



2011 Minerals Yearbook

MINING AND QUARRYING TRENDS [ADVANCE RELEASE]

MINING AND QUARRYING TRENDS

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Domestic survey data were prepared by the author and the statistical assistants who have responsibility for the mineral commodities covered in this report.

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 2011 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 2011 were derived from annual USGS production and consumption surveys of nonfuel mineral producers; these surveys accounted for 58 nonfuel mineral commodities produced in the United States. Nonfuel minerals do not include coal, petroleum coke, and related products.

The data in the following tables are reported according to the primary or principal 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 5.04 billion metric tons (Gt) in 2011, about the same level as the revised figure for 2010 (table 1). These materials included about 3.75 Gt of crude ore mined or quarried and 1.29 Gt of mine ore and waste from development operations. Of the nonfuel mineral materials (ore

and waste) removed, 49% was for the production of industrial minerals, and 51% was for the production of metals. Overall, 97% of nonfuel mineral materials 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 2.34 Gt, virtually unchanged from the revised 2010 total. Crude ore mined at these surface operations was 2.13 Gt, and 211 million metric tons (Mt) was waste removed, including ore and waste from development operations. Underground mining for industrial minerals was 130 Mt, nearly all of which was crude ore.

Total surface mining and waste removal to obtain metal ores amounted to 2.56 Gt, a 3% increase compared with the revised 2010 total. Of the 2.56 Gt, 1.47 Gt was crude ore mined, and 1.08 Gt was ore and waste from development operations. Underground mining of metal ores and waste removal amounted to 17 Mt, of which 94% was crude ore.

The leading States in which mining for nonfuel mineral materials took place were, in descending order of total material handled, Nevada, Arizona, Texas, Minnesota, Florida, California, Pennsylvania, Michigan, Utah, and Missouri (table 2). These 10 States accounted for 56% of the tonnage removed in the production of nonfuel mineral materials mined in the United States. Nearly all nonfuel mine production in these States was from surface operations.

TABLE 1
MATERIAL HANDLED AT SURFACE AND UNDERGROUND MINES IN THE UNITED STATES, BY TYPE¹

(Million metric tons)

Type of ore and year	Surface ²			Underground ³			All mines		
	Crude ore	Waste ⁴	Total	Crude ore	Waste ⁴	Total	Crude ore	Waste ⁴	Total
Metals:									
2007	1,370	1,120	2,500	19	3	22	1,390	1,130	2,520
2008	1,460	1,170	2,630	18	4	21	1,480	1,170	2,650
2009	1,330 ^r	1,090 ^r	2,420 ^r	13	1	15	1,340 ^r	1,090 ^r	2,430 ^r
2010	1,400 ^r	1,080 ^r	2,480 ^r	14 ^r	1	16 ^r	1,410 ^r	1,080 ^r	2,500 ^r
2011	1,470	1,080	2,560	16	1	17	1,490	1,080	2,570
Industrial minerals:									
2007	2,900	265	3,170	129	(5)	130	3,030	265	3,290
2008	2,520	251	2,770	150	1	151	2,670	252	2,920
2009	2,070	210	2,280	123	1	124	2,190	210	2,400
2010	2,080	205	2,290 ^r	128	1	129	2,210	206	2,420 ^r
2011	2,130	211	2,340	129	1	130	2,260	211	2,470
All mineral commodities:									
2007	4,270	1,390	5,660	148	3	151	4,420	1,390	5,810
2008	3,970	1,420	5,390	168	4	172	4,140	1,420	5,570
2009	3,400 ^r	1,300 ^r	4,690 ^r	136	2	138	3,530 ^r	1,300 ^r	4,830 ^r
2010	3,480 ^r	1,290 ^r	4,770 ^r	143 ^r	2	145 ^r	3,620 ^r	1,290 ^r	4,910 ^r
2011	3,600	1,290	4,890	145	2	147	3,750	1,290	5,040

^rRevised.

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

²Includes materials from wells, ponds, and pumping operations.

³Includes solution mining.

⁴Includes ore and waste from development operations.

⁵Less than ½ unit.

