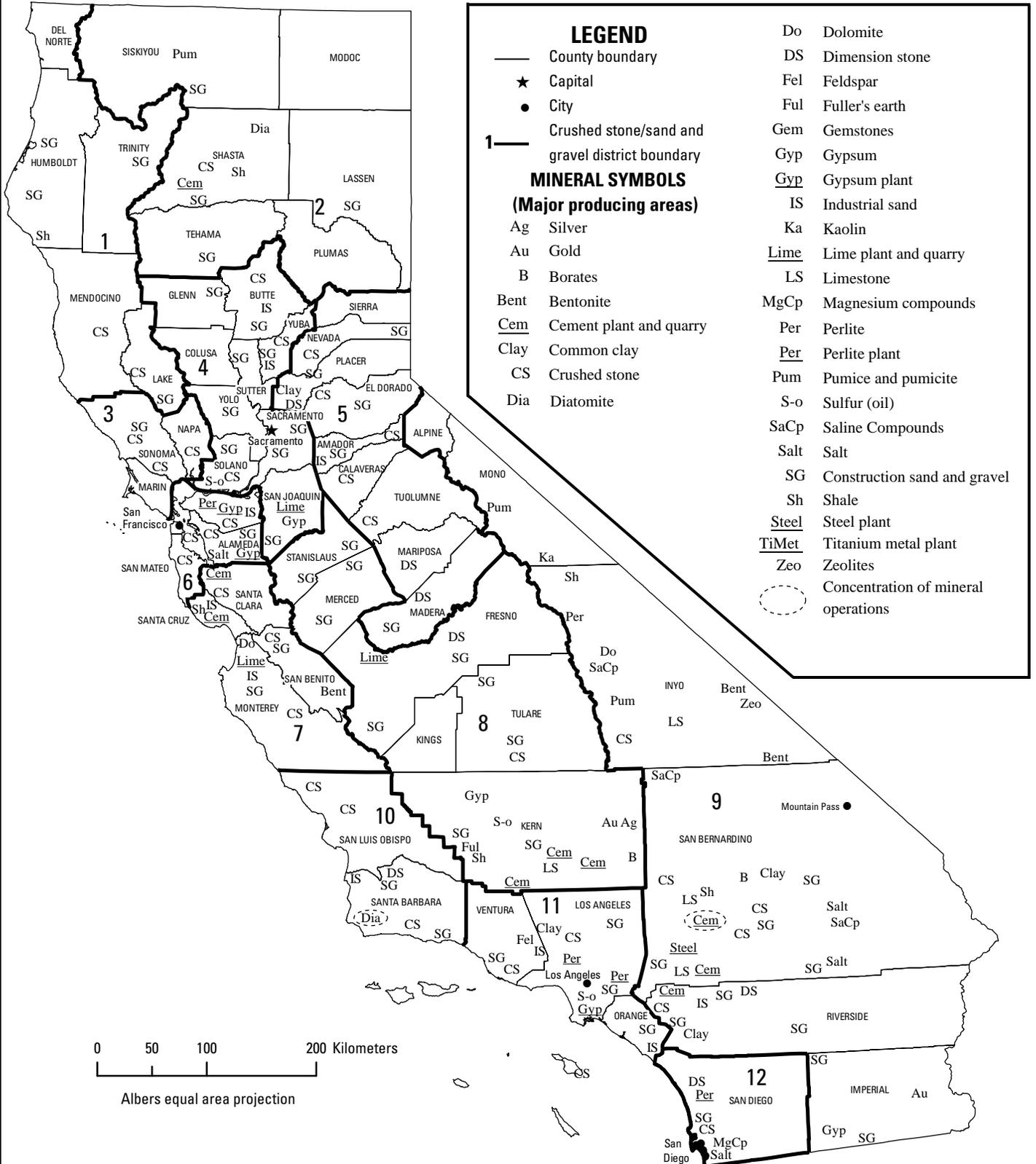
# 2007 Minerals Yearbook

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CALIFORNIA [ADVANCE RELEASE]

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# CALIFORNIA



Source: California Department of Conservation, California Geological Survey/ U.S. Geological Survey (2007).

# THE MINERAL INDUSTRY OF CALIFORNIA

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

In 2007, California's nonfuel raw mineral production<sup>1</sup> was valued at \$4.38 billion, based upon annual U.S. Geological Survey (USGS) data. This was a 7.2% decrease from the State's total nonfuel mineral value in 2006, which then had increased by \$430 million, or up nearly 10%, from that of 2005. The State remained third in rank among the 50 States in total nonfuel mineral production value in 2007, having been second in 2005 and first in the Nation for 6 consecutive years from 1999 through 2004. California accounted for 6.3% of the U.S. total.

