



# 2006 Minerals Yearbook

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## MINING AND QUARRYING TRENDS

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# MINING AND QUARRYING TRENDS

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Domestic survey data were prepared by the author and each of the statistical assistants who has responsibility for the mineral commodities indicated.

The mining and quarrying trends shown in this report were calculated from nonfuel mineral data reported to the U.S. Geological Survey (USGS) by mining and quarrying companies operating in the United States. The data for 2006 were reported on the “Mine, Development, and Mineral Exploration Supplement” statistical survey conducted by the USGS and on the production surveys for some more widely produced nonfuel mineral commodities, such as sand and gravel. Additional data for 2006 were derived from annual USGS production and consumption surveys of nonfuel mineral producers; these surveys covered 58 nonfuel mineral commodities produced in the United States. Nonfuel minerals exclude coal, petroleum coke, and related products.

The data in the following tables are reported according to the primary product of a mine or operation; a product of lesser value is considered to be a byproduct. The primary product is the product with the highest total value for the year. In some instances, the values of two products at the same operation are so similar that the products are coproducts.

Total domestic mining and waste removal for nonfuel mineral materials production amounted to 5.9 billion metric tons (Gt) in 2006, about the same as the revised figure of 2005. These materials included 4.6 Gt of crude ore mined or quarried and 1.3 Gt of mine ore and waste from development operations. Of the nonfuel mineral materials mined, 61% was for the production of

industrial minerals, and 39% was for the production of metals. Overall, 97% of nonfuel minerals was mined and quarried using surface methods, and 3% was mined underground.

Total surface mining, quarrying, and waste removal for industrial minerals production amounted to 3.5 Gt, about the same as the revised 2005 total. Crude ore mined at these surface operations was 3.2 Gt, and 265 million metric tons (Mt) was ore and waste from development operations. Underground mining for industrial minerals was only 129 Mt, nearly all of which was crude ore.

Total surface mining and waste removal for metal ores amounted to 2.3 Gt, about the same level as that of 2005. Of the 2.3 Gt, 1.2 Gt was crude ore mined, and 1.1 Gt was ore and waste from development operations. Underground mining of metal ores amounted to only 19 Mt, of which 84% was crude ore.

The major States in which mining for nonfuel minerals took place, in order of total material handled, were Nevada, Arizona, Florida, Minnesota, California, Texas, Utah, Michigan, Pennsylvania, and Georgia. These 10 States accounted for 60% of the tonnage removed in the production of nonfuel minerals mined in the United States. Nearly all nonfuel mine production in these States was from surface operations. Data that were concealed on table 2 were included when calculating the State rankings.

TABLE 1  
MATERIAL HANDLED AT SURFACE AND UNDERGROUND MINES IN THE UNITED STATES, BY TYPE<sup>1</sup>

(Million metric tons)

Type of ore and year	Surface <sup>2</sup>			Underground <sup>3</sup>			All mines		
	Crude ore	Waste <sup>4</sup>	Total	Crude ore	Waste <sup>4</sup>	Total	Crude ore	Waste <sup>4</sup>	Total
<b>Metals:</b>									
2002	1,060	1,020	2,080	15	3	18	1,080 <sup>r</sup>	1,020	2,100 <sup>r</sup>
2003	1,090 <sup>r</sup>	1,010 <sup>r</sup>	2,100 <sup>r</sup>	14	1	15	1,100 <sup>r</sup>	1,020	2,110
2004	1,190	1,060	2,250	14	2	16	1,200	1,060	2,260
2005	1,210	1,050	2,250 <sup>r</sup>	19	1	20	1,230	1,050	2,270 <sup>r</sup>
2006	1,240	1,050	2,290	16	3	19	1,260	1,050	2,310
<b>Industrial minerals:</b>									
2002	2,810 <sup>r</sup>	440 <sup>r</sup>	3,250 <sup>r</sup>	108	(5)	108	2,920 <sup>r</sup>	440 <sup>r</sup>	3,360 <sup>r</sup>
2003	2,850 <sup>r</sup>	414 <sup>r</sup>	3,260 <sup>r</sup>	107	(5)	107	2,960 <sup>r</sup>	414 <sup>r</sup>	3,370 <sup>r</sup>
2004	3,000	409	3,410	139	(5)	139	3,140	409	3,550
2005	3,090 <sup>r</sup>	370 <sup>r</sup>	3,460 <sup>r</sup>	137	1	138	3,230 <sup>r</sup>	370	3,600 <sup>r</sup>
2006	3,200	265	3,470	129	(5)	129	3,330	266	3,600
<b>All mineral commodities:</b>									
2002	3,880 <sup>r</sup>	1,460	5,330 <sup>r</sup>	123	3	126	4,000 <sup>r</sup>	1,460	5,460 <sup>r</sup>
2003	3,930 <sup>r</sup>	1,430	5,360 <sup>r</sup>	121	1 <sup>r</sup>	122 <sup>r</sup>	4,060 <sup>r</sup>	1,430	5,480 <sup>r</sup>
2004	4,190	1,470	5,650	153	2	155	4,340	1,470	5,810
2005	4,300 <sup>r</sup>	1,420	5,720 <sup>r</sup>	156	2	158	4,460 <sup>r</sup>	1,420	5,870 <sup>r</sup>
2006	4,450	1,320	5,760	144	3	147	4,590	1,320	5,910

<sup>r</sup>Revised.

