

CALIFORNIA NON-FUEL MINERALS 2014

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Based on U.S. Geological Survey (USGS) preliminary data for 2014, California ranked sixth after Arizona, Nevada, Minnesota, Texas, and Utah in the value of non-fuel mineral production, accounting for approximately 4.5 percent of the nation's total. The market value of non-fuel mineral production for California was \$3.5 billion. California produced more than two dozen non-fuel mineral commodities during the year, and was the only U.S. producer of boron compounds and rare earth elements. It ranked second behind Texas in the production of construction sand and gravel and portland cement. The state ranked sixth out of ten states that reported gold production for the year. Other mineral commodities produced include bentonite clay (including hectorite), common clay, crushed stone, diatomite, dimension stone, feldspar, fuller's earth, gemstones, gypsum, industrial sand and gravel, iron ore, kaolin clay, lime, magnesium compounds, masonry cement, perlite, pumice, pumicite, salt, silver, soda ash, sodium sulfate, and zeolites.

There were about 660 active mines in California producing non-fuel minerals during 2014 (California Office of Mine Reclamation). Approximately 5,500 people were employed at these mines and their processing facilities (California Employment Development Department, Labor Market Information Division).

INDUSTRIAL MINERALS

Construction grade sand and gravel was California's leading mineral commodity in terms of dollar value in 2014. The total value of construction sand and gravel produced in California in 2014 was \$1.01 billion for 96 million tons produced compared to the revised 2013 totals of \$958 million for 93.8 million tons produced. Portland cement ranked second in value at \$773 million for 10.7 million tons produced, an increase in value and tonnage over 2013. Boron minerals ranked third in value; because there are only two producers of boron minerals in the state, specific production values are withheld to protect proprietary company information. The value of boron production is included in the "other" category in the table and chart. Boron makes up more than 60 percent of the "other" category. Crushed stone ranked fourth with a value of \$369 million for 42.4 million tons produced, an increase over 2013 value and production.

Construction materials, including aggregate (sand and gravel and crushed stone) and cement, accounted for about 61 percent of the value of California's annual non-fuel mineral production in 2014. The building and paving industries consume large quantities of construction materials and they are essential to the state, both to maintain the existing infrastructure and to provide for new construction.

Aggregate

Total production of construction aggregate (sand and gravel and crushed stone) in 2014 was 138.5 million tons valued at \$1.38 billion. This compares to the revised 2013 production of 131.9 million tons valued at \$1.28 billion. The average statewide production of construction aggregate over the last 30 years (1984-2014) has been about 178 million tons per year.

In October, a revised Draft Environmental Impact Report for the proposed Austin Quarry in Madera County was released. The proposed quarry would be located on 671 acres approximately 12 miles east of the City of Madera and 8 miles north of the City of Fresno. The proposed operation would produce up to 2.5 million tons of crushed rock per year over a 100-year lifespan.

In November, the Final Environmental Impact Report for the proposed Las Pilitas Quarry in San Luis Obispo County was released. The San Luis Obispo County Planning Commission considered the issuance of a Conditional Use Permit in December, but continued the decision to the January 2015 meeting. The proposed quarry would produce up to 500,000 tons of construction aggregate per year for a period of approximately 30 years.

In November, a Final Environmental Impact Report for a proposed extension of the permit for the Syar Industries Lake Herman quarry in Solano County was released. The proposed extension would increase the annual production from 2 million to 4 million tons and would extend the quarry life for 35 years.

In November, a Final Environmental Impact Report for a proposed expansion of the Syar Industries quarry in Napa County was released. The proposed expansion would increase annual production from approximately 1 million to 2 million tons and would extend the quarry life for 35 years.

In December, the Fifth District Court of Appeal upheld Fresno County's approval of the Environmental Impact Report, Conditional Use Permit, and Reclamation Plan for the proposed Carmelita Mine. The proposed 886-acre operation will produce up to 1.25 million tons of aggregate per year over a 100-year lifespan.

Cement

Portland cement production was 10.7 million tons valued at \$773 million in 2014, ranking second in value among commodities produced in the state. This is a slight increase over the revised 2013 production of 10.2 million tons valued at \$714 million. Cement imports through California ports remained at low levels in 2014.

