

CALIFORNIA NON-FUEL MINERALS 2005

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Based on the U.S. Geological Survey's (USGS) preliminary data for 2005, California ranked second behind Arizona among the states in non-fuel mineral production, accounting for approximately 7% of the United States' total. The market value of mineral production for California amounted to \$3.7 billion. California produced about 30 varieties of industrial minerals during the year. The only metals produced were gold, silver, and iron (used for cement manufacturing). California led the nation in the production of sand and gravel, diatomite, and natural sodium sulfate, and was the only producer of boron. The state ranked second behind Texas in the production of portland cement and second behind Florida for masonry cement. California dropped to 8th rank among the states in gold production. Other minerals produced include common clay, bentonite clay (including hectorite), crushed stone, dimension stone, feldspar, fuller's earth, gemstones, gypsum, iron ore, kaolin clay, lime, magnesium compounds, perlite, pumice, pumicite, salt, silver, soda ash, and zeolites.

There were about 820 active mines producing non-fuel minerals during 2005. Approximately 9,500 people are employed at these mines and their processing plants.

INDUSTRIAL MINERALS

Construction sand and gravel was California's leading industrial mineral in terms of dollar value with an estimated total of \$1.27 billion for the year. Construction sand and gravel production was estimated at 176.4 million tons. Teichert's Aspen VI (Sacramento County) led the state and the nation in sand and gravel production. California's second largest mineral commodity was Portland cement valued at \$1.1 billion, an increase of about 7% from 2004. California experienced a shortage of portland cement in 2005, driving the average price up from 2004 by about 12% to \$94.00/ton. Portland cement production for 2005 amounted to 12.6 million tons. U.S. Borax and Chemical Inc. (a subsidiary of Rio Tinto Inc.) led the state and nation in the production of boron at their Boron Mine and plant in Kern County. California produces about 25% of the world's boron. Valued at \$483 million, boron was California's third highest dollar-value mineral produced. Boron production increased by 1.6% for the year, but a lower dollar value per ton contributed to a 23% decrease in total value compared to 2004. Crushed stone ranked fourth in the state with a value of \$362 million, unchanged from last year. Granite Rock's Wilson Quarry was California's largest crushed rock producer for 2005.

CONSTRUCTION AGGREGATE

California Governor Arnold Schwarzenegger has proposed the Strategic Growth Plan, which calls for \$105 billion to be invested in transportation projects over the

next 10 years. This program includes plans to build 1,200 new lane-miles of roads in California.

Importation of sand and gravel by ship and barge from Canada and Mexico to California ports continues in the bay areas of San Francisco, Los Angeles, and San Diego. California imported about 2.4 million tons of sand and gravel during 2005 as compared to about 3.3 million tons in 2004. Hanson Aggregate is the largest importer of aggregate in the state.

Hanson Aggregates purchased Mission Valley Rock Company's Sunol sand and gravel operation (Alameda County) in June 2005. The acquisition took place just 6 months after a decision was made in the 1st District Court of Appeals to uphold a 2003 Superior Court decision allowing a 139-acre expansion of Mission Valley Rock's existing Sunol operation. The mine expansion adds 43 million tons of construction-grade sand and gravel reserves to the south San Francisco Bay region which is currently in short supply of aggregate. Hanson plans to start producing sand and gravel from the expansion site by summer 2006. Hanson also purchased Berkeley Ready Mix and Berkeley Asphalt in 2005. The two companies operate plants in the Sunol, Berkeley, and Oakland areas.

Kaweah River Rock Co was granted a permit by the Tulare County Board of Supervisors in June 2005 to mine 280 acres of land south of the company's existing operation along the Kaweah River. The permit adds 15-20 million tons of alluvial sand and gravel reserves to the northern Tulare County area. Local residents appealed the board's approval and the project has been put on hold until a decision is made on the appeal.