Industrial minerals accounted for more than 99% of California's nonfuel mineral value; the remaining value resulted from gold, silver, and iron ore mining (descending order of value). In 2007, California continued as the leading construction sand and gravel-producing State, accounting for nearly 11% of the commodity's total U.S. mine production and 16.8% of the Nation's total value for that mineral commodity. Construction sand and gravel was, by value, also the State's leading nonfuel mineral, accounting for 33% of the State's total nonfuel mineral production value. Cement (portland and masonry) was the second ranked nonfuel mineral, followed by boron minerals, crushed stone, soda ash, and diatomite; these six accounted for nearly 95% of the State's total industrial mineral value (table 1).

In 2007, although more than one-third of California's nonfuel mineral commodities increased in value, those that showed decreases were the most prominent. Decreases took place in the values of crushed stone, down by \$209 million, construction sand and gravel, down by \$70 million, portland cement and masonry cement, down by a combined \$31 million, diatomite and soda ash down within a range of between \$10 million to \$20 million each, and industrial sand and gravel, down slightly more than \$14 million, leading to the State's significant decrease in nonfuel mineral production value for the year. Other commodities with smaller yet significant decreases in value included (descending order of change) common clays, lime, and pumice and pumicite. The largest increases in value for the State's nonfuel mineral commodities were in those of fire clays, up by about \$8 million, fuller's earth, up by nearly \$5 million, and less so salt and dimension stone (table 1). The production of fire clays nearly doubled while the commodity's value more than doubled. Fuller's earth production and value moderately increased from 2006 to 2007.

California continued to be the Nation's only State to produce boron and remained first in the quantities of construction sand and gravel produced (listings in descending order of value) in

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<sup>1</sup>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 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>.

2007. The State also continued to rank first of four diatomite-producing States; second in portland cement, second of two States that produced soda ash and second in masonry cement; third in feldspar; fourth in industrial sand and gravel and gemstones (gemstones based upon value); sixth in fuller's earth clays; seventh in kaolin clay; eighth in bentonite clay; and ninth in salt. California rose to first from third in the production of fire clay and in pumice and pumicite production, while also increasing in rank to third from fourth in that of crude gypsum and to fourth from fifth in crude perlite. The State was 10th in the production of dimension stone and was a significant producer of crushed stone and common clays.

The following narrative information was provided by the California Geological Survey<sup>2</sup> (CGS).

## Commodity Review

### *Industrial Minerals*

California's residential construction slowdown during the year contributed to a significant decrease in both production and value of construction aggregate (construction sand and gravel and crushed stone). In 2007, total aggregate production decreased by about 16% from that of 2006, and its production value decreased by between 11% and 12%. California remained the second largest producer of construction aggregate in the Nation behind the State of Texas.

**Boron.**—U.S. Borax (subsidiary of Rio Tinto Minerals) continued to lead the State and the Nation in the production of boron minerals at its Boron Mine and facility in Kern County. The value of boron minerals produced was estimated to be at least \$600 million in 2007.

**Cement.**—Modernization of Texas Industries, Inc.'s Oro Grande cement plant and mining and crushing facilities in San Bernardino County continued throughout the year. The \$360 million renovation project was scheduled for completion in May 2008, nearly doubling the cement processing capacity to 2.1 million metric ton per year (Mt/yr).

Mitsubishi Cement Corp. began development of the expanded regions of its Cushenbury limestone mine, San Bernardino County, in late 2007. The 81-hectare (ha) (200-acre) expansion had been approved in October 2004, adding 45 million metric tons (Mt) (50 million short tons) of cement-grade limestone to the mine's existing reserves.

Hanson Permanente Cement Inc. continued to revise and expand an inherited 1987 reclamation plan for its Permanente limestone mine in Santa Clara County. The 1987 plan expires in 2010. The Permanente Mine and cement plant supply about 50% of the San Francisco Bay area's cement. Hanson Plc (Hanson Permanente's parent company) was purchased by

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<sup>2</sup>Susan Kohler, Senior Engineering Geologist, authored the text of information submitted by the California Geological Survey.

HeidelbergCement AG in August. Included in the purchase were Hanson's California holdings, consisting of 31 aggregate mining properties, the Permanente limestone mine, and six sand dredging operations located in San Francisco and Suisun Bays.