TABLE 2
MATERIAL HANDLED AT SURFACE AND UNDERGROUND MINES IN THE UNITED STATES IN 2011, BY COMMODITY AND STATE¹

Commodity or State	Number of mines ²	Surface ³		Underground ⁴		All mines		
		Crude ore (thousand metric tons)	Waste ⁵ (thousand metric tons)	Total Crude ore (thousand metric tons)	Waste ⁵ (thousand metric tons)	Total (thousand metric tons)	Crude ore (thousand metric tons)	Waste ⁵ (thousand metric tons)
Commodity:								
Metal ore:								
Copper ⁶	19	722,000	233,000	955,000	--	--	722,000	233,000
Gold	46	342,000	595,000	937,000	4,770	W	346,000	595,000
Iron	13	156,000	146,000	302,000	--	--	156,000	146,000
Other ⁷	29	255,000	105,000	361,000	11,100	1,370	12,500	266,000
Total	107	1,470,000	1,080,000	2,550,000	15,900	1,370	17,200	1,490,000
Industrial minerals:								
Clays	617	25,300	22,000	47,300	W	--	W	25,300
Feldspar ⁸	12	649	--	649	--	--	649	--
Gypsum	45	8,480	1,490	9,970	1,010	--	1,010	9,490
Phosphate rock	13	129,000	W	129,000 ⁹	--	--	129,000	W
Pumice ¹⁰	12	489	W	489 ⁹	--	--	489	W
Salt	67	7,880	--	7,880	37,700	--	37,700	45,500
Sand and gravel:								
Construction	7,763	810,000	--	810,000	--	--	810,000	--
Industrial	154	43,700	--	43,700	W	--	W	43,700
Soda ash	7	--	--	10,700	--	10,700	10,700	--
Stone:								
Crushed	3,693	1,090,000	81,400	1,170,000	71,600	597	72,200	1,160,000
Dimension	219	1,710	W	1,710 ⁹	W	--	W	1,710 ¹¹
Talc	6	616	W	616 ⁹	--	--	616	W
Other ¹²	111	10,500	106,000	116,000	8,360	4	8,370	18,900
Total	12,719	2,130,000	211,000	2,340,000	129,000	601	130,000	2,260,000
Grand total	12,826	3,600,000	1,290,000	4,890,000	145,000	1,970	147,000	3,750,000
State:								
Alabama	161	45,100	3,660	48,800	W	W	45,100 ¹¹	3,660 ¹¹
Alaska	138	19,200	W	19,200 ⁹	W	W	19,200	W
Arizona	305	572,000	W	572,000 ⁹	W	W	572,000	W
Arkansas	160	36,900	3,560	40,500	W	--	W	36,900 ¹¹
California	552	139,000	W	139,000 ⁹	W	W	139,000 ¹¹	W
Colorado	594	53,800	W	53,800 ⁹	W	--	W	53,800 ¹¹
Connecticut	110	12,800	590	13,400	--	--	12,800	590
Delaware	11	2,410	W	2,410 ⁹	--	--	2,410	W
Florida	173	163,000	W	163,000 ⁹	--	--	163,000	W
Georgia	223	51,100	8,770	59,800	W	W	51,100 ¹¹	8,770 ¹¹
Hawaii	46	5,170	337	5,510	--	--	5,170	337
Idaho	270	33,600	W	33,600 ⁹	W	W	33,600 ¹¹	W
Illinois	243	66,400	3,400	69,800	8,750	61	8,810	75,200
Indiana	234	53,800	3,270	57,100	W	W	53,800 ¹¹	3,270 ¹¹
Iowa	381	44,900	2,430	47,300	3,860	25	3,890	48,800
Kansas	301	25,600	1,530	27,100	2,960	1	2,960	28,600
Kentucky	114	36,600	2,650	39,300	16,500	124	16,600	53,100

See footnotes at end of table.

TABLE 2—Continued
MATERIAL HANDLED AT SURFACE AND UNDERGROUND MINES IN THE UNITED STATES IN 2011, BY COMMODITY AND STATE¹