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

<sup>2</sup>Includes materials from wells, ponds, and pumping operations.

<sup>3</sup>Includes solution mining.

<sup>4</sup>Includes ore and waste from development operations.

<sup>5</sup>Less than ½ unit.

TABLE 2  
MATERIAL HANDLED AT SURFACE AND UNDERGROUND MINES IN THE UNITED STATES IN 2006, BY COMMODITY AND STATE<sup>1</sup>

Commodity or State	Number of mines <sup>2</sup>	Surface <sup>3</sup>			Underground <sup>5</sup>			All mines		
		Crude ore (thousand metric tons)	Waste <sup>4</sup> (thousand metric tons)	Total (thousand metric tons)	Crude ore (thousand metric tons)	Waste <sup>4</sup> (thousand metric tons)	Total (thousand metric tons)	Crude ore (thousand metric tons)	Waste <sup>4</sup> (thousand metric tons)	Total (thousand metric tons)
<b>Commodity:</b>										
<b>Metal ore:</b>										
Gold	47	274,000	744,000	1,020,000	4,440	1,910	6,350	278,000	746,000	1,020,000
Iron	12	169,000	146,000	316,000	--	--	--	169,000	146,000	316,000
Other <sup>6</sup>	49	801,000	159,000	960,000	11,200	637	11,800	812,000	160,000	972,000
<b>Total</b>	<b>108</b>	<b>1,240,000</b>	<b>1,050,000</b>	<b>2,290,000</b>	<b>15,600</b>	<b>2,550</b>	<b>18,200</b>	<b>1,260,000</b>	<b>1,050,000</b>	<b>2,310,000</b>
<b>Industrial minerals:</b>										
Barite	4	561	W	561 <sup>7</sup>	--	--	--	561	W	561 <sup>7</sup>
Clays	639	41,200	35,800	77,000	1	(8)	1	41,200	35,800	77,000
Diatomite	11	812	W	812 <sup>7</sup>	--	--	--	812	W	812 <sup>7</sup>
Feldspar <sup>9</sup>	9	1,360	--	1,360	--	--	--	1,360	--	1,360
Gypsum	59	19,300	3,020	22,300	1,850	--	1,850	21,100	3,020	24,100
Phosphate rock	12	111,000	W	111,000 <sup>7</sup>	--	--	--	111,000	W	111,000 <sup>7</sup>
Pumice <sup>10</sup>	18	1,540	W	1,540 <sup>7</sup>	--	--	--	1,540	W	1,540 <sup>7</sup>
Salt	66	7,150	--	7,150	36,900	--	36,900	44,000	--	44,000
<b>Sand and gravel:</b>										
Construction	8,189	1,320,000	--	1,320,000	--	--	--	1,320,000	--	1,320,000
Industrial	120	31,700	--	31,700	W	--	W	31,700 <sup>11</sup>	--	31,700 <sup>11</sup>
Soda ash	6	--	--	--	11,000	--	11,000	11,000	--	11,000
<b>Stone:</b>										
Crushed	3,358	1,650,000	125,000	1,780,000	67,300	462	67,800	1,720,000	126,000	1,840,000
Dimension	166	1,330	W	1,330 <sup>7</sup>	W	--	W	1,330 <sup>11</sup>	W	1,330 <sup>7,11</sup>
Talc <sup>12</sup>	12	895	W	895 <sup>7</sup>	--	--	--	895	W	895 <sup>7</sup>
Other <sup>13</sup>	87	12,800	101,000	114,000	11,700	--	11,700	24,500	101,000	126,000
<b>Total</b>	<b>12,756</b>	<b>3,200,000</b>	<b>265,000</b>	<b>3,470,000</b>	<b>129,000</b>	<b>462</b>	<b>129,000</b>	<b>3,330,000</b>	<b>266,000</b>	<b>3,600,000</b>
<b>Grand total</b>	<b>12,864</b>	<b>4,450,000</b>	<b>1,320,000</b>	<b>5,760,000</b>	<b>144,000</b>	<b>3,010</b>	<b>147,000</b>	<b>4,590,000</b>	<b>1,320,000</b>	<b>5,910,000</b>
<b>State:</b>										
Alabama	222	77,000	6,440	83,400	W	W	W	77,000 <sup>11</sup>	6,440 <sup>11</sup>	83,400 <sup>11</sup>
Alaska	119	28,500	35,100	63,600	W	W	W	28,500 <sup>11</sup>	35,100 <sup>11</sup>	63,600 <sup>11</sup>
Arizona	345	526,000	95,800	622,000	--	--	--	526,000	95,800	622,000
Arkansas	158	48,200	7,390	55,600	W	--	W	48,200 <sup>11</sup>	7,390	55,600 <sup>11</sup>
California	578	216,000	W	216,000 <sup>7</sup>	W	W	W	216,000 <sup>11</sup>	W	216,000 <sup>7,11</sup>
Colorado	404	82,700	33,600	116,000	W	W	W	82,700 <sup>11</sup>	33,600 <sup>11</sup>	116,000 <sup>11</sup>
Connecticut	105	18,800	866	19,700	--	--	--	18,800	866	19,700
Delaware	16	3,790	W	3,790 <sup>7</sup>	--	--	--	3,790	W	3,790 <sup>7</sup>
Florida	195	263,000	W	263,000 <sup>7</sup>	--	--	--	263,000	W	263,000 <sup>7</sup>
Georgia	275	110,000	15,000	125,000	1,640	11	1,650	112,000	15,000	127,000
Hawaii	29	9,600	670	10,300	--	--	--	9,600	670	10,300
Idaho	287	42,700	W	42,700 <sup>7</sup>	--	--	--	42,700 <sup>11</sup>	W	42,700 <sup>7,11</sup>
Illinois	261	99,800	4,920	105,000	7,870	55	7,930	108,000	4,980	113,000
Indiana	253	82,700	4,810	87,500	2,880	17	2,900	85,600	4,820	90,400
Iowa	355	49,400	2,930	52,300	5,660	33	5,690	55,000	2,960	58,000
Kansas	364	35,400	2,370	37,800	2,540	2	2,550	38,000	2,380	40,300
Kentucky	128	48,600	3,670	52,300	20,100	141	20,200	68,700	3,810	72,500
Louisiana	155	33,000	1,130	34,100	13,100	--	13,100	46,100	1,130	47,200
Maine	201	14,600	382	15,000	--	--	--	14,600	382	15,000
Maryland	83	42,900	2,600	45,500	W	W	W	42,900 <sup>11</sup>	2,600 <sup>11</sup>	45,500 <sup>11</sup>
Massachusetts	142	30,900	1,100	32,000	--	--	--	30,900	1,100	32,000