In anticipation of increasing cement imports, CEMEX and Pan Pacific Cement, Inc. began construction of two new state-of-the-art bulk cement terminals at the Port of Sacramento during the summer. CEMEX planned to invest more than \$54 million on its new terminal to handle up to 1 Mt/yr of cement. CEMEX currently handles about one-fifth of this quantity at its existing Sacramento facility. The anticipated cost of Pan Pacific's new facility was about \$20 million; it was being designed to have a maximum handling capacity of about 0.8 Mt/yr. Both facilities were scheduled to be completed in 2008.

**Rare Earths.**—Molycorp Inc. and the Pittsburgh & Midway Coal Mining Co. (subsidiaries of Chevron Corp.) were merged in September 2007 to form a single subsidiary mining company, Chevron Mining Inc. The newly formed corporation included the Mountain Pass rare-earth mine located in San Bernardino County. The Mountain Pass Mine has been mostly idle since 1998 when mining operations were ordered to cease because of environmental issues. Since then, Molycorp has focused on bringing the facility into compliance with environmental requirements. Molycorp reached a long-awaited milestone in September when the plant's extraction circuits were restarted, resuming the processing of lanthanum concentrate and neodymium-praseodymium (didymium) from stockpiled rare-earth concentrates. Chevron Mining Inc. had not set a date for restarting mining or full-scale processing plant operation.

**Sand and Gravel, Construction.**—The Fresno County Board of Supervisors upheld an earlier Fresno County Planning Commission decision approving an expansion of Vulcan Materials Co.'s sand and gravel operation located along the Kings River near Centerville, Fresno County. The approval of the 50-year, 178-ha expansion also allowed an increase in annual production from 0.9 Mt/yr to 2.3 Mt/yr. Also in Fresno County, along the northern bank of the Kings River, was the site of Calaveras Materials Inc.'s proposed 127-ha sand and gravel operation. The proposed mine was tentatively approved by the Fresno County Planning Commission in December but not long after was disapproved by the same body. Calaveras Materials was appealing that latest decision.

Kaweah River Rock Company Inc.'s proposed project to mine sand and gravel from 113 ha of land south of the company's existing operation in Tulare County, received final approval in October. The company planned to start mining the additional area in summer 2008. The expansion was expected to add about 18 Mt of alluvial sand and gravel reserves to the northern Tulare County area.

Baldwin Contracting Company Inc.'s proposed M&T Ranch sand and gravel mining project in Butte County was approved in February. However, approval of the 81-ha, 4.2-million-cubic-meter project by the County Board of Supervisors was appealed by project opponents. The project subsequently was disapproved by the Board of Supervisors in January 2008.

Brown Sand Inc. was granted a permit in August to mine sand at a site located along the southern bank of the San Joaquin River in Lathrop, San Joaquin County. The 35-year permit was

granted for the extraction of 12.7 Mt of sand. The company planned to process the sand at its existing plant located near the new mine site.

Discussions continued between the City of Santa Clarita and CEMEX regarding a CEMEX proposal to develop a 51-Mt aggregate mine in Soledad Canyon. A year-long agreement declared in December 2006, and extended until June 2008, prevents the City of Santa Clarita from campaigning against the mine and CEMEX from moving ahead in obtaining the permits necessary to open the mine. The two parties were hopeful that the extended agreement would allow them to reach a mutually acceptable resolution to what had become a 7-year-old dispute over the proposed mine.

Shasta County approved two new sand and gravel mining permits during 2007. A 30-year permit was granted to Tullis Inc. to mine 108 ha of land containing an estimated 9 Mt of sand and gravel. A 15-year permit to mine a 16-ha site containing about 1.5 Mt of sand and gravel was granted to Redding Wake Board and Ski Park. The county also approved a reclamation plan amendment that would add about 0.45 Mt of aggregate reserves to an existing operation owned by a private party from Cottonwood.

Solano Concrete Co.'s sand and gravel operation located near Fairfield, Solano County, was acquired by CEMEX as part of a \$14.2 billion purchase of Rinker Materials Corp. in July. The CEMEX purchase also included Rinker's Lavic cinder mine located in San Bernardino County.