CEMEX was granted a permit in December 2005 to build a 5 million ton per year aggregate processing plant located near Apple Valley, San Bernardino County. The plant will make high quality concrete-grade aggregate from waste rock at CEMEX's Black Mountain Limestone Quarry. About 10 million tons of waste rock is already stockpiled at the Quarry. The rock will be hauled about two miles by truck to the new processing plant that is scheduled for completion in 2008. CEMEX plans to run the plant at full capacity making it one of the largest aggregate operations in the state.

San Benito Supply Inc.'s Hidden Canyon Rock Quarry project located near the city of Greenfield (Monterey County) was approved in March 2005. The permit allows for approximately 7 million tons of crushed granite and 3.5 million tons of decomposed granite to be mined over a period of 20 years. A maximum of 300,000 tons of rock can be mined annually from the site.

Cemex completed the acquisition of RMC Pacific Materials Inc. on March 1, 2005. The \$5.8 billion acquisition made Cemex the world's largest supplier of ready-mixed concrete and the third largest cement producer in the world.

Robertsons Ready Mix Inc. started mining at the Cushenbury Sand and Gravel Mine (San Bernardino County) in the spring of 2005 after purchasing the 268-acre property from Crushed Rock Products Inc. in December of 2004. A mining permit was approved to operate the mine in 1993, but no mining activities took place until Robertsons acquired the property. The Cushenbury mine contains approximately 25 million tons construction-grade sand and gravel reserves that can be mined through the year 2023.

Teichert Aggregates Inc. was granted approval in July 2005 to remove from 12 to 15 million tons of gold dredge tailings located on 583 acres within the City of Rancho Cordova (Sacramento County). The tailings will be transported by conveyor to Teichert's Grantline plant to be processed for use in construction aggregate. Teichert estimates that it will take from 4 to 7 years to mine and remove the tailings. On completion, the land will be reclaimed to its original pre-gold mining topography. Elliot Homes plans to build 12,000 new homes and provide 4 million square feet of commercial space on the reclaimed site.

Syar Industries Inc. was given final approval on August 16, 2005 to mine 36.4 acres of alluvial sand and gravel along the Russian River near Healdsburg (Sonoma County). The permit allows for approximately 3.3 million tons of concrete-grade alluvial sand and gravel to be mined from the site by April 15, 2006. Syar plans to apply for an extension of the April 15th mining deadline. Material mined at the site, referred to as Phase VI, will be stockpiled at Syar's Healdsburg aggregate plant to be sold as needed.

OTHER INDUSTRIAL MINERALS

Competition from rare earths producers in China has indefinitely postponed the reopening of Molycorp Inc's Mountain Pass Mine (San Bernardino County). An Environmental Impact Report (EIR) and subsequent permit was approved in July 2004 to enlarge the current pit and construct a new on-site tailings impoundment and evaporation pond for the mine. The new permit allows the existing pit to be mined down to 750 feet below ground surface (an additional 250 feet) and increases the mine life by 30 years. The Mountain Pass Mine has been idle since 1998 when Molycorp Inc. was cited for spilling low-level radioactive waste from a broken pipeline. Before its closure, the mine was the only producer of rare earths in the United States.

Texas Industries Inc. announced plans in April 2005 to expand and modernize the company's Oro Grande portland cement plant (San Bernardino County). The two-year, \$350 million-project will increase the facilities' annual cement capacity by 77%, from 1.3 million tons to 2.3 million tons.

Mitsubishi Cement Corp.'s planned start up date of May 2005 for its newly approved 200-acre Cushenbury Limestone Mine expansion (San Bernardino County) was not met. The company is currently in the process of mitigating

environmental impacts associated with the expansion that was approved in October 2004, which added 50 million tons of cement-grade limestone reserves.

The H. Lima Company's Loop Ranch Limestone Mine project, located near Tehachapi (Kern County), was approved in July 2005. The 280-acre mine will provide nearly 5 million tons of limestone for use as fertilizer and industrial uses such as roofing, glass manufacturing, and ceramics. Mining is expected to start in the spring of 2006.