Commodity or State	Number of mines ²	Surface ³			Underground ⁴			All mines		
		Crude ore (thousand metric tons)	Waste ⁵ (thousand metric tons)	Total (thousand metric tons)	Crude ore (thousand metric tons)	Waste ⁵ (thousand metric tons)	Total (thousand metric tons)	Crude ore (thousand metric tons)	Waste ⁵ (thousand metric tons)	Total (thousand metric tons)
State—Continued:										
Louisiana	147	29,000	517	29,500	14,400	--	14,400	43,300	517	43,900
Maine	208	11,400	312	11,700	--	--	--	11,400	312	11,700
Maryland	74	27,300	1,550	28,900	W	W	W	27,300	1,550	28,900 ¹¹
Massachusetts	142	19,400	841	20,300	--	--	--	19,400	841	20,300
Michigan	489	94,300	W	94,300 ⁹	W	W	W	94,300	W	94,300 ^{9,11}
Minnesota	641	165,000	W	165,000	--	--	--	165,000	W	165,000
Mississippi	110	14,500	612	15,200	--	--	--	14,500	612	15,200
Missouri	316	63,900	5,050	68,900	15,800	886	16,700	79,700	5,940	85,700
Montana	286	48,200	W	48,200 ⁹	W	W	W	48,200	W	48,200 ^{9,11}
Nebraska	173	16,500	295	16,800	W	W	W	16,500	295	16,800 ¹¹
Nevada	249	618,000	582,000	1,200,000	W	W	W	618,000	582,000	1,200,000 ¹¹
New Hampshire	131	11,200	407	11,600	--	--	--	11,200	407	11,600
New Jersey	85	23,700	876	24,600	--	--	--	23,700	876	24,600
New Mexico	181	78,500	482	79,000	W	--	W	78,500	482	79,000 ¹¹
New York	541	65,000	3,370	68,300	6,590	W	6,590	71,600	3,370	74,900 ¹¹
North Carolina	247	62,900	7,150	70,000	--	--	--	62,900	7,150	70,000
North Dakota	261	22,900	W	22,900 ⁹	--	--	--	22,900	W	22,900 ⁹
Ohio	359	72,100	3,930	76,000	8,430	W	8,430	80,500	3,930	84,400 ¹¹
Oklahoma	181	52,400	3,610	56,000	W	W	W	52,400	3,610	56,000 ¹¹
Oregon	303	28,700	1,360	30,100	--	--	--	28,700	1,360	30,100
Pennsylvania	387	88,100	6,400	94,500	11,900	95	12,000	100,000	6,500	106,000
Rhode Island	27	3,660	122	3,780	--	--	--	3,660	122	3,780
South Carolina	115	27,500	1,830	29,400	--	--	--	27,500	1,830	29,400
South Dakota	269	27,700	W	27,700 ⁹	--	--	--	27,700	W	27,700 ⁹
Tennessee	189	42,800	3,410	46,200	5,380	W	5,380	48,100	3,410	51,500 ¹¹
Texas	609	201,000	11,100	212,000	8,780	W	8,780	210,000	11,100	221,000 ¹¹
Utah	294	86,900	W	86,900 ⁹	W	--	W	86,900	W	86,900 ^{9,11}
Vermont	165	10,800	490	11,300	--	--	--	10,800	490	11,300
Virginia	177	62,000	4,310	66,300	W	W	W	62,000	4,310	66,300 ¹¹
Washington	335	43,300	1,120	44,500	W	W	W	43,300	1,120	44,500 ¹¹
West Virginia	41	13,800	1,040	14,800	W	W	W	13,800	1,040	14,800 ¹¹
Wisconsin	697	54,700	1,830	56,500	W	--	W	54,700	1,830	56,500 ¹¹
Wyoming	381	28,100	4,700	32,800	9,810	--	9,810	37,900	4,700	42,600
Undistributed ¹³	--	23,600	612,000	636,000	32,000	777	32,800	55,700	613,000	669,000
Total	12,826	3,600,000	1,290,000	4,890,000	145,000	1,970	147,000	3,750,000	1,290,000	5,040,000

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

¹Data are rounded to no more than three significant digits except "number of mines"; may not add to totals shown.

²Includes quarries and other mineral operations.

³Includes materials from wells, ponds, and pumping operations.

⁴Includes solution mining.

⁵Includes ore and waste from development operations.

TABLE 2—Continued

MATERIAL HANDLED AT SURFACE AND UNDERGROUND MINES IN THE UNITED STATES IN 2011, BY COMMODITY AND STATE¹

⁶Includes copper-molybdenum. With increased adoption of leaching technology, there may be less distinction between ore and waste. Significant tonnages of low-grade material, formerly classified as waste, are now considered to be low-grade leachable ore by some companies, resulting in a large shift in the ore-to-waste ratios and a reduction in ore value; more data can be found in table 3.

⁷Includes beryllium, gold-silver, lead, magnesium metal, molybdenum, platinum and palladium, silver, titanium, uranium, zinc, zinc-lead, and zinc-silver.

⁸Includes apatite.

⁹Excludes waste from mining operations and ore and waste from development operations.

¹⁰Excludes volcanic cinder and scoria, included with “Crushed stone.”

¹¹Excludes materials from underground operations.

¹²Includes abrasives, barite, boron minerals, bromine, diatomite, emery, 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.

¹³Includes material from States indicated by symbol W.