Eagle Rock Aggregates Inc. (subsidiary of Polaris Minerals Corp.) completed a \$27 million receiving, storage, and distribution terminal at the Port of Richmond in the fall. The 8,800-square-meter (95,000-square-foot) facility was constructed to receive shipments of high-quality sand and gravel from Vancouver Island, British Columbia, Canada. The first shipment arrived at the new facility in October. Before large ships carrying up to 72,000 metric tons (t) (79,200 short tons) of aggregate can dock at the port's shallow water berth, they must partially be unloaded onto barges while anchored in the San Francisco Bay. The barged rock is then towed up the Petaluma River to Landing Way Depot where it is distributed in southern Sonoma County. In addition to the Richmond facility, aggregate from Canada also was shipped to San Francisco's Pier 92 and the port of Redwood City. Polaris Minerals anticipated future shipping of Canadian aggregate into the Los Angeles, Long Beach, and San Diego areas. CEMEX, HeidelbergCement, and Shamrock Materials Inc. were the only other aggregate companies in the State that imported aggregate from Canada. HeidelbergCement also barged sand from Mexico into San Diego. About 1.8 Mt of aggregate was imported into California from Canada and Mexico in 2007.

**Stone, Crushed.**—Granite Construction Co. began the permitting process for the Liberty Quarry project, a proposed 63-ha, 245-Mt crushed rock quarry located in southeastern Riverside County, near the San Diego County border. If approved, the quarry could provide up to 4.5 Mt/yr of construction aggregate to the eastern San Diego County and southeastern Riverside County region.

BoDean Company Inc. was granted a permit in January to expand mining of crushed stone at its Blue Rock Mine near

Forestville, Sonoma County. The expansion covers a 9.7-ha area estimated to contain an additional 8.3 Mt of crushed stone. BoDean planned to begin mining the expansion area in summer 2008.

San Rafael Rock Quarry, which is 10 kilometers (km) (about six miles) east of San Rafael on the southwest side of San Pablo Bay in Marin County, produced construction aggregate and rip rap from Franciscan Assemblage greywacke. The 100-year old quarry has been operated by Dutra Construction Co. since 1986. The quarry's location on San Pablo Bay allowed for easy transport of the rock via barge for river and delta construction projects including levee repairs. Rip rap as large as 1.2 meters (m) (4 feet) in diameter was excavated from the quarry.

**Other Industrial Minerals.**—Searles Valley Minerals Inc. was purchased in December by Nirma Ltd., an Indian-owned soap and detergent producer and one of the world's leading producers of synthetic soda ash. Searles Valley pumps brine from Searles Dry Lake to its facilities at Trona, San Bernardino County, where about 1.8 Mt/yr of boron minerals, soda ash, and sodium sulfate are produced. As a result of the acquisition of Searles Valley, Nirma became the third leading producer of boron minerals in the world and among the leading producers of soda ash worldwide.

**Industry Organizations.**—The California Construction and Industrial Materials Association (CalCIMA) was formed in January by joining the memberships of four previous associations. These included the California Mining Association, Construction Materials Association of California, Southern California Ready Mixed Concrete Association, and Southern California Rock Products Association. CalCIMA is a statewide trade association made up of producers, suppliers, and service providers for industrial materials.

## **Metals**

**Gold.**—Gold again dominated the State's metal production. Although gold prices continued to increase during the year, production continued to decline. According to the CGS, as derived from State government agency sources and CGS individual mine inquiries, annual production totaled 603 kilograms (kg) (19,400 troy ounces) in 2007, about a 10% decrease compared with similarly derived revised production of 672 kg (21,600 troy ounces) in 2006.

Minor gold production from existing leach pads continued during 2007 at Western Goldfield Inc.'s Mesquite Mine in Imperial County and Canyon Resources Corp.'s Briggs Mine in Inyo County. Mining ceased at these properties in 2001 and 2004, respectively. In addition to lode mine gold from the Mesquite and Briggs Mines, placer gold was produced from Cal Sierra Development Inc.'s Yuba River gold dredging operation in Yuba County and as a byproduct mineral from numerous sand and gravel mines in the northern and central parts of the State. Specimen gold, including gold in quartz matrix for jewelry, also was produced at several small underground gold mines.

Western Goldfields, Inc. commenced new mining activities in 2007 at its Mesquite Mine. Full production was expected to be reached in 2008. Once in full operation, the company estimated that annual gold production would be between 4,820

kg (155,000 troy ounces) and 5,130 kg (165,000 troy ounces). Western Goldfields had directed considerable effort toward reopening the mine in the years following its purchase in 2003. A 30,600-meter drilling program conducted by Western Goldfields in 2006–07, combined with prior exploration, identified an estimated 87,100 kg (2.8 million troy ounces) of gold reserves at the Mesquite Mine. An additional 46,700 kg (1.5 million troy ounces) of measured and indicated resources was also identified. At yearend, Western Goldfields had mined about 816,000 t of new ore at Mesquite, containing approximately 390 kg (12,500 troy ounces) of gold. The first gold production from the new operations was expected in early 2008. Further drilling at the company's Brownie Hill and Vista deposits was planned for 2008.