See footnotes at end of table.

TABLE 2—Continued  
 MATERIAL HANDLED AT SURFACE AND UNDERGROUND MINES IN THE UNITED STATES IN 2006, BY COMMODITY AND STATE<sup>1</sup>

Commodity or State	Number of mines <sup>2</sup>	Surface <sup>3</sup>			Underground <sup>5</sup>			All mines		
		Crude ore (thousand metric tons)	Waste <sup>4</sup> (thousand metric tons)	Total (thousand metric tons)	Crude ore (thousand metric tons)	Waste <sup>4</sup> (thousand metric tons)	Total (thousand metric tons)	Crude ore (thousand metric tons)	Waste <sup>4</sup> (thousand metric tons)	Total (thousand metric tons)
State—Continued:										
Michigan	547	117,000	W	117,000 <sup>7</sup>	1,920	--	1,920	119,000	W	119,000 <sup>7</sup>
Minnesota	554	200,000	110,000	310,000	--	--	--	200,000	110,000	310,000
Mississippi	124	23,400	1,200	24,600	--	--	--	23,400	1,200	24,600
Missouri	291	88,200	6,800	95,000	W	W	W	88,200 <sup>11</sup>	6,800 <sup>11</sup>	95,000 <sup>11</sup>
Montana	251	44,500	W	44,500 <sup>7</sup>	W	W	W	44,500 <sup>11</sup>	W	44,500 <sup>7,11</sup>
Nebraska	171	16,400	393	16,800	W	W	W	16,400 <sup>11</sup>	393 <sup>11</sup>	16,800 <sup>11</sup>
Nevada	250	509,000	620,000	1,130,000	W	W	W	509,000 <sup>11</sup>	620,000 <sup>11</sup>	1,130,000 <sup>11</sup>
New Hampshire	112	15,500	494	16,000	--	--	--	15,500	494	16,000
New Jersey	98	68,700	3,770	72,500	--	--	--	68,700	3,770	72,500
New Mexico	491	50,700	W	50,700 <sup>7</sup>	12,300	--	12,300	63,000	W	63,000 <sup>7</sup>
New York	480	85,600	5,270	90,800	6,020	W	6,020 <sup>11</sup>	91,600	5,270 <sup>11</sup>	96,800 <sup>11</sup>
North Carolina	250	101,000	11,100	112,000	--	--	--	101,000	11,100	112,000
North Dakota	182	14,200	W	14,200 <sup>7</sup>	--	--	--	14,200	W	14,200 <sup>7</sup>
Ohio	356	115,000	6,600	122,000	W	--	W	115,000 <sup>11</sup>	6,600	122,000 <sup>11</sup>
Oklahoma	181	62,400	4,350	66,700	W	W	W	62,400 <sup>11</sup>	4,350 <sup>11</sup>	66,700 <sup>11</sup>
Oregon	289	48,900	3,140	52,000	--	--	--	48,900	3,140	52,000
Pennsylvania	357	122,000	8,480	130,000	3,750	26	3,780	126,000	8,500	134,000
Rhode Island	27	4,930	186	5,120	--	--	--	4,930	186	5,120
South Carolina	126	43,500	3,520	47,000	--	--	--	43,500	3,520	47,000
South Dakota	251	25,100	16,900	42,000	--	--	--	25,100	16,900	42,000
Tennessee	200	69,400	5,430	74,800	2,500	W	2,500 <sup>11</sup>	71,900	5,430 <sup>11</sup>	77,300 <sup>11</sup>
Texas	559	237,000	13,100	250,000	9,920	W	9,920 <sup>11</sup>	246,000	13,100 <sup>11</sup>	260,000 <sup>11</sup>
Utah	243	111,000	W	111,000 <sup>7</sup>	791	W	791 <sup>11</sup>	112,000	W	112,000 <sup>7,11</sup>
Vermont	121	10,000	364	10,400	W	--	W	10,000 <sup>11</sup>	364	10,400 <sup>11</sup>
Virginia	209	99,000	8,280	107,000	W	W	W	99,000 <sup>11</sup>	8,280 <sup>11</sup>	107,000 <sup>11</sup>
Washington	380	59,500	928	60,400	W	--	W	59,500 <sup>11</sup>	928	60,400 <sup>11</sup>
West Virginia	44	12,800	1,090	13,800	3,330	W	3,330 <sup>11</sup>	16,100	1,090 <sup>11</sup>	17,200
Wisconsin	753	77,900	2,930	80,800	--	--	--	77,900	2,930	80,800
Wyoming	292	34,100	4,850	38,900	9,970	--	9,970	44,000	4,850	48,900
Undistributed <sup>14</sup>	--	115,000	257,000	372,000	40,100	2,730	42,800	155,000	260,000	415,000
Total	12,864	4,450,000	1,320,000	5,760,000	144,000	3,010	147,000	4,590,000	1,320,000	5,910,000

