



# Mineral Industry Surveys

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## PRECIOUS METALS IN MAY 2003

U.S. mines produced 21,200 kilograms (kg) of gold and 107,000 kg of silver in May 2003. Compared with April 2003, production of gold was down 6% in California and up 10% in Nevada, and production of silver was up 29% in Nevada.

### Gold

**Domestic.**—The World Gold Council (WGC) filed a registration statement with the U.S. Securities and Exchange Commission requesting permission to trade shares of physical gold on the New York Stock Exchange. Following approval of its filing, The World Gold Trust will issue equity gold shares (listed under ticker symbol GLD) in return for gold bullion. This is the first time U.S. investors will have the option of buying a commodity outright on a stock exchange (American Metal Market, 2003c).

Placer Dome Inc. reported that it made a new gold discovery at the Cortez joint venture in Nevada. Cortez operates the Pipeline gold mine, and the discovery is located about 12 kilometers from the mine. The strike length is 300 meters (m) by a width of 150 m, beginning about 120 m below the surface (Mining Journal, 2003).

Queenstake Resources Ltd. (Canada) signed a letter of intent to buy the Jerritt Canyon gold mine located in the Independence Mountain Range of Nevada. The company is acquiring 70% and 30% interest from AngloGold Ltd. and Meridian Gold Inc., respectively. Jerritt has historically produced 9,300 to 1,100 kg (300,000-350,000 troy ounces) of gold annually from the Carlin-style mineralization (Platts Metals Week, 2003e).

**International.**—According to CPM Group's "Gold Survey 2003," world gold mine production decreased 5.5% in 2002, with a further decline of 2.2% forecasted for 2003. Although gold output in South Africa, the world's largest gold producer, was unchanged, production fell sharply in other countries during 2002. Output in the United States, the world's second largest gold producer, fell 11.1%; Canada, 7.8%; and Australia, 5.5%. CPM reported industrial demand for gold decreased 4.3% in

2002 and jewelry demand suffered a major setback, falling 11.8%. Therefore, total fabrication demand for gold dropped 11.2% in 2002. In contrast, CPM reported net private investment in gold, including coins, bullion, and medallions, increased 169% in 2002, more than in any year since 1967. CPM forecasts investment demand to fall 17.5% in 2003. Gold recycled from scrap soared 18.3% in 2002 due to higher gold prices. Adding gold output from scrap, gold mines, and sales, the total available gold supply rose 2.2% in 2002 (Platts Metals Week, 2003a).

In AME Mineral Economics' latest survey, a major shift in production and cost rankings has been reported for gold mining companies over the past 2 years. AngloGold Ltd. is no longer the world's largest gold producer. Newmont Mining Corp. easily surpassed AngloGold. However, AngloGold is the lowest cost gold producer, a title it claims from Barrick Gold Corp. The primary reason for the changes is the trend toward consolidation that has taken place within the gold mining industry. AME estimated that the average total gold operating cost (cash cost plus depreciation and royalties) for Western world gold mines was unchanged in 2002 at \$217 per ounce. For the first time in 14 years, the United States is no longer the lowest cost producer among the top four gold producing countries (Mining Journal, 2003a).

U.S. troops stationed in Iraq found \$600 million in gold bars during May 24-28. An estimated \$100 million was seized near Kirkuk and another \$500 million was taken on the border with Syria. The gold was not refined but had been melted down into 20- and 40-pound bars. The gold bars were taken into U.S. custody (American Metal Market, 2003a).

Canada sold about one-sixth (85,700 ounces) of its gold reserves in April 2002. The Canadian Government began selling its gold reserves in 1980 and said that its policy favors gradual and controlled reduction in gold holdings. Canada's gold sales were small compared with the entire gold market and

did not have the leverage to cause any disruption in the market (American Metal Market, 2003b).

Harmony Gold Mining Company Ltd. and African Rainbow Minerals Gold Ltd. (ARMgold) have agreed to merge, which would create the fifth-largest gold producer in the world and largest gold producer in South Africa. The merged company is to be called Harmony and the deal already has 55% backing of ARMgold shareholders. The new company would achieve the level of black ownership needed to comply with the government's new empowerment charter for the domestic mining sector (Platts Metals Week, 2003b).