TABLE 3
VALUE OF PRINCIPAL MINERAL PRODUCTS AND BYPRODUCTS OF SURFACE AND UNDERGROUND MINES IN THE UNITED STATES IN 2011¹

(Dollars per metric ton)

Commodity	Surface			Underground			All mines		
	Principal mineral product	Byproduct	Total	Principal mineral product	Byproduct	Total	Principal mineral product	Byproduct	Total
Metal ore:									
Copper ²	8.95	W	8.95 ³	--	--	--	8.95	W	8.95 ³
Gold	50.56	W	50.56 ³	W	W	W	50.56	W	50.56 ^{3,4}
Iron	99.45 ⁵	--	99.45 ⁵	--	--	--	99.45 ⁵	--	99.45 ⁵
Average, metals ⁶	38.15	W	38.15 ³	196.02	41.68	237.70	40.56	W	40.56 ³
Industrial minerals:									
Clays	60.28	--	60.28	W	--	W	60.28	--	60.28 ⁴
Feldspar ⁷	62.43	--	62.43	--	--	--	62.43	--	62.43
Gypsum	8.31	--	8.31	W	--	W	8.31	--	8.31 ⁴
Phosphate rock	96.64 ⁸	--	96.64 ⁸	--	--	--	96.64 ⁸	--	96.64 ⁸
Pumice ⁹	22.89	--	22.89	--	--	--	22.89	--	22.89
Salt	W	--	W	38.64 ⁵	--	38.64 ⁵	38.64 ^{5,10}	--	38.64 ^{5,10}
Sand and gravel:									
Construction	7.43	--	7.43	--	--	--	7.43	--	7.43
Industrial	45.71	--	45.71	W	--	W	45.71 ⁴	--	45.71 ⁴
Soda ash	--	--	--	147.24	W	147.24 ³	147.24	--	147.24
Stone:									
Crushed	9.68	--	9.68	9.68	--	9.68	9.68	--	9.68
Dimension	189.62	--	189.62	W	--	W	189.62 ⁴	--	189.62 ³
Talc	35.43	--	35.43	--	--	--	35.43	--	35.43
Average, industrial minerals ¹¹	11.67	0.20	11.87	27.12	W	27.12	12.57	0.20	12.77
Average, industrial minerals, excluding sand and gravel and stone ¹¹	35.79	0.50	36.29	52.05	W	52.05	39.35	0.39	39.74
Average, metals and industrial minerals ^{6,11}	15.66	0.78	16.44	45.54	4.54	50.09	16.95	0.94	17.89
Average, metals and industrial minerals, excluding sand and gravel and stone ^{6,11}	24.71	1.65	26.36	86.99	10.11	97.10	27.66	2.05	29.71

¹Withheld to avoid disclosing company proprietary data; included in appropriate "Average." -- Zero.²Values calculated from unrounded data; may not add to totals shown because of independent rounding.³Includes copper-molybdenum. With increased adoption of leaching technology, there may be less distinction between ore and waste. Significant tonnages of low-grade material, formerly classified as waste, are now considered to be low-grade leachable ore by some companies, resulting in a large shift in the ore-to-waste ratios and a reduction in ore value.⁴Value of principal mineral product only.⁵Value of products at surface operations only.⁶Average value at mines only.⁷Includes beryllium, gold-silver, lead, magnesium metal, molybdenum, platinum and palladium, silver, titanium, uranium, zinc, zinc-lead, zinc-silver, and metals indicated by symbol W.⁸Includes aplite.⁹Average value based on the sold or used values.¹⁰Excludes volcanic cinder and scoria; included with "Crushed stone."¹¹Value of products at underground operations only.¹¹Includes values of abrasives, barite, boron minerals, bromine, diatomite, emery, 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 2011,
IN ORDER OF OUTPUT OF CRUDE ORE¹