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

- <sup>1</sup>Data are rounded to no more than three significant digits except "number of mines"; may not add to totals shown.
- <sup>2</sup>Includes quarries and other mineral operations.
- <sup>3</sup>Includes materials from wells, ponds, and pumping operations.
- <sup>4</sup>Includes ore and waste from development operations.
- <sup>5</sup>Includes solution mining.
- <sup>6</sup>Includes beryllium, copper, gold-silver, lead, lead-zinc, magnesium metal, molybdenum, platinum and palladium, silver, silver-copper, titanium, uranium, and zinc.
- <sup>7</sup>Excludes waste from mining operations and ore and waste from development operations.
- <sup>8</sup>Less than 1/2 unit.
- <sup>9</sup>Includes apatite.
- <sup>10</sup>Excludes volcanic cinder and scoria; included with "Crushed stone."
- <sup>11</sup>Excludes materials from underground operations.
- <sup>12</sup>Excludes pyrophyllite.
- <sup>13</sup>Includes abrasives, boron minerals, bromine, garnet, greensand marl, iodine, iron oxide pigments, kyanite, lithium minerals, magnesite, magnesium compounds, mica, olivine, perlite, potash, tripoli, vermiculite, wollastonite, zeolites, and industrial minerals indicated by symbol W.
- <sup>14</sup>Includes States indicated by symbol W.

TABLE 3  
VALUE OF PRINCIPAL MINERAL PRODUCTS AND BYPRODUCTS OF SURFACE AND UNDERGROUND MINES IN THE UNITED STATES IN 2006<sup>1</sup>

(Dollars per metric ton)

Commodity	Surface			Underground			All mines		
	Principal mineral product	Byproduct	Total	Principal mineral product	Byproduct	Total	Principal mineral product	Byproduct	Total
<b>Metal ore:</b>									
Gold	22.72	W	22.72 <sup>2</sup>	W	W	W	22.72 <sup>3</sup>	W	22.72 <sup>3</sup>
Iron	16.49	--	16.49	--	--	--	16.49	--	16.49
Average, metals <sup>4</sup>	17.67	W	17.67 <sup>2</sup>	97.91	33.93	131.84	19.02	1.65	20.67
<b>Industrial minerals:</b>									
Barite	35.90	--	35.90	--	--	--	35.90	--	35.90
Clays	43.06	W	43.06 <sup>2</sup>	--	--	--	43.06	W	43.06 <sup>2</sup>
Feldspar <sup>5</sup>	30.48	W	30.48 <sup>2</sup>	--	--	--	30.48	W	30.48 <sup>2</sup>
Gypsum	9.08	--	9.08	W	--	W	9.08 <sup>3</sup>	--	9.08 <sup>3</sup>
Phosphate rock	8.30	--	8.30	--	--	--	8.30	--	8.30
Pumice <sup>6</sup>	28.85	--	28.85	--	--	--	28.85	--	28.85
Salt	84.70	--	84.70	20.51	--	20.51	31.08	--	31.08
<b>Sand and gravel:</b>									
Construction	6.46	--	6.46	--	--	--	6.46	--	6.46
Industrial	25.42	--	25.42	W	--	W	25.42 <sup>3</sup>	--	25.42 <sup>3</sup>
Soda ash	--	--	--	106.53	--	106.53	106.53	--	106.53
<b>Stone:</b>									
Crushed	8.05	--	8.05	8.05	--	8.05	8.05	--	8.05
Dimension	198.63	--	198.63	W	--	W	198.63 <sup>3</sup>	--	198.63 <sup>3</sup>
Talc <sup>7</sup>	30.57	--	30.57	--	--	--	30.57	--	30.57
Average, industrial minerals <sup>8</sup>	8.65	0.07	8.72	22.17	--	22.17	9.17	0.07	9.24
Average, industrial minerals, excluding sand and gravel and stone <sup>8</sup>	25.31	0.79	26.10	33.06	--	33.06	23.53	0.16	23.69
Average, metals and industrial minerals <sup>4, 8</sup>	10.69	0.25	10.94	30.58	3.76	34.34	11.36	0.37	11.73
Average, metals and industrial minerals, excluding sand and gravel and stone <sup>4, 8</sup>	18.95	0.93	19.88	50.34	7.11	57.45	20.95	1.32	22.27

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

<sup>1</sup>Values calculated from unrounded data; may not add to totals shown because of independent rounding.