Blue Mountain Minerals was granted a permit in August 2005 to increase the production of limestone at two marble quarry sites in Tuolumne County from 812,500 to 1,180,000 tons per year. The approval was contingent on combining the company's Blue Mountain Quarry and Columbia Quarry into one permit and one reclamation plan. Blue Mountain Minerals mines limestone for use in glass manufacturing, poultry feed, and asphalt roofing shingles.

METALS

Despite the dramatic increase in gold prices for the year, California's production continued to decline in 2005. Annual production amounted to about 65,300 ounces -- a 32% decrease from 2004. The increased gold price contributed to a lesser drop in value of 26%. Gold value amounted to \$29 million for 2005 as compared to \$39 million for 2004.

Gold processing from existing heap leach ore piles continued at four southern California open-pit mines during 2005. These include Western Goldfields Inc.'s Mesquite Mine (Imperial County), Glamis Rand Mining Company's Rand Mine (Kern County), Canyon Resources Corporation's Briggs Mine (Inyo County) and Quest Capital Corporation and MK Resources Company's Castle Mountain Mine (San Bernardino County). Mining has ceased at all four properties.

California's largest gold producer for the year was Western Goldfields Inc.'s Mesquite Mine, acquired from Newmont Mining Corporation in November of 2003. Mining operations ceased in May of 2001 but Western Goldfields Inc. has announced plans to re-start open-pit mining operations in late 2006 or early 2007 in an expanded area of the mine that was permitted by Newmont in spring of 2002. Western Goldfields also plans to re-treat the existing heaps for additional gold recovery and explore high-grade ore extensions at depth. The new expanded area is believed to contain almost 43 million tons of gold ore averaging 0.021 ounces per ton, yielding about 900,000 ounces of gold. Additional non-permitted gold resources at the Mesquite Mine have been estimated at nearly one million ounces.

Canyon Resource Corporation started an exploratory program during the year to determine the feasibility of re-starting mining operations at the Briggs Mine (Inyo County). The company ceased mining in April of 2004. Drilling started in the fall

of 2005 on two potential high-grade underground mining targets associated with the Goldtooth Fault and between the previously mined Briggs North and Goldtooth pits. Canyon Resources is also evaluating potential ore bodies adjacent to the Briggs Main and Briggs South pits that could be mined by open pit methods.

The Glamis Rand Mining Company completed heap leaching at its Rand Gold Mine (Kern County). During the mine's 15 years of modern-day operation, nearly one million ounces of gold were produced. There are no plans to re-open the mine and reclamation is in progress.

A small amount of gold was produced during completion of heap leaching in 2005 at the Castle Mountain Mine (San Bernardino County) by Quest Capital Corporation and MK Resources Company. The mine currently is undergoing reclamation and there are no plans for re-opening.

Sutter Gold Mining Inc. was granted a wastewater-discharge permit from the California Regional Water Quality Control Board in October 2005 for the Sutter Gold Project (Amador County). The company called it the "final major permit" needed for the project -- a proposed 535-acre underground gold mine that includes the historic Lincoln Gold Mine located along California's Mother Load belt. The Lincoln was last mined in 1912 and produced a total of about \$2.2 million in gold. The Sutter Gold Project is backed by two parent companies, U.S. Energy and Crested Corporation, who have entered into a joint venture under the name of USECC. Modern exploration at the project site, since the 1980's, indicates gold reserves of about 200,000 ounces. USECC expects mining at the project to commence sometime in 2006.

The Idaho Maryland Mine Corporation, a subsidiary of Emgold Mining Corporation, submitted its mining permit application in October 2005 to the City of Grass Valley (Nevada County) to re-open the historic Idaho Maryland Gold Mine. The mine was California's second largest producer of gold with a total production during its life, from 1862-1956, of 2.4 million ounces valued at \$70 million. The operators believe that the mine may contain another 1.4 million ounces of gold valued at over \$600 million (based on a gold price of \$450 dollars per ounce). Re-opening the Idaho Maryland Mine would require dewatering the existing underground mine workings over a period of less than one year, pumping out about 500 million gallons of water. A key component of the proposed Idaho Maryland Mine project is an on-site manufacturing facility that will use mine waste for the production of ceramic products. The permitting phase of the mine re-opening is expected to be complete by May 2007, and mining could start in late 2007. A series of meetings and workshops were held throughout the year to educate the public and to gain local support for the mine.