Name of mine, quarry or operation ²	State	Operator	Commodity	Mining method
Metal:				
Morenci	Arizona	Freeport-McMoRan Copper & Gold Inc.	Copper-molybdenum	Open pit.
Eastern Nevada operations ³	Nevada	Newmont Mining Corp.	Gold	Open pit and underground.
Cortez ⁴	do.	Barrick Gold Corp.	do.	Open pit.
Goldstrike ⁵	do.	do.	do.	Open pit and underground.
Bagdad	Arizona	Freeport-McMoRan Copper & Gold Inc.	Copper-molybdenum	Open pit.
Sierrita	do.	do.	do.	Do.
Safford	do.	do.	Copper	Do.
Bald Mountain	Nevada	Barrick Gold Corp.	Gold	Do.
Minntac	Minnesota	United States Steel Corp.	Iron ore	Do.
Bingham Canyon	Utah	Kennercott Utah Copper Corp. ⁶	Copper-molybdenum	Do.
Mission Complex	Arizona	ASARCO LLC ⁷	Copper	Do.
Ray	do.	do.	do.	Do.
Tyrone	New Mexico	Freeport-McMoRan Copper & Gold Inc.	do.	Do.
Chino	do.	do.	Copper-molybdenum	Do.
Hibbing Taconite	Minnesota	Cliffs Natural Resources Inc.	Iron ore	Do.
Miami	Arizona	Freeport-McMoRan Copper & Gold Inc.	Copper	Do.
Smoky Valley Common Operation	Nevada	Kinross Gold Corp.	Gold	Do.
Marigold	do.	Goldcorp Inc.	do.	Do.
Tilden	Michigan	Cliffs Natural Resources Inc.	Iron ore	Do.
Ruby Hill	Nevada	Barrick Gold Corp.	Gold	Do.
Cresson	Colorado	AngloGold Ashanti Ltd.	do.	Do.
Golden Sunlight	Montana	Barrick Gold Corp.	do.	Do.
Keetwatic Taconite	Minnesota	United States Steel Corp.	Iron ore	Do.
Northshore	do.	Cliffs Natural Resources Inc.	do.	Do.
United Taconite	do.	do.	do.	Do.
Industrial mineral:				
Florida mines (five)	Florida	The Mosaic Co.	Phosphate rock	Do.
South Pasture	do.	CF Industries, Inc.	do.	Do.
Swift Creek	do.	PCS Phosphate Co., Inc.	do.	Do.
Beckmann	Texas	Martin Marietta Aggregates	Stone, crushed	Quarry.
Aurora	North Carolina	PCS Phosphate Co., Inc.	Phosphate rock	Open pit.
Balcones Plant	Texas	CEMEX S.A.B. de C.V.	Stone, crushed	Quarry.
Peerless Mine	Missouri	Mississippi Lime Co.	do.	Underground.
White Rock	Florida	Vecellio & Grogan, Inc.	do.	Quarry.
Ste. Genevieve Quarry	Missouri	Tower Rock Stone Co.	do.	Do.
Bristol Sand & Gravel	Texas	Lehigh Hanson, Inc.	Sand and gravel, construction	Open pit.
Hunter Quarry	do.	Hunter Industries, Inc.	Stone, crushed	Quarry.
Perch Hill 74	do.	Lehigh Hanson, Inc.	do.	Do.
Georgetown	do.	Texas Crushed Stone Co., Inc.	do.	Do.
Boron Mine	California	U.S. Borax Inc.	Boron	Do.
TXI Operations LP	Texas	Texas Industries, Inc.	Stone, crushed	Do.
Boscobel Plant	Virginia	Luck Stone Corp.	do.	Do.
Ste. Genevieve Quarry	Missouri	Holcim Group/Aggregate Industries Management, Inc.	do.	Do.
Macon Quarry	Georgia	Ready Mix USA Holding Co.	do.	Do.
McCook 378	Illinois	Vulcan Materials Co.	do.	Do.
Hampton Corners	New York	American Rock Salt Co.	Salt	Underground.
Freeport	Texas	Dow Chemical Co.	do.	Solution.
Pleasant Gap Mine	Pennsylvania	Graymont Ltd.	Stone, crushed	Quarry.
Maysville	Kentucky	Carmeuse Inc.	do.	Quarry and underground.
TXI Mill Creek Quarry	Oklahoma	Texas Industries, Inc.	do.	Quarry.
Voca	Texas	Carmeuse Inc.	do.	Do.

Do., do. Ditto.

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

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

³Includes Carlin Mines complex, Carlin East Mine, Gold Quarry Mine, Leeville Mine, Midas Mine, North Lantern Mine, Pete Mine, Phoenix Mine, Twin Creeks Mine, and Turquoise Ridge Mine; ore was mined from seven open pits and eight underground mines.

TABLE 4—Continued
TWENTY-FIVE LEADING METAL AND INDUSTRIAL MINERAL MINES AND QUARRIES IN THE UNITED STATES IN 2011,
IN ORDER OF OUTPUT OF CRUDE ORE¹

⁴Includes Cortez Hills and Cortez Pipeline Mines.

⁵Includes Storm Mine.

⁶Wholly owned subsidiary of Rio Tinto plc.

⁷Wholly owned subsidiary of Grupo Mexico, S.A.B. de C.V.

TABLE 5
TWENTY-FIVE LEADING METAL AND INDUSTRIAL MINERAL MINES AND QUARRIES IN THE UNITED STATES IN 2011,
IN ORDER OF OUTPUT OF TOTAL MATERIAL HANDLED¹