<sup>2</sup>Value of principal mineral product only.

<sup>3</sup>Value of products at surface operations only.

<sup>4</sup>Includes values of beryllium, copper, gold-silver, lead, lead-zinc, magnesium metal, molybdenum, platinum and palladium, silver, silver-copper, titanium, zinc and metals indicated by symbol W.

<sup>5</sup>Includes aplite.

<sup>6</sup>Excludes volcanic cinder and scoria; included with "Crushed stone."

<sup>7</sup>Excludes pyrophyllite.

<sup>8</sup>Includes values of abrasives, boron minerals, bromine, diatomite, garnet, greensand marl, iodine, iron oxide pigments, kyanite, lithium minerals, magnesite magnesium compounds, mica, olivine, perlite, potash, tripoli, vermiculite, wollastonite, zeolites, and industrial minerals indicated by symbol W.

TABLE 4  
 TWENTY-FIVE LEADING METAL AND INDUSTRIAL MINERAL MINES AND QUARRIES IN THE UNITED STATES IN 2006,  
 IN ORDER OF OUTPUT OF CRUDE ORE<sup>1</sup>

Name of mine, quarry or operation <sup>2</sup>	State	Operator	Commodity	Mining method
<b>Metal:</b>				
Morenci	Arizona	Phelps Dodge Corp.	Copper	Open pit.
Eastern Nevada operations <sup>3</sup>	Nevada	Newmont Mining Corporation	Gold	Open pit and stoping.
Betze-Post	do.	Barrick Gold Corporation	do.	Open pit and underground.
Bagdad	Arizona	Phelps Dodge Corp.	Copper-molybdenum	Open pit.
Chino	New Mexico	do.	do.	Do.
Sierrita	Arizona	do.	do.	Do.
Cortez	Nevada	Barrick Gold Corporation	Gold	Do.
Minntac	Minnesota	United States Steel Corporation	Iron ore	Do.
Bingham Canyon	Utah	Kennecott Utah Copper Corp.	Copper-molybdenum	Do.
Ray	Arizona	Asarco LLC <sup>4</sup>	Copper	Do.
Marigold	Nevada	Goldcorp Inc.	Gold	Do.
Hibbing Taconite	Minnesota	Cleveland-Cliffs Inc	Iron ore	Do.
Round Mountain	Nevada	Round Mountain Gold Corp.	Gold	Do.
Cresson	Colorado	Cripple Creek & Victor Gold Mining Co.	do.	Do.
Tyrone	New Mexico	Phelps Dodge Corp.	Copper	Do.
Keewatin Taconite	Minnesota	United States Steel Corporation	Iron ore	Do.
Bald Mountain	Nevada	Barrick Gold Corporation	Gold	Do.
Tilden	Michigan	Cleveland-Cliffs Inc	Iron ore	Do.
Continental Pit	Montana	Montana Resources	Copper-molybdenum	Do.
Empire	Michigan	Cleveland-Cliffs Inc	Iron ore	Do.
Northshore	Minnesota	do.	do.	Do.
Robinson	Nevada	Quadra Mining Ltd.	Copper-molybdenum	Do.
United Taconite	Minnesota	Cleveland-Cliffs Inc	Iron ore	Do.
Fort Knox	Alaska	Kinross Gold Corporation	Gold	Do.
Golden Sunlight	Montana	Barrick Gold Corporation	do.	Do.
<b>Industrial mineral:</b>				
Florida mines (seven)	Florida	The Mosaic Company	Phosphate rock	Do.
White Rock	do.	Vecellio & Grogan, Inc.	Stone, crushed	Quarry.
South Pasture	do.	CF Industries, Inc.	Phosphate rock	Open pit.
Swift Creek	do.	PCS Phosphate Co., Inc.	do.	Do.
Kingston Quarry	New Jersey	Trap Rock Industries, Inc.	Stone, crushed	Quarry.
Aurora	North Carolina	PCS Phosphate Co., Inc.	Phosphate rock	Open pit.
F.E.C. Quarry	Florida	Rinker Materials Corporation	Stone, crushed	Quarry.
Georgetown	Texas	Texas Crushed Stone Co., Inc.	do.	Do.
Balcones Plant	do.	Cemex, Inc.	do.	Do.
Moore's Station	New Jersey	Trap Rock Industries, Inc.	do.	Do.
Pennsuo Quarry	Florida	Titan Atlantic LLC	do.	Do.
Alico Quarry	do.	Rinker Materials Corporation	do.	Do.
McCook 378	Illinois	Vulcan Materials Co.	do.	Do.
Thornton Quarry	do.	Hanson Building Materials America, Inc.	do.	Do.
Great Salt Lake Plant	Utah	Great Salt Lake Minerals Corporation	Potash	Pumping/solar evaporation.
Ste. Genevieve Quarry	Missouri	Tower Rock Stone Co.	Stone, crushed	Quarry.
Mosaic Potash Carlsbad	New Mexico	The Mosaic Company	Potash	Stoping.
Chico Quarry	Texas	Martin Marietta Aggregates	Stone, crushed	Quarry.
White Rock-South	Florida	Vecellio & Grogan, Inc.	do.	Do.
Bauerly Brothers, Inc.	Minnesota	MDU Resources Group, Inc.	Sand and gravel, construction	Open pit.
Stoneport Quarry	Michigan	Lafarge North America, Inc.	Stone, crushed	Quarry.
OMYA California, Inc.	California	OMYA Industries, Inc.	do.	Do.
PBA Quarry	Florida	Palm Beach Aggregates, Inc.	do.	Do.
Perkins	California	A. Teichert & Son, Inc.	Sand and gravel, construction	Open pit.
Clinton Point	New York	Oldcastle, Inc./Materials Group	Stone, crushed	Quarry.