Canyon Resources Corp. initiated a 3,000-m drilling program in December, focusing on the Cecil R gold prospect, which was about 6 km (4 miles) north of Canyon's Briggs Gold Mine, Inyo County. The deposit lies within a shallow dipping oxidized detachment zone located below an upper plate cover of unconsolidated gravels. Exploration at the Cecil R deposit conducted in 2006 demonstrated in-place gold resources of 5.2 Mt of reserves with an average grade of 0.82 grams per metric ton (g/t) gold. The company's drilling program in 2007–08 also included at least three exploratory drill holes at the Briggs Mine along a high-grade ore zone associated with the Goldtooth Fault. Drilling completed in 2006 indicated a resource of approximately 0.73 Mt of high-grade reserves averaging 7.37 g/t gold in that zone, blanketed by a lower grade zone containing approximately 3.8 Mt of reserves averaging 1.68 g/t gold. Canyon Resources planned to begin mining these three reserves zones by underground and open pit methods in 2008 or 2009. Also, another 20 Mt reserves averaging 0.75 g/t gold was identified in the vicinity of the existing open pits of the Briggs Mine.

Sutter Gold Mining Inc. completed phase I and began phase 2 of a 5,500-m drilling program during 2007 at its Sutter Gold project in Amador County. The fully permitted mining project consisted of 217 ha along a 5.1-km segment of the Mother Lode belt and included the site of the historic Lincoln Mine. Assay results of phase I samples indicated substantiated continuity of the Comet veins. Sutter Gold was awaiting the completion of phase 2 drilling and the receipt of the necessary financing before initiating mining at Sutter Gold.

Emgold Mining Corp. continued the permitting process to reopen the historic Idaho Maryland gold mine in Grass Valley, Nevada County. Workshops were held during the year to educate the public and to gain local support for the project. Emgold had identified measured and indicated resources of about 14,700 kg (472,000 troy ounces) of gold. An additional component of the proposed Idaho Maryland Mine project was an onsite manufacturing facility that would use waste rock for the production of ceramic products.

**Other Metals.**—Silver was produced as a byproduct of gold production and made up less than 1% of California's total metal production. Iron ore mined in California was used in the production of portland cement and was considered to be an industrial mineral.

State and Local Legislation

The California Department of Transportation designated for specific uses \$8.1 billion of the \$19.9 billion transportation bond package (Proposition 1B) approved in 2006. Uses included expansion of public transit, improvements to the seismic safety of local bridges, repairs to local streets and roads, safety improvements and repairs to State highways, and upgrades to freeways. Proposition 1B also authorized State and regional agencies to engage in public and private partnerships to attract additional revenue in private investment for the development of the transportation infrastructure in the State. Many of these infrastructure projects will require large quantities of construction aggregate and cement. The increased demand for construction materials necessary for these projects in the next several years likely could offset some of the reduced demand from declining residential construction.

The CGS's Mineral Land Classification Project, a mandate of the Surface Mining and Reclamation Act, continued to provide lead agencies with mineral resource maps that have been of significant value in land-use planning and mineral resource conservation. At yearend, the CGS had completed mineral resource studies in about one-third of the State. During the year, the CGS completed an updated classification project in the Palm Springs area, Riverside County, identifying an additional 2,070 ha of land containing an estimated 428 Mt of portland-cement-grade aggregate resources. An updated aggregate classification project also was completed in the Claremont-Upland area located in San Bernardino and Los Angeles Counties. Classification work also was carried out in the North San Francisco Bay area (Marin and Napa Counties), and in Kern, San Bernardino, and San Joaquin Counties. These reports were scheduled for completion in 2008.