Name of mine, quarry or operation ²	State	Operator	Commodity	Mining method
Metal:				
Eastern Nevada operations ³	Nevada	Newmont Mining Corp.	Gold	Open pit and underground.
Morenci	Arizona	Freeport-McMoRan Copper & Gold Inc.	Copper-molybdenum	Open pit.
Goldstrike ⁴	Nevada	Barrick Gold Corp.	Gold	Open pit and underground.
Cortez ⁵	do.	do.	do.	Open pit.
Bingham Canyon	Utah	Kennecott Utah Copper Corp. ⁶	Copper-molybdenum	Do.
Bald Mountain	Nevada	Barrick Gold Corp.	Gold	Do.
Minntac	Minnesota	United States Steel Corp.	Iron ore	Do.
Bagdad	Arizona	Freeport-McMoRan Copper & Gold Inc.	Copper-molybdenum	Do.
Sierrita	do.	do.	do.	Do.
Safford	do.	do.	Copper	Do.
Smoky Valley Common Operation	Nevada	Kinross Gold Corp.	Gold	Do.
Tilden	Michigan	Cliffs Natural Resources Inc.	Iron ore	Do.
Robinson	Nevada	KGHM International Ltd. ⁷	Copper-molybdenum	Do.
Marigold	do.	Goldcorp Inc.	Gold	Do.
Cresson	Colorado	AngloGold Ashanti Ltd.	do.	Do.
Ray	Arizona	ASARCO LLC ⁸	Copper	Do.
Hibbing Taconite	Minnesota	Cliffs Natural Resources Inc.	Iron ore	Do.
Mission Complex	Arizona	ASARCO LLC ⁸	Copper-molybdenum	Do.
Mesquite	California	New Gold Inc.	Gold	Do.
Ruby Hill	Nevada	Barrick Gold Corp.	do.	Do.
Golden Sunlight	Montana	do.	do.	Do.
Thompson Creek Mine	Idaho	Thompson Creek Metals Co., Inc.	Molybdenum	Do.
Keetwatic Taconite	Minnesota	United States Steel Corp.	Iron ore	Do.
United Taconite	do.	Cliffs Natural Resources Inc.	do.	Do.
Tyrone	New Mexico	Freeport-McMoRan Copper & Gold Inc.	Copper	Do.
Industrial mineral:				
Florida mines (five)	Florida	The Mosaic Co.	Phosphate rock	Do.
Boron Mine	California	U.S. Borax Inc.	Boron	Do.
South Pasture	Florida	CF Industries, Inc.	Phosphate rock	Do.
Swift Creek	do.	PCS Phosphate Co., Inc.	do.	Do.
Aurora	North Carolina	do.	do.	Do.
Beckmann	Texas	Martin Marietta Aggregates	Stone, crushed	Quarry.
Balcones Plant	do.	CEMEX S.A.B. de C.V.	do.	Do.
White Rock	Florida	Vecellio & Grogan, Inc.	do.	Do.
Peerless Mine	Missouri	Mississippi Lime Co.	do.	Underground.
Ste. Genevieve Quarry	do.	Tower Rock Stone Co.	do.	Quarry.
Hunter Quarry	Texas	Hunter Industries, Inc.	do.	Do.
Perch Hill 74	do.	Lehigh Hanson, Inc.	do.	Do.
Georgetown	do.	Texas Crushed Stone Co., Inc.	do.	Do.
Bristol Sand & Gravel	do.	Lehigh Hanson, Inc.	Sand and gravel, construction	Open pit.
TXI Operations LP	do.	Texas Industries, Inc.	Stone, crushed	Quarry.
Boscobel Plant	Virginia	Luck Stone Corp.	do.	Do.
Ste. Genevieve Quarry	Missouri	Holcim Group/Aggregate Industries Management, Inc.	do.	Do.
Macon Quarry	Georgia	Ready Mix USA Holding Co.	do.	Do.

See footnotes at end of table.

TABLE 5—Continued
TWENTY-FIVE LEADING METAL AND INDUSTRIAL MINERAL MINES AND QUARRIES IN THE UNITED STATES IN 2011,
IN ORDER OF OUTPUT OF TOTAL MATERIAL HANDLED¹

Name of mine, quarry or operation ²	State	Operator	Commodity	Mining method
Industrial mineral—Continued:				
McCook 378	Illinois	Vulcan Materials Co.	do.	Do.
TXI Mill Creek Quarry	Texas	Texas Industries, Inc.	do.	Do.
Hampton Corners	New York	American Rock Salt Co.	Salt	Underground.
Freeport	Texas	Dow Chemical Co.	do.	Solution.
Voca	do.	Carmeuse Inc.	Stone, crushed	Quarry.
Marblehead	Ohio	Lafarge Corp.	do.	Do.
Washington Plants (five)	Washington	Eucon Corp.	do.	Do.

Do., do. Ditto.

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

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

³Includes Carlin Mines complex, Carlin East Mine, Gold Quarry Mine, Leeville Mine, Midas Mine, North Lantern Mine, Pete Mine, Phoenix Mine, Twin Creeks Mine, and Turquoise Ridge Mine; ore was mined from seven open pits and eight underground mines.