<sup>1</sup>List includes private-sector operations only; excludes U.S. Bureau of Land Management and U.S. Forest Service operations.

<sup>2</sup>Where data are not reported for individual mining operations, ranking is on the basis of production as reported for a group of operations.

<sup>3</sup>Includes Carlin Mines complex, Leeville Mine startup, Lone Tree complex, Midas Mine, Phoenix Mine startup, Twin Creeks Mine and Turquoise Ridge Mine; ore was mined from nine open pits and five underground mines.

<sup>4</sup>Formerly ASARCO Incorporated.

TABLE 5  
 TWENTY-FIVE LEADING METAL AND INDUSTRIAL MINERAL MINES AND QUARRIES IN THE UNITED STATES IN 2006,  
 IN ORDER OF OUTPUT OF TOTAL MATERIAL HANDLED<sup>1</sup>

Name of mine, quarry or operation <sup>2</sup>	State	Operator	Commodity	Mining method
<b>Metal:</b>				
Betze-Post	Nevada	Barrick Gold Corporation	Gold	Open pit and underground.
Eastern Nevada operations <sup>3</sup>	do.	Newmont Mining Corporation	do.	Open pit and stoping.
Morenci	Arizona	Phelps Dodge Corp.	Copper	Open pit.
Bingham Canyon	Utah	Kennecott Utah Copper Corp.	Copper-molybdenum	Do.
Cortez	Nevada	Barrick Gold Corporation	Gold	Do.
Minntac	Minnesota	United States Steel Corporation	Iron ore	Do.
Bagdad	Arizona	Phelps Dodge Corp.	Copper-molybdenum	Do.
Robinson	Nevada	Quadra Mining Ltd.	do.	Do.
Ray	Arizona	Asarco LLC <sup>4</sup>	Copper	Do.
Round Mountain	Nevada	Round Mountain Gold Corp.	Gold	Do.
Chino	New Mexico	Phelps Dodge Corp.	Copper-molybdenum	Do.
Sierrita	Arizona	do.	do.	Do.
Hibbing Taconite	Minnesota	Cleveland-Cliffs Inc	Iron ore	Do.
Marigold	Nevada	Goldcorp Inc.	Gold	Do.
Cresson	Colorado	Cripple Creek & Victor Gold Mining Co.	do.	Do.
Tilden	Michigan	Cleveland-Cliffs Inc	Iron ore	Do.
Fort Knox	Alaska	Kinross Gold Corporation	Gold	Do.
Mission Complex	Arizona	Asarco LLC <sup>4</sup>	Copper	Do.
Bald Mountain	Nevada	Barrick Gold Corporation	Gold	Do.
Keewatin Taconite	Minnesota	United States Steel Corporation	Iron ore	Do.
United Taconite	do.	Cleveland-Cliffs Inc	do.	Do.
Empire	Michigan	do.	do.	Do.
Thompson	Idaho	Thompson Creek Metals Co.	Molybdenum	Do.
Northshore	Minnesota	Cleveland-Cliffs Inc	Iron ore	Do.
Florida Canyon	Nevada	JIPANGU Inc.	Gold	Do.
<b>Industrial mineral:</b>				
Florida mines (seven)	Florida	The Mosaic Company	Phosphate rock	Do.
Boron Mine	California	U.S. Borax, Inc.	Boron	Do.
White Rock	Florida	Vecellio & Grogan, Inc.	Stone, crushed	Quarry.
South Pasture	do.	CF Industries, Inc.	Phosphate rock	Open pit.
Swift Creek	do.	PCS Phosphate Co., Inc.	do.	Do.
Aurora	North Carolina	do.	do.	Do.
Kingston Quarry	New Jersey	Trap Rock Industries, Inc.	Stone, crushed	Quarry.
F.E.C. Quarry	Florida	Rinker Materials Corporation	do.	Do.
Georgetown	Texas	Texas Crushed Stone Co., Inc.	do.	Do.
Balcones Plant	do.	Cemex, Inc.	do.	Do.
Moore's Station	New Jersey	Trap Rock Industries, Inc.	do.	Do.
Pennsuco Quarry	Florida	Titan Atlantic LLC	do.	Do.
Alico Quarry	do.	Rinker Materials Corporation	do.	Do.
McCook 378	Illinois	Vulcan Materials Co.	do.	Do.
Thornton Quarry	do.	Hanson Building Materials America, Inc.	do.	Do.
Ste. Genevieve Quarry	Missouri	Tower Rock Stone Co.	do.	Do.
Chico Quarry	Texas	Martin Marietta Aggregates	do.	Do.
Great Salt Lake Plant	Utah	Great Salt Lake Minerals Corporation	Potash	Pumping/solar evaporation.
Mosaic Potash Carlsbad	New Mexico	The Mosaic Company	do.	Stoping.
White Rock-South	Florida	Vecellio & Grogan, Inc.	Stone, crushed	Quarry.
Stoneport Quarry	Michigan	Lafarge North America, Inc.	do.	Do.
OMYA California, Inc.	California	OMYA Industries, Inc.	do.	Do.
Bauerly Brothers, Inc.	Minnesota	MDU Resources Group, Inc.	Sand and gravel, construction	Open pit.
PBA Quarry	Florida	Palm Beach Aggregates, Inc.	Stone, crushed	Quarry.
Clinton Point	New York	Oldcastle, Inc./Materials Group	do.	Do.