TABLE 1  
NONFUEL RAW MINERAL PRODUCTION IN CALIFORNIA<sup>1,2</sup>  
(Thousand metric tons and thousand dollars unless otherwise specified)

Mineral	2005		2006		2007	
	Quantity	Value	Quantity	Value	Quantity	Value
Boron minerals	1,150	713,000	W	W	W	W
Cement:						
Masonry	694	80,600 <sup>e</sup>	698	89,500 <sup>e</sup>	522	68,900 <sup>e</sup>
Portland	11,600	1,130,000 <sup>e</sup>	10,900	1,190,000 <sup>e</sup>	10,800	1,180,000 <sup>e</sup>
Clays:						
Bentonite	20	2,200	24	2,510	29	3,090
Common	1,010	16,600	744	7,640	549	4,010
Gemstones	NA	1,130	NA	1,040	NA	818
Sand and gravel:						
Construction	163,000	1,440,000	153,000	1,520,000	134,000	1,450,000
Industrial	2,030	60,400	1,670	57,800	1,850	43,400
Silver <sup>3</sup> kilograms	269	63	W	W	W	W
Stone:						
Crushed	55,200	491,000	70,100 <sup>r</sup>	777,000 <sup>r</sup>	54,300	568,000
Dimension	41	10,200	40	10,000	39	12,300
Combined values of clays [fire (2006–07), fuller's earth, kaolin], diatomite, feldspar, gold, gypsum (crude), iron ore (usable shipped), lime, magnesium compounds, perlite (crude), pumice and pumicite, salt, soda ash, talc [crude (2006–07)], tungsten (2006–07), zeolites, and values indicated by symbol W	XX	338,000 <sup>r</sup>	XX	1,070,000	XX	1,050,000
Total	XX	4,290,000 <sup>r</sup>	XX	4,720,000 <sup>r</sup>	XX	4,380,000

<sup>e</sup>Estimated. <sup>r</sup>Revised. NA Not available. W Withheld to avoid disclosing company proprietary data. Withheld values included in "Combined value" data. XX Not applicable.

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

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

<sup>3</sup>Recoverable content of ores, etc.

TABLE 2  
CALIFORNIA: CRUSHED STONE SOLD OR USED, BY TYPE<sup>1</sup>

Type	2006			2007		
	Number of quarries	Quantity (thousand metric tons)	Value (thousands)	Number of quarries	Quantity (thousand metric tons)	Value (thousands)
Limestone <sup>2</sup>	27 <sup>r</sup>	36,400 <sup>r</sup>	\$381,000 <sup>r</sup>	29	25,800	\$240,000
Dolomite	2	94	1,000	2	102	1,200
Granite	31 <sup>r</sup>	14,600 <sup>r</sup>	166,000 <sup>r</sup>	28	13,600	152,000
Traprock	32 <sup>r</sup>	10,200 <sup>r</sup>	121,000	27	8,250	94,900
Sandstone and quartzite	7	1,990	21,200	7	1,700	19,600
Slate	4 <sup>r</sup>	410 <sup>r</sup>	6,210 <sup>r</sup>	3	394	4,610
Volcanic cinder and scoria	8	308	3,680	8	499	6,130
Miscellaneous stone	55 <sup>r</sup>	6,130 <sup>r</sup>	76,800 <sup>r</sup>	48	3,990	49,200
Total	XX	70,100 <sup>r</sup>	777,000 <sup>r</sup>	XX	54,300	568,000

<sup>r</sup>Revised. XX Not applicable.

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

<sup>2</sup>Includes limestone-dolomite reported with no distinction between the two.

TABLE 3  
CALIFORNIA: CRUSHED STONE SOLD OR USED BY PRODUCERS  
IN 2007, BY USE<sup>1</sup>

(Thousand metric tons and thousand dollars)

Use	Quantity	Value
Construction:		
Coarse aggregate (+1½ inch):		
Riprap and jetty stone	481	9,710
Filter stone	W	W
Other coarse aggregate	1,260	12,300
Coarse aggregate, graded:		
Concrete aggregate, coarse	137	2,290
Bituminous aggregate, coarse	W	W
Railroad ballast	W	W
Other graded coarse aggregate	1,460	17,800
Fine aggregate (-¾ inch):		
Stone sand, concrete	W	W
Stone sand, bituminous mix or seal	W	W
Screening, undesignated	442	7,110
Other fine aggregate	347	5,140
Coarse and fine aggregates:		
Graded road base or subbase	1,070	8,860
Unpaved road surfacing	370	3,350
Terrazzo and exposed aggregate	W	W
Crusher run or fill or waste	140	1,010
Other coarse and fine aggregates	1,400	13,800
Other construction materials	84	1,290
Agricultural:		
Limestone	82	1,310
Poultry grit and mineral food	W	W
Other agricultural uses	59	713
Chemical and metallurgical:		
Cement manufacture	10,500	30,500
Lime manufacture	W	W
Glass manufacture	W	W
Sulfur oxide removal	W	W
Special:		
Asphalt fillers or extenders	W	W
Whiting or whiting substitute	W	W
Other fillers or extenders	W	W
Other miscellaneous uses and specified uses not listed	370	13,600
Unspecified: <sup>2</sup>		
Reported	18,300	211,000
Estimated	16,000	191,000
Total	54,300	568,000

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

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

<sup>2</sup>Reported and estimated production without a breakdown by end use.