⁴Includes Storm Mine.

⁵Includes Cortez Hills and Cortez Pipeline Mines.

⁶Wholly owned subsidiary of Rio Tinto plc.

⁷Formerly Quadra FNX Mining Ltd.

⁸Wholly owned subsidiary of Grupo Mexico, S.A.B. de C.V.

TABLE 6
MARKETABLE PRODUCT AND ORE TREATED OR SOLD AT SURFACE AND UNDERGROUND MINES
IN THE UNITED STATES IN 2011, BY SELECTED COMMODITY AND STATE¹

(Thousand metric tons, unless otherwise specified)

Commodity or State	Marketable product			Ore treated or sold		
	Surface	Underground	Total	Surface	Underground	Total
Commodity:						
Metal ore:						
Copper ²	1,120	--	1,120	719,000	--	719,000
Gold	(3)	(3)	234,000 ⁴	209,000	4,700	214,000
Iron ore, usable	54,700	--	54,700	156,000	--	156,000
Industrial minerals:						
Clays	25,300	(5)	25,300	25,300	(6)	25,300
Feldspar ⁷	649	--	649	649	--	649
Gypsum	8,480	1,010	9,490	8,480	1,010	9,490
Phosphate rock	28,100	--	28,100	129,000	--	129,000
Pumice ⁸	489	--	489	489	--	489
Salt	(9)	45,500	45,500	(10)	43,500	43,500
Sand and gravel:						
Construction	810,000	--	810,000	810,000	--	810,000
Industrial	43,700	(5)	43,700	43,700	(6)	43,700
Soda ash	--	10,700	10,700	--	10,700	10,700
Stone:						
Crushed	1,090,000	71,600	1,160,000	1,090,000	71,600	1,160,000
Dimension	1,710	(5)	1,710	1,710	(6)	1,710
Talc	616	--	616	616	--	616
State:						
Alabama	45,500	(5)	45,500	45,500	(6)	45,500
Alaska	9,400	(5)	9,400	42,100	(6)	42,100
Arizona	42,700	--	42,700	516,000	(6)	516,000
Arkansas	37,900	(5)	37,900	37,900	(6)	37,900
California	118,000	(5)	118,000	138,000	(6)	138,000
Colorado	33,800	(5)	33,800	54,100	(6)	54,100
Connecticut	12,800	--	12,800	12,800	--	12,800
Delaware	2,410	--	2,410	2,410	--	2,410
Florida	163,000	--	163,000	163,000	--	163,000
Georgia	53,900	(5)	53,900	53,900	(6)	53,900

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 2011, BY SELECTED COMMODITY AND STATE¹

(Thousand metric tons, unless otherwise specified)

Commodity or State	Marketable product			Ore treated or sold		
	Surface	Underground	Total	Surface	Underground	Total
<u>State:</u>						
Hawaii	5,170	--	5,170	5,170	--	5,170
Idaho	20,800	(5)	20,800	34,300	(6)	34,300
Illinois	67,200	8,750	76,000	67,200	8,750	76,000
Indiana	60,400	(5)	60,400	60,400	(6)	60,400
Iowa	45,300	3,860	49,100	45,300	3,860	49,100
Kansas	26,200	2,980	29,200	26,000	2,980	29,000
Kentucky	36,800	16,500	53,300	36,800	16,500	53,300
Louisiana	28,000	13,500	41,600	29,000	14,300	43,300
Maine	11,500	--	11,500	11,500	--	11,500
Maryland	27,400	(5)	27,400	27,400	(6)	27,400
Massachusetts	19,500	--	19,500	19,500	--	19,500
Michigan	69,700	(5)	69,700	96,500	(6)	96,500
Minnesota	90,900	--	90,900	165,000	--	165,000
Mississippi	15,000	--	15,000	15,000	--	15,000
Missouri	64,100	11,000	75,100	64,100	15,800	79,900
Montana	13,700	(5)	13,700	33,400	(6)	33,400
Nebraska	21,200	(5)	21,200	21,200	(6)	21,200
Nevada	26,400	(5)	26,400	185,000	(6)	185,000
New Hampshire	11,200	--	11,200	11,200	--	11,200
New Jersey	26,600	--	26,600	26,600	--	26,600
New Mexico	17,000	(5)	17,000	78,700	(6)	78,700
New York	65,700	6,280	71,900	65,900	6,290	72,200
North Carolina	57,600	--	57,600	63,300	--	63,300
North Dakota	22,900	--	22,900	22,900	--	22,900
Ohio	72,400	8,640	81,000	72,400	8,640	81,000
Oklahoma	52,800	(5)	52,800	52,800	(6)	52,800
Oregon	28,900	--	28,900	29,000	--	29,000
Pennsylvania	89,000	11,900	101,000	89,000	11,900	101,000
Rhode Island	3,660	--	3,660	3,660	--	3,660
South Carolina	27,500	--	27,500	27,500	--	27,500
South Dakota	19,100	--	19,100	28,100	--	28,100
Tennessee	43,000	2,990	46,000	43,000	5,380	48,400
Texas	201,000	8,580	210,000	201,000	8,780	210,000
Utah	37,100	(5)	37,100	86,800	(6)	86,800
Vermont	10,800	--	10,800	10,800	--	10,800
Virginia	57,700	(5)	57,700	61,000	(6)	61,000
Washington	43,600	(5)	43,600	44,000	(6)	44,000
West Virginia	17,700	(5)	17,700	17,700	(6)	17,700
Wisconsin	55,500	(5)	55,500	55,500	(6)	55,500
Wyoming	28,300	9,800	38,100	28,300	9,810	38,100