<sup>1</sup>List includes private-sector operations only; excludes U.S. Bureau of Land Management and U.S. Forest Service operations.

<sup>2</sup>Where data are not reported for individual mining operations, ranking is on the basis of production as reported for a group of operations.

<sup>3</sup>Includes Carlin Mines complex, Leeville Mine startup, Lone Tree complex, Midas Mine, Phoenix Mine startup, Twin Creeks Mine and Turquoise Ridge Mine; ore was mined from nine open pits and five underground mines.

<sup>4</sup>Formerly ASARCO Incorporated.

TABLE 6  
MARKETABLE PRODUCT AND ORE TREATED OR SOLD AT SURFACE AND UNDERGROUND  
MINES IN THE UNITED STATES IN 2006, BY SELECTED COMMODITY AND STATE<sup>1</sup>

(Thousand metric tons)

Commodity or State	Marketable product			Ore treated or sold		
	Surface	Underground	Total	Surface	Underground	Total
<u>Commodity:</u>						
<u>Metal ore:</u>						
Gold	W	W	W	167,000	4,440	171,000
Iron ore, usable	52,700	--	52,700	172,000	--	172,000
<u>Industrial minerals:</u>						
Barite	W	--	W	561	--	561
Clays	41,200	--	41,200	41,200	--	41,200
Diatomite	812	--	812	812	--	812
Feldspar <sup>2</sup>	1,360	--	1,360	1,360	--	1,360
Gypsum	19,300	1,850	21,100	19,300	1,850	21,100
Phosphate rock	30,100	--	30,100	111,000	--	111,000
Pumice <sup>3</sup>	1,540	--	1,540	1,540	--	1,540
Salt	(4)	39,800	39,800	(5)	41,300	41,300
<u>Sand and gravel:</u>						
Construction	1,320,000	--	1,320,000	1,320,000	--	1,320,000
Industrial	31,700	W	31,700	31,700	W	31,700
Soda ash	--	11,000	11,000	--	11,000	11,000
<u>Stone:</u>						
Crushed	1,650,000	67,300	1,720,000	1,650,000	67,300	1,720,000
Dimension	1,330	(6)	1,330	1,330	(7)	1,330
Talc <sup>8</sup>	895	--	895	895	--	895
<u>State:</u>						
Alabama	78,800	(6)	78,800	78,800	(7)	78,800
Alaska	14,900	(6)	14,900	34,800	(7)	34,800
Arizona	109,000	--	109,000	523,000	--	523,000
Arkansas	49,300	(6)	49,300	49,300	(7)	49,300
California	215,000	(6)	215,000	220,000	(7)	220,000
Colorado	60,800	(6)	60,800	83,200	(7)	83,200
Connecticut	18,800	--	18,800	18,800	--	18,800
Delaware	3,790	--	3,790	3,790	--	3,790
Florida	191,000	--	191,000	263,000	--	263,000
Georgia	100,000	1,640	102,000	110,000	1,640	112,000
Hawaii	9,600	--	9,600	9,600	--	9,600
Idaho	36,700	(6)	36,700	42,500	(7)	42,500
Illinois	101,000	7,870	108,000	101,000	7,870	109,000
Indiana	87,100	(6)	87,100	87,100	(7)	87,100
Iowa	50,300	5,660	56,000	50,300	5,660	56,000
Kansas	35,500	2,520	38,000	35,500	2,520	38,000
Kentucky	48,600	20,100	68,700	48,600	20,100	68,700
Louisiana	32,600	12,100	44,700	33,200	12,700	45,800
Maine	14,700	--	14,700	14,700	--	14,700
Maryland	43,200	(6)	43,200	43,200	(7)	43,200
Massachusetts	30,900	--	30,900	30,900	--	30,900
Michigan	97,800	1,220	99,000	118,000	1,430	120,000
Minnesota	105,000	--	105,000	201,000	--	201,000
Mississippi	23,400	--	23,400	23,400	--	23,400
Missouri	89,300	13,600	103,000	89,300	18,600	108,000
Montana	17,700	(6)	17,700	40,000	(7)	40,000
Nebraska	20,600	(6)	20,600	20,600	(7)	20,600
Nevada	58,700	(6)	58,700	194,000	(7)	194,000
New Hampshire	15,500	--	15,500	15,500	--	15,500
New Jersey	68,800	--	68,800	68,800	--	68,800
New Mexico	25,100	(6)	25,100	50,900	(7)	50,900
New York	85,800	4,650	90,400	85,900	4,810	90,700
North Carolina	96,100	--	96,100	102,000	--	102,000
North Dakota	14,300	--	14,300	14,300	--	14,300
Ohio	117,000	(6)	117,000	117,000	(7)	117,000
Oklahoma	63,200	(6)	63,200	63,200	(7)	63,200
Oregon	49,500	--	49,500	49,600	--	49,600
Pennsylvania	122,000	3,750	126,000	122,000	3,750	126,000
Rhode Island	4,930	--	4,930	4,930	--	4,930
South Carolina	44,100	--	44,100	44,400	--	44,400
South Dakota	23,000	--	23,000	25,800	--	25,800
Tennessee	72,200	(6)	72,200	72,200	(7)	72,200

See footnotes at end of table.