Ashanti Goldfields reported that AngloGold Ltd. is in merger discussions to buy the Ghana-based Ashanti for about \$1 billion in stock. The deal would bring AngloGold near to again being the world's number one gold producer with a projected annual gold production of 230,000 kg (7.5 million troy ounces) (Platts Metals Week, 2003a).

The London Bullion Market Association gold clearing statistics fell in April to the second lowest level on record. Gold transfers decreased 8% in comparison with those of April 2002, reaching 480,000 kg (15.4 million ounces). The number of gold transfers declined to 764 per day from 866 per day. Compared to April 2002, kilograms of transferred gold were 20% lower in April 2003 (Platts Metals Week, 2003b).

## Silver

Hecla Mining Company reported that, in the first quarter of 2003, the company produced 74,800 kg of silver at an average cash cost of \$1.67 per ounce. The Coeur d'Alene, ID-based company also produced 1,660 kg of gold, with 1,090 kg of the gold produced at an average cash cost of \$137 per ounce. Hecla's underground San Sebastian silver mine in central Mexico was the company's best performer during the first quarter with a record production of 31,400 kg of silver and nearly 374 kg of gold. The ore-grade improved to more than 998 grams-per-ton (g/t) of silver compared with 800 g/t during the first quarter of 2002. The gold grade increased to more than 10 g/t. As a byproduct metal, gold contributed significantly to San Sebastian's low average total cash cost.

The Greens Creek Mine in Alaska, in which Hecla holds a 29.73% interest in a joint venture with Kennecott Greens Creek Mining Company, produced 23,100 kg of silver for Hecla's account during the first quarter of 2003. The average total cash cost at Greens Creek decreased 13% to \$1.67 per ounce compared to the first quarter of 2002. Hecla's Lucky Friday Mine in northern Idaho produced 19,800 kg of silver during the first quarter of 2003, a 54% increase in silver production over the first quarter of 2002. The improvement was due to an increase in silver ore grade to nearly 498 g/t and to increased tonnage processed through the mill (Hecla Mining Company, 2003, p. 1-4).

On May 8, 2003, London-based Gold Fields Mineral Services Ltd. (GFMS), on behalf of the Silver Institute, published *World Silver Survey 2003*. GFMS reported that the deficit between world silver fabrication demand and world silver supply (mine production and scrap) remained very large at 2,100 metric tons (t). Industrial demand for silver increased in 2002 while world silver mine production declined; output is likely to decline further in 2003. Overall silver demand fell by about 4%,

primarily due to a 28% decline in Indian jewelry and silverware demand. Chinese Government sales were reported to have decreased to 1,590 t in 2002 from 2,120 t in 2001. Although GFMS increased its estimate of Chinese stocks of silver, it noted that Chinese internal demand increased sharply in 2002, almost eliminating the historic surplus of Chinese mine supply. After this surplus is eliminated, China will become a net consumer of silver.

## Platinum-Group Metals

General Motors Corp. (GM), has indicated that it may begin using palladium instead of platinum in its production of auto catalysts, leading to a flurry of trading activity during the week of May 29 as the price of palladium rose to a 2-month high of \$206 per ounce. It is not known when the switch by GM will be made, but it is likely that other automobile manufacturers will also switch to palladium. Such a switch would not be unusual for automobile manufacturers, many of whom switched from palladium to platinum when the price of palladium reached \$1,100 per ounce in 2001. In 2003, the price of palladium has fallen to near 6-year lows and was forecast by Johnson Matthey plc to trade between \$120 and \$190 per ounce for the remainder of the year. Demand for platinum, however, is expected to remain strong, and Johnson Matthey predicts that platinum will trade between \$590 and \$690 per ounce. The auto industry is the largest palladium consumer, using 96,600 kg of the metal in 2002, 39% lower than in 2001 (Johnson Matthey plc, 2003, p. 3-12; Metal Bulletin, 2003).