In addition to the above-mentioned mines, gold is produced as a secondary mineral at numerous alluvial sand and gravel mines located mainly in the

northern and central part of the state. California also has several small underground gold mines that mainly produce specimen gold.

Silver production makes up less than 1% of California's total metal production. All of the silver produced in California is a byproduct of gold production. Iron ore mined in California is used in the production of portland cement and is considered an industrial mineral.

STATE AND LOCAL REGULATIONS

The Governor signed AB 574 in the fall of 2005 clarifying existing industry regulations regarding the use of recycled concrete. The bill establishes a specific definition for recycled concrete, specifies specific amounts of recycled material allowed in final concrete products, and sets requirements regarding consumer notification of recycled aggregate use. The bill was designed to reduce the amount of concrete disposed of in landfills by encouraging more widespread use of recycled concrete aggregate.

California's South Coast Air Quality Management District (AQMD) passed Rule 1157, a measure that will limit dust allowed from construction materials operations throughout southern California metropolitan areas in Orange, Los Angeles, Riverside, and San Bernardino counties. The measure went into full effect in December 2005 and impacts about 400 sand and gravel facilities, concrete batch plants, and asphalt plants. It includes new standards for dust emissions, dust plume height restrictions, equipment dust suppressants, sweeping of paved roads, chemical stabilizers on gravel roads, and mitigation measures to reduce dust tracked onto public roadways. The new measure is intended to help the AQMD region achieve a 2006 federally mandated deadline for air quality particles smaller than 10 microns (PM 10).

THE CALIFORNIA GEOLOGICAL SURVEY

The California Geological Survey (CGS) Mineral Land Classification Project, a mandate of the Surface Mining and Reclamation Act, continued to provide lead agencies with mineral resource maps that have proved to be of great value in land-use planning and mineral resource conservation. To date, CGS has classified a little over one third of the state for mineral resources. CGS is currently working on aggregate classification projects in the San Bernardino and Palm Springs areas (San Bernardino County), the Claremont-Upland area (San Bernardino and Los Angeles counties), the North San Francisco Bay area (Marin and Napa counties) and in San Joaquin County. CGS is also working on updating Map Sheet 52, a map showing data on current aggregate supply and 50-year aggregate demand for 32 aggregate resource regions throughout California.

Dr. John Parrish was appointed as California's State Geologist in April 2005. Dr. Parrish spent 20-years in the private sector with the oil and gas industry both as a field geologist and as a manager engaged in a wide variety of exploration and production projects. Dr. Parrish served as Executive Officer to the California State Mining and Geology Board (SMGB) for 11 years prior to his appointment as State Geologist. He earned his doctorate in geology at the University of Wales, UK, and also has MS degrees in geology and business administration.

Stephen Testa filled the SMGB Executive Officer position in August 2005. Mr. Testa has worked as a consulting geologist in private practice and with the mining industry for over 25 years. He has also served as the SMGB's mine inspector since 2000.