Rare Earth Elements

The Mountain Pass Mine in San Bernardino County operated by Molycorp Minerals LLC. was the only domestic producer of Rare Earth Elements (REE) in 2014. In 2014, work on the new chloralkali plant was completed and an expanded leach system, part of the process to recover rare earth elements, was also completed.

METALS

Gold dominated California's metal production in 2014 – comprising over 98 percent of the value of the state's metals production. Gold production decreased slightly to 143,900 ounces in 2014, from a 2013 production of 146,500 ounces. The value of gold production in the state decreased to \$182.4 million from \$207.2 million in 2013.

The state's largest gold producer was the New Gold Inc., Mesquite Mine in Imperial County – producing approximately 106,670 ounces for the year. The other major producer of gold in California was the Atna Resources Ltd., Briggs Mine in Inyo County, which produced about 30,900 ounces in 2014

Sutter Gold Mining Inc., placed its Lincoln Project in Sutter Creek, Amador County on Care and Maintenance in March of 2014. The operation has experienced issues with the design and installation of the mill that have so far prevented efficient commercial processing of ore from the mine.

Golden Queen Mining Company Ltd. continued construction of its Soledad Mountain project located approximately five miles south of Mojave in Kern County. The proposed open pit gold mine will use a cyanide heap leach and a Merrill-Crowe process to recover gold and silver. The company anticipates commissioning of the processing facilities in late 2015. Sale of waste rock as construction aggregate will also be considered after mining begins.

In addition to the above mentioned lode mines, placer gold was produced as a by-product from many sand and gravel mines in the northern and central parts of the state. California also has several small lode mines that sporadically produce gold including specimen gold and gold in quartz for use in jewelry.

Silver is produced as a byproduct of gold production and makes up less than two tenths of one percent of California's total metal production by value. Silver production decreased in 2014.

A small amount of iron ore was produced in 2014. Much of the iron ore currently produced in California is used in the production of portland cement and is considered an industrial mineral.

REVISIONS TO 2013 DATA

Based on revised USGS data for 2013, the 2013 market value of non-fuel minerals increased slightly from \$3.34 to \$3.37 billion. The revised 2013 data appears in the table.

THE CALIFORNIA GEOLOGICAL SURVEY

The California Geological Survey (CGS) Mineral Land Classification Project, a mandate of the Surface Mining and Reclamation Act (Public Resources Code Section 2710, et.seq.), 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 completed mineral resource studies in about one third of the state. During the year, CGS completed an updated classification project in the Temescal Valley Production Area in Riverside and San Bernardino counties and assisted the State Mining and Geology Board with designation activities in the Palm Springs, San Bernardino, San Gabriel Valley, Stockton-Lodi, San Luis Obispo-Santa Barbara, and North San Francisco Bay Production-Consumption regions. Mineral Land Classification updates are ongoing in the South San Francisco Bay and Western San Diego County regions.

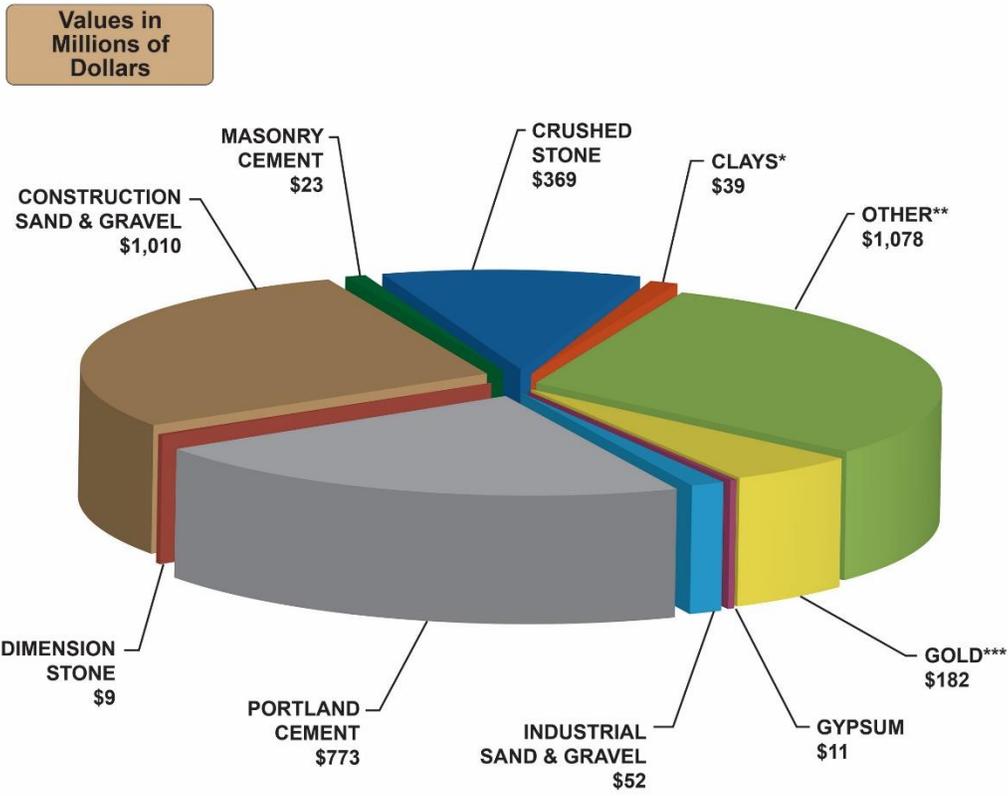
Amount and value of non-fuel mineral production for 2012, 2013, 2014. ^{1,2}