-- Zero.

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

²Includes copper-molybdenum.

³Withheld to avoid disclosing company proprietary data; included in "Marketable product, total."

⁴Kilograms.

⁵Withheld to avoid disclosing company proprietary data; included in "Marketable product, surface."

⁶Withheld to avoid disclosing company proprietary data; included in "Ore treated or sold, surface."

⁷Includes aplite.

⁸Excludes volcanic cinder and scoria; included with "Crushed stone."

⁹Withheld to avoid disclosing company proprietary data; included in "Marketable product, underground."

¹⁰Withheld to avoid disclosing company proprietary data; included in "Ore treated or sold, underground."

TABLE 7
MINING METHODS USED AT SURFACE OPERATIONS IN THE UNITED STATES
IN 2011, BY COMMODITY

(Percentage of total material handled)

Commodity	Preceded by drilling and blasting	Not preceded by drilling and blasting ¹
<u>Metal ore:</u>		
Beryllium	100	--
Copper ²	98	2
Gold ³	85	15
Iron	95	5
Magnesium metal	--	100
Molybdenum	100	--
Silver	100	--
Titanium	--	100
Zinc	100	--
<u>Industrial minerals:</u>		
Abrasives	100	--
Barite	19	81
Boron minerals	100	--
Bromine	48	52
Clays	--	100
Diatomite	4	96
Emery	100	--
Feldspar ⁴	94	6
Garnet	38	62
Greensand marl	--	100
Gypsum	100	--
Iodine	--	100
Iron oxide pigments	--	100
Kyanite	100	--
Lithium minerals	--	100
Magnesite	100	--
Magnesium compounds	--	100
Mica, scrap	71	29
Olivine	100	--
Perlite	36	64
Phosphate rock	3	97
Potash	--	100
Pumice ⁵	34	66
Salt	--	100
<u>Sand and gravel:</u>		
Construction	--	100
Industrial	--	100
<u>Stone:</u>		
Crushed	100	--
Dimension	--	100
Talc	100	--
Tripoli	58	42
Vermiculite	30	70
Wollastonite	83	17
Zeolites	99	1

-- Zero.

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

²Includes copper-molybdenum.

³Includes gold-silver.

⁴Includes aplite.

⁵Excludes volcanic cinder and scoria; included with "Crushed stone."

TABLE 8
EXPLORATION ACTIVITY IN THE UNITED STATES IN 2011, BY METHOD, COMMODITY, AND STATE¹

(Meters)

Commodity or State	Churn and diamond drilling	Rotary and reverse circulation drilling	Percussion drilling, other drilling, and trenching	Grand total
Commodity:				
Copper ²	42,700	W	W	42,700
Gold	362,000	986,000	W	1,350,000
Lead	44,000	31,300	--	75,300
Zinc	9,330	--	--	9,330
Other ³	311,000	254,000	91,700	656,000
Total	768,000	1,270,000	91,700	2,130,000
Percentage of grand total	36	60	4	100
State:				
Alaska	16,600	332,000	W	348,000
Arizona	25,600	30,400	--	55,900
Missouri	27,800	31,300	--	59,100
Nebraska	--	133,000	--	133,000
Nevada	329,000	651,000	W	980,000
Washington	16,200	6,570	--	22,800
Undistributed ⁴	354,000	86,900	91,700	532,000
Total	768,000	1,270,000	91,700	2,130,000

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

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

²Includes copper-molybdenum.

³Includes diatomite, lithium minerals, molybdenum, nickel, platinum and palladium, silver, and uranium, and commodities indicated by symbol W.

⁴Includes California, Idaho, Michigan, Montana, New York, Washington, and Wyoming, and States indicated by symbol W.