TABLE 6—Continued  
 MARKETABLE PRODUCT AND ORE TREATED OR SOLD AT SURFACE AND UNDERGROUND  
 MINES IN THE UNITED STATES IN 2006, BY SELECTED COMMODITY AND STATE<sup>1</sup>

(Thousand metric tons)

Commodity or State	Marketable product			Ore treated or sold		
	Surface	Underground	Total	Surface	Underground	Total
State—Continued:						
Texas	240,000	(6)	240,000	240,000	9,920	250,000
Utah	52,300	(6)	52,300	111,000	(7)	111,000
Vermont	10,100	(6)	10,100	10,100	(7)	10,100
Virginia	89,800	--	89,800	90,300	--	90,300
Washington	60,300	(6)	60,300	60,800	(7)	60,800
West Virginia	12,800	3,330	16,100	12,800	3,330	16,100
Wisconsin	78,100	(6)	78,100	78,100	(7)	78,100
Wyoming	34,400	9,960	44,400	34,400	9,960	44,400

W Withheld to avoid disclosing company proprietary data. -- Zero.

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

<sup>2</sup>Includes aplite.

<sup>3</sup>Excludes volcanic cinder and scoria; included with "Crushed stone."

<sup>4</sup>Withheld to avoid disclosing company proprietary data; included in "Marketable product, underground."

<sup>5</sup>Withheld to avoid disclosing company proprietary data; included in "Ore treated or sold, underground."

<sup>6</sup>Withheld to avoid disclosing company proprietary data; included in "Marketable product, surface."

<sup>7</sup>Withheld to avoid disclosing company proprietary data; included in "Ore treated or sold, surface."

<sup>8</sup>Excludes pyrophyllite.

TABLE 7  
MINING METHODS USED AT SURFACE OPERATIONS IN  
THE UNITED STATES IN 2006, BY COMMODITY

(Percentage of total material handled)

Commodity	Preceded by drilling and blasting	Not preceded by drilling and blasting <sup>1</sup>
<u>Metal ore:</u>		
Beryllium	100	--
Copper	100	--
Gold	100	--
Gold-silver	100	--
Lead	100	--
Lead-zinc	100	--
Iron	95	5
Magnesium metal	--	100
Molybdenum	100	--
Silver	100	--
Titanium	--	100
Uranium	--	100
Zinc	100	--
<u>Industrial minerals:</u>		
Abrasives	100	--
Barite	--	100
Boron minerals	100	--
Bromine	2	98
Clays	--	100
Diatomite	16	84
Feldspar <sup>2</sup>	46	54
Garnet	45	55
Greensand marl	--	100
Gypsum	98	2
Iodine	--	100
Iron oxide pigments	--	100
Kyanite	100	--
Lithium minerals	--	100
Magnesite	100	--
Magnesium compounds	--	100
Mica, scrap	--	100
Olivine	46	54
Perlite	24	76
Phosphate rock	5	95
Potash	--	100
Pumice <sup>3</sup>	35	65
Salt	--	100
<u>Sand and gravel:</u>		
Construction	--	100
Industrial	--	100
<u>Stone:</u>		
Crushed	99	1
Dimension	--	100
Talc <sup>4</sup>	94	6
Tripoli	61	39
Vermiculite	9	91
Wollastonite	100	--
Zeolites	100	--

-- Zero.

<sup>1</sup>Includes drilling and cutting without blasting, dredging, mechanical excavation and nonfloat washing, and other surface mining methods.

<sup>2</sup>Includes aplite.

<sup>3</sup>Excludes volcanic cinder and scoria; included with "Crushed stone."

<sup>4</sup>Excludes pyrophyllite.

TABLE 8  
EXPLORATION ACTIVITY IN THE UNITED STATES IN 2006, BY METHOD, COMMODITY, AND STATE<sup>1</sup>

(Meters)

Commodity or State	Churn and diamond drilling	Rotary and reverse circulation drilling	Percussion drilling, other drilling, and trenching	Grand total
<b>Commodity:</b>				
Gold	242,000	679,000	W	922,000
Silver	1,590	--	--	1,590
Other <sup>2</sup>	42,900	86,900	251,000	380,000
Total	287,000	766,000	251,000	1,300,000
Percentage of grand total	22	59	19	100
<b>State:</b>				
Alaska	2,700	9,200	W	11,900
Montana	1,590	--	--	1,590
Nebraska	--	75,800	--	75,800
Nevada	234,000	670,000	W	904,000
New York	4,110	--	--	4,110
Undistributed <sup>3</sup>	44,800	11,300	251,000	307,000
Total	287,000	766,000	251,000	1,300,000

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

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

<sup>2</sup>Includes cobalt, copper, iron ore, lead, lead-zinc, uranium, zinc, and commodity indicated by symbol W

<sup>3</sup>Includes Arizona, California, Colorado, Idaho, Minnesota, Missouri, Tennessee, Wyoming, and States indicated by symbol W.