Anglo Platinum Ltd. and Aquarius Platinum Ltd. announced that they have reached an agreement to mine adjacent properties on their respective Rustenburg and Kroondal lease areas. The agreement provides for the parties to pool their assets, while retaining ownership thereof, and to share the proceeds equally. Anglo Platinum will provide access to a portion of the UG2 orebody on Rustenburg Platinum Mines lease area and Aquarius Platinum will provide access to its existing Kroondal platinum mine lease area and infrastructure. The parties intend to utilize the existing Kroondal Mine infrastructure to gain access to the Rustenburg orebody down-dip of the Kroondal Mine. Production at the Kroondal Mine will reportedly be expanded from approximately 4,400 kilograms of platinum per year (kg/yr) to approximately 8,700 kg/yr during 2006. This will be achieved by utilizing the existing Kroondal infrastructure, constructing an additional 250,000-metric-ton-per-month concentrator for completion in 2005, and establishing additional decline shaft capacity at Rustenburg. The venture will have mineable reserves and resources of 69 million tons of ore and a mine life extending to 2016 (Anglo Platinum Ltd., 2003).

Researchers in many countries have focused their efforts in recent years on methods of exploiting hydrogen's fuel benefits. In a proton-exchange-membrane (PEM) fuel cell, hydrogen gas is consumed at temperatures below 80° C in the presence of a platinum catalyst and an oxidant (typically air) at efficiencies up to 60%. Compared with hydrocarbons, hydrogen's advantages include higher energy density and, because the sole byproduct of combustion or electrochemical oxidation of hydrogen is water, no pollution. If hydrogen-based power systems are to replace current power producers, there must be a clean, practical

source of cheap hydrogen gas (H<sub>2</sub>). One potential source is the breakdown of biomass, which requires the development of special catalysts. Researchers at the University of Wisconsin, Madison, have developed a heterogeneous catalyst that produces H<sub>2</sub> at temperatures near 230° C from ethylene glycol, glycerol, and sorbitol—all industrial byproducts. Instead of relying on expensive platinum, the new catalyst is based on cheap and plentiful nickel, tin, and aluminum (Chemical & Engineering News, 2003).

Another key obstacle to using hydrogen as a fuel for transportation and other applications is the difficulty of providing safe storage of hydrogen; currently there is no convenient way to store and transport large quantities of H<sub>2</sub> for markets via commercial fueling stations. This obstacle may soon be overcome, thanks to an advance in hydrogen-storage materials by researchers in Japan. Japanese chemists for the first time have prepared an open-cage fullerene derivative with an orifice large enough to allow a hydrogen molecule to be inserted into the cage in 100% yield. The new molecule was prepared from buckminsterfullerene (C<sub>60</sub>) in three steps in 40% overall yield. When the material was exposed to H<sub>2</sub> at 800 atm and 200° C in an autoclave, 100% encapsulation was reportedly achieved within 8 hours. None of the encapsulated hydrogen escaped when a solution of the endohedral complex was monitored for more than 3 months at room temperature. However, H<sub>2</sub> was released slowly when the solution was heated above 160° C (Journal of the American Chemical Society, 2003).

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TABLE 1  
MINE PRODUCTION OF RECOVERABLE GOLD AND SILVER IN THE UNITED STATES, BY STATE<sup>1</sup>

(Kilograms)