Photo Captions

Photo 1



Granite Rock Company's fully automated 450-ton per hour asphalt batch plant located at the Arthur R. Wilson Quarry, San Benito County. A slat conveyor brings the asphalt to the load silo. The asphalt aggregate is Cretaceous hornblende gabbro mined from the Wilson Quarry, California's largest crushed rock mine. (Photo by Don Dupras, California Geological Survey)

Photo 2



Western Goldfields Inc.'s Mesquite open pit gold mine and facility located along the southwest flanks of the Chocolate Mountains, Imperial County. The mine and facilities cover about 5,200 acres. Approximately 154 million tons of ore was mined from 1985 to 2001 with an average grade of 0.026 ounces per ton. Gold is recovered by heap leaching (pads located in the upper center of the photo). Mining operations at the Mesquite Mine ceased in May of 2001, but Western Goldfields Inc. has announced plans to re-start open-pit mining operations in late 2006 or early 2007. (Photo by Jim Pompy, Office of Mine Reclamation)

Amount and value of non-fuel mineral production for 2003, 2004, 2005.^{1,2}

Mineral	2003		2004		2005 ^P	
	Quantity	Value (thousands \$)	Quantity	Value (thousands \$)	Quantity	Value (thousands \$)
Boron Minerals short tons (B ₂ O ₃)	617,400	590,800	702,300	626,400	724,343	483,100
Cement (Portland) short tons	^e 12,781,300	^e 887,400	^e 13,150,600	^e 1,040,000	^e 12,616,000	^e 1,112,000
Clays						
Bentonite short tons	25,400	2,600	26,500	2,600	22,100	2,300
Common short tons	1,366,000	19,100	1,359,400	20,700	1,346,200	19,500
Fullers Earth short tons	W	W	217	W	219,900	W
Gemstones	NA	1,100	NA	1,100	NA	1,000
Gold ³ troy ounces	⁵ 141,000	⁴ 51,300	⁵ 95,700	⁴ 39,200	⁴ 65,300	⁴ 29,000
Sand and gravel:						
Construction short tons	167,586,600	1,146,800	182,825,400	1,283,800	176,400,000	1,269,000
Industrial short tons	1,968,000	50,100	2,190,700	55,700	2,145,500	54,920
Silver ³ troy ounces	⁵ 17,600	⁴ 90	⁵ 14,100	⁴ 90	⁴ 5,000	⁴ 40
Stone:						
Crushed short tons	61,206,400	366,000	61,048,700	365,500	58,873,500	361,500
Dimension short tons	44,100	10,000	46,300	10,200	47,018,300	11,600
Combined value of diatomite (2002 & 2003), feldspar, fuller's earth, gypsum iron ore (usable), kaolin, lime, masonry cement, magnesium compounds, perlite (crude), pumice and pumicite, pyrophyllite, salt, soda ash, sodium sulfate, zeolites and combined values of W	XX	323,200	XX	363,500	XX	374,300
Total	XX	3,448,500	XX	3,808,800	XX	3,718,300