TABLE 4  
CALIFORNIA: CRUSHED STONE SOLD OR USED BY PRODUCERS IN 2007, BY USE AND DISTRICT<sup>1</sup>

(Thousand metric tons and thousand dollars)

Use	District 1		District 2		District 3		Districts 4, 5, and 6 <sup>2</sup>		Districts 7, 8, and 9 <sup>2</sup>	
	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
Construction:										
Coarse aggregate (+1½ inch) <sup>3</sup>	W	W	65	1,000	W	W	288	5,600	1,160	12,500
Coarse aggregate, graded <sup>4</sup>	--	--	W	W	W	W	W	W	1,290	16,100
Fine aggregate (-¾ inch) <sup>5</sup>	--	--	W	W	W	W	41	749	414	8,620
Coarse and fine aggregates <sup>6</sup>	W	W	427	4,040	W	W	290	2,390	490	3,030
Other construction materials	--	--	--	--	--	--	4	60	80	1,230
Agricultural <sup>7</sup>	--	--	W	W	--	--	W	W	36	577
Chemical and metallurgical <sup>8</sup>	W	W	W	W	--	--	--	--	9,300	25,400
Special <sup>9</sup>	--	--	--	--	--	--	W	W	732	26,700
Other miscellaneous uses	--	--	--	--	--	--	--	--	370	13,600
Unspecified: <sup>10</sup>										
Reported	191	2,240	58	678	826	9,660	2,550	29,400	10,900	127,000
Estimated	601	7,000	807	9,400	3,300	38,000	3,400	39,000	6,900	80,000
Total	885	10,400	2,830	22,700	4,900	57,000	6,630	78,700	31,700	315,000
	Districts 10, 11, and 12 <sup>2</sup>		Unspecified districts							
	Quantity	Value	Quantity	Value						
Construction:										
Coarse aggregate (+1½ inch) <sup>3</sup>	167	1,820	--	--						
Coarse aggregate, graded <sup>4</sup>	356	4,860	--	--						
Fine aggregate (-¾ inch) <sup>5</sup>	251	2,430	--	--						
Coarse and fine aggregates <sup>6</sup>	1,220	12,400	--	--						
Other construction materials	--	--	--	--						
Agricultural <sup>7</sup>	W	W	--	--						
Chemical and metallurgical <sup>8</sup>	W	W	--	--						
Special <sup>9</sup>	W	W	--	--						
Other miscellaneous uses	--	--	--	--						
Unspecified: <sup>10</sup>										
Reported	3,760	42,800	9	12						
Estimated	1,400	17,000	--	--						
Total	7,360	84,300	9	12						

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

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

<sup>2</sup>Districts 4, 5, and 6; 7, 8, and 9; 10, 11, and 12 are combined to avoid disclosing company proprietary data.

<sup>3</sup>Includes filter stone, riprap and jetty stone, and other coarse aggregate.

<sup>4</sup>Includes bituminous aggregate (coarse), concrete aggregate (coarse), railroad ballast, and other graded coarse aggregate.

<sup>5</sup>Includes screening (undesignated), stone sand (concrete), stone sand (bituminous mix or seal), and other fine aggregate.

<sup>6</sup>Includes crusher run or fill or waste, graded road base or subbase, terrazzo and exposed aggregate, unpaved road surfacing, and other coarse and fine aggregates.

<sup>7</sup>Includes agricultural limestone, poultry grit and mineral food, and other agricultural uses.

<sup>8</sup>Includes cement, lime, and glass manufacture, and sulfur oxide removal.

<sup>9</sup>Includes asphalt fillers or extenders, whiting or whiting substitute, and other fillers or extenders.

<sup>10</sup>Reported and estimated production without a breakdown by end use.