Mineral	2012		2013		2014 ^P		
	Quantity	Value (thousands \$)	Quantity	Value (thousands \$)	Quantity	Value (thousands \$)	
Cement:							
Masonry	short tons	167,600	15,900	196,200	^R 19,600	228,000	23,000
Portland	short tons	^R 9,259,300	^R 621,000	^R 10,207,300	^R 714,000	10,692,000	773,000
Clays ³		^R 793,700	^R 36,270	^R 750,000	^R 37,370	776,000	39,300
Gemstones		NA	970	NA	970	NA	1,220
Gold ⁴	troy ounces	⁵ 187,390	⁵ 313,430	⁵ 146,500	⁵ 207,200	⁵ 143,900	⁵ 182,400
Gypsum (crude)	short tons	^R 1,521,000	^R 9,640	^R 1,279,000	^R 17,700	1,344,800	11,000
Pumice & Pumicite	short tons	W	W	^R 59,500	2,620	63,000	2,010
Sand and gravel:							
Construction	short tons	^R 84,987,300	843,000	^R 93,805,700	^R 958,000	96,010,300	1,010,000
Industrial	short tons	^R 1,113,300	^R 37,600	951,300	^R 42,500	1,146,000	51,500
Silver ⁴	troy ounces	W	W	W	W	W	W
Stone:							
Crushed	short tons	^R 36,375,900	^R 319,000	^R 38,139,600	^R 325,000	42,439,000	369,000
Dimension	short tons	25,400	9,200	^R 26,500	9,210	26,000	9,210
Combined: Values for boron, diatomite, feldspar, iron ore, lime, magnesium compounds, perlite (crude), rare earth elements, salt, soda ash, sodium sulfate and zeolites are combined to avoid disclosing company proprietary data.							
Total combined and W values		^R 1,061,000		^R 1,038,000		1,075,000	
Total annual value-all minerals		^R 3,267,000		^R 3,372,000		3,547,000	
¹ Production as measured by mine shipments, sales, or marketable production (including consumption by producers). ² Quantities are rounded to the nearest 100 units except for gold and silver. Values are rounded to the nearest \$ 10,000 and totals to the nearest \$ 1,000,000. ³ Includes bentonite, kaolin, common, and montmorillonite (fuller's earth). ⁴ Recoverable content of ores, etc. ⁵ Data from California Department of Conservation, California Geological Survey. ^P Preliminary. NA=Not available. W=Withheld to avoid disclosing company proprietary data; value included with "combined value" data. ^R Revised from previous non-fuel mineral production report NA=Not available. W=Withheld to avoid disclosing company proprietary data; value included with "combined value" data.							

Modified from unpublished U.S. Geological Survey (USGS) data, subject to change; official USGS final 2014 data will be published in the California chapter of the USGS Mineral Yearbook, Area Reports: Domestic 2014, Volume II.

CALIFORNIA NON-FUEL MINERAL PRODUCTION 2014

Total Value \$3.5 Billion



*Clays include bentonite, kaolin, common, and montmorillonite (fullers earth)

**Other includes boron, diatomite, feldspar, gemstones, lime, magnesium compounds, perlite, pumice, pumicite, rare earth elements, salt, silver, soda ash, sodium sulfate and zeolites

***Data from the California Geological Survey

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