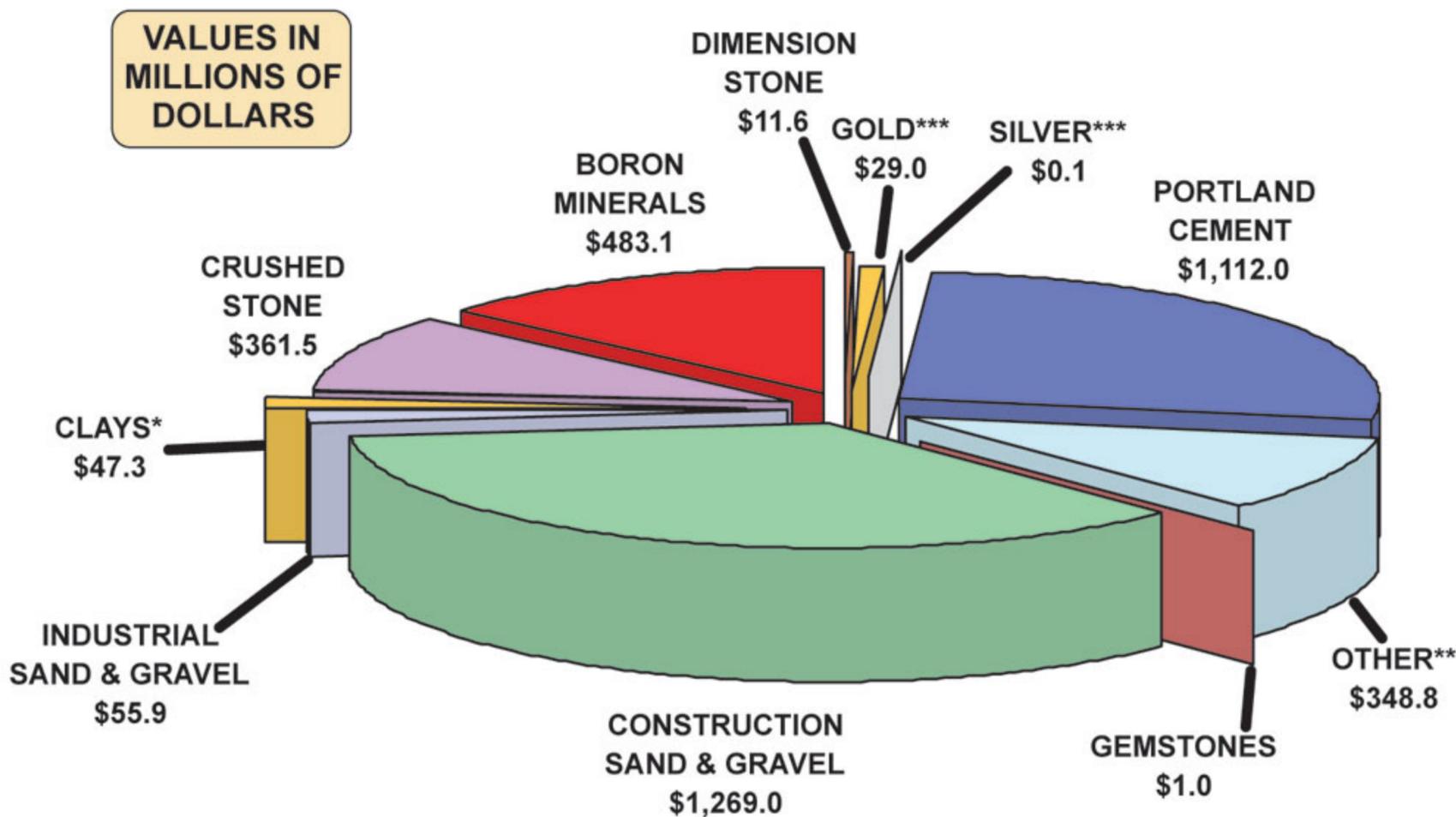
¹Production as measured by mine shipments, sales, or marketable production (including consumption by producers).
²Quantity data are rounded to the nearest 100; values are rounded to the nearest \$100,000.
³Recoverable content of ores, etc.
⁴Data from California Department of Conservation, California Geological Survey.
⁵Data from California Department of Conservation, Office of Mine Reclamation.
^eIncludes calcined, byproduct and crude gypsum.
^PPreliminary. ^eEstimate. NA=Not available. W=Withheld to avoid disclosing company proprietary data; value included with "combined value" data.
XX = Not applicable, NP=No Production

Modified from unpublished U.S. Geological Survey (USGS) data, subject to change; official USGS preliminary 2003 data

will be published in the California chapter of the USGS Mineral Yearbook, Area Reports: Domestic 2003, Volume II.

CALIFORNIA NON-FUEL MINERAL PRODUCTION 2005

Total Value \$3.72 Billion



*CLAYS Includes:
bentonite, common kaolin, and fuller's earth

**OTHER Includes:
diatomite, feldspar, gypsum, iron ore, kaolin, lime, magnesium compounds, masonry cement, perlite, pumice and pumicite, pyrophyllite, salt, soda ash, talc, sodium sulfate, and zeolites

*** Data from California Geological Survey

Data from unpublished U.S. Geological Survey (USGS) and subject to change; Official USGS preliminary 2005 data will be published in the California Chapter of the USGS Mineral Year Book, Area Reports: Domestic 2005, Volume II.