TABLE 5  
 CALIFORNIA: CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN 2007,  
 BY MAJOR USE CATEGORY<sup>1</sup>

Use	Quantity (thousand metric tons)	Value (thousands)	Unit value
Concrete aggregate (including concrete sand)	27,700	\$323,000	\$11.69
Plaster and gunitite sands	4,700	46,600	9.91
Concrete products (blocks, bricks, pipe, decorative, etc.)	134	1,280	9.57
Asphaltic concrete aggregates and other bituminous mixtures	15,300	193,000	12.67
Road base and coverings <sup>2</sup>	12,800	127,000	9.86
Fill	6,990	60,700	8.69
Snow and ice control	75	831	11.10
Other miscellaneous uses <sup>3</sup>	488	8,230	16.88
Unspecified: <sup>4</sup>			
Reported	31,500	329,000	10.43
Estimated	34,700	361,000	10.39
Total or average	134,000	1,450,000	10.79

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

<sup>2</sup>Includes road and other stabilizations (cement and lime).

<sup>3</sup>Includes filtration and golf course.

<sup>4</sup>Reported and estimated production without a breakdown by end use.

TABLE 6  
CALIFORNIA: CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN 2007, BY USE AND DISTRICT<sup>1</sup>

(Thousand metric tons and thousand dollars)

Use	District 1		District 2		District 3	
	Quantity	Value	Quantity	Value	Quantity	Value
Concrete aggregate and concrete products <sup>2</sup>	W	W	483	5,710	W	W
Asphaltic concrete aggregates and road base materials <sup>3</sup>	371	5,210	984	19,000	W	W
Fill	18	133	134	726	81	605
Other miscellaneous uses <sup>4</sup>	281	7,680	14	123	152	1,650
Unspecified: <sup>5</sup>						
Reported	130	1,230	301	4,000	289	3,050
Estimated	553	6,070	777	8,130	134	1,460
Total	1,350	20,300	2,690	37,700	656	6,770
	District 4		District 5		District 6	
	Quantity	Value	Quantity	Value	Quantity	Value
Concrete aggregate and concrete products <sup>2</sup>	6,270	54,400	337	4,050	W	W
Asphaltic concrete aggregates and road base materials <sup>3</sup>	8,110	74,500	748	7,990	1,090	14,600
Fill	716	6,710	143	1,170	1,890	24,400
Other miscellaneous uses <sup>4</sup>	313	2,190	73	833	621	8,720
Unspecified: <sup>5</sup>						
Reported	10,000	105,000	59	624	3,090	30,600
Estimated	1,170	13,000	837	9,120	443	4,830
Total	26,600	256,000	2,200	23,800	7,130	83,200
	District 7		District 8		District 9	
	Quantity	Value	Quantity	Value	Quantity	Value
Concrete aggregate and concrete products <sup>2</sup>	1,200	10,200	4,550	50,700	5,760	61,500
Asphaltic concrete aggregates and road base materials <sup>3</sup>	W	W	3,990	47,200	7,560	82,600
Fill	20	136	184	2,740	1,540	6,670
Other miscellaneous uses <sup>4</sup>	166	2,230	7	122	75	1,400
Unspecified: <sup>5</sup>						
Reported	247	2,540	3,350	35,000	7,910	95,100
Estimated	50	548	1,320	15,100	23,100	236,000
Total	1,680	15,600	13,400	151,000	46,000	483,000
	District 10		District 11		District 12	
	Quantity	Value	Quantity	Value	Quantity	Value
Concrete aggregate and concrete products <sup>2</sup>	782	10,800	11,200	147,000	W	W
Asphaltic concrete aggregates and road base materials <sup>3</sup>	545	8,250	3,690	46,500	W	W
Fill	355	3,890	1,280	8,160	631	5,320
Other miscellaneous uses <sup>4</sup>	--	--	--	--	1,770	25,000
Unspecified: <sup>5</sup>						
Reported	2,490	25,700	1,960	20,400	94	1,220
Estimated	639	4,800	2,970	32,500	2,680	29,300
Total	4,810	53,500	21,200	255,000	5,170	60,800
	Unspecified districts					
	Quantity	Value				
Concrete aggregate and concrete products <sup>2</sup>	--	--				
Asphaltic concrete aggregates and road base materials <sup>3</sup>	--	--				
Fill	--	--				
Other miscellaneous uses <sup>4</sup>	--	--				
Unspecified: <sup>5</sup>						
Reported	1,600	4,310				
Estimated	--	--				
Total	1,600	4,310				

W Withheld to avoid disclosing company proprietary data; included in "Other miscellaneous uses." -- Zero.

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

<sup>2</sup>Includes plaster and gunite sands.

<sup>3</sup>Includes road and other stabilization (cement and lime)

<sup>4</sup>Includes filtration, golf course, and snow and ice control.

<sup>5</sup>Reported and estimated production without a breakdown by end use.