Gold	Alaska	California	Nevada	Other States <sup>2</sup>	Total
<b>2002:</b>					
May	W	788	18,600	3,680	23,000
June	W	907	20,100	3,510	24,600
July	W	770	19,200	3,640	23,700
August	W	740	17,600	3,190	21,500
September	W	701	21,200	3,840	25,800
October	W	569	20,000	3,780	24,400
November	W	512	19,200	3,460	23,200
December	W	534	22,600	3,370	26,400
January-December <sup>p</sup>	W	9,160	231,000	45,300	286,000
<b>2003:</b>					
January	W	507	18,700	3,620	22,900
February	W	476	16,600	3,210	20,300
March	W	445	17,600 <sup>r</sup>	3,950 <sup>r</sup>	22,000 <sup>r</sup>
April	W	462	15,800 <sup>r</sup>	3,710 <sup>r</sup>	20,000 <sup>r</sup>
May	W	434	17,400	3,390	21,200
January-May	W	2,320	86,100	17,900	106,000
Silver	Arizona	Idaho	Nevada	Other States <sup>3</sup>	Total
<b>2002:</b>					
May	W	W	36,900	88,600	126,000
June	W	W	30,800	84,700	115,000
July	W	W	35,100	78,300	113,000
August	W	W	28,400	79,700	108,000
September	W	W	30,200	78,700	109,000
October	W	W	38,100	86,100	124,000
November	W	W	24,200	81,000	105,000
December	W	W	32,600	81,400	114,000
January-December <sup>p</sup>	W	W	424,000	996,000	1,420,000
<b>2003:</b>					
January	W	W	24,700	81,400	106,000
February	W	W	19,600	75,300	94,800
March	W	W	25,800	83,400 <sup>r</sup>	109,000
April	W	W	21,500	72,800	94,300
May	W	W	27,700	79,700	107,000
January-May	W	W	119,000	393,000	512,000

<sup>p</sup>Preliminary. <sup>r</sup>Revised. W Withheld to avoid disclosing company proprietary data; included with "Other States."

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

<sup>2</sup>Includes Arizona, Colorado, Idaho, Montana, New Mexico, South Carolina, South Dakota, Utah, Washington, and State indicated by symbol W.

<sup>3</sup>Includes Alaska, California, Colorado, Missouri, Montana, New Mexico, New York, South Carolina, South Dakota, Tennessee, Utah, Washington, and States indicated by symbol W.

TABLE 2  
SELECTED PRECIOUS METAL PRICES

(Dollars per troy ounce)

	Gold	Silver	Platinum	Palladium
<u>Engelhard Industries:</u>				
2002:				
Low/date	278.62 January 29	4.26 January 31	454.00 February 1	225.00 December 23
High/date	350.54 December 27	5.15 June 4 and July 15	610.00 December 17	439.00 January 3
Average	311.33	4.62	542.56	339.68
2003:				
March:				
Low/date	330.66/24	4.39/24	632.00/28	183.00/31
High/date	355.95/6	4.71/10	709.00/10	244.00/10 and 11
Average	341.78	4.55	677.05	226.38
April:				
Low/date	321.09/7	4.42/2	605.00/30	151.00/16
High/date	337.97/30	4.67/24	644.00/22	182.00/1
Average	329.51	4.54	627.19	164.76
May:				
Low/date	341.73/2	4.57/29 and 30	608.00/1, 2, and 5	155.00/1
High/date	372.68/27	4.90/14	686.00/27	198.00/27
Average	356.31	4.76	651.43	168.90
Year to date:				
Low/date	321.09 April 7	4.39 March 24	605.00 April 30	151.00 April 16
High/date	383.40 February 5	4.94 January 6 and 24	709.00 March 10	273.00 January 23
Average	349.31	4.68	654.65	214.83
<u>Handy and Harman:</u>				
2002, Average	310.13	4.62	XX	XX
2003:				
March	340.55	4.55	XX	XX
April	328.25	4.54	XX	XX
May	355.03	4.75	XX	XX
Average year to date	348.07	4.67	XX	XX
<u>London Final:<sup>1</sup></u>				
2002, Average	309.97	4.60	XX	XX
2003:				
March	340.55	4.53	XX	XX
April	328.18	4.49	XX	XX
May	355.68	4.74	XX	XX
Average year to date	348.05	4.65	XX	XX

XX Not applicable.

<sup>1</sup>Silver price reported as "London Spot/US Equiv."

Source: Platts Metals Week.

TABLE 3  
U.S. IMPORTS AND EXPORTS OF GOLD<sup>1</sup>

(Kilograms of gold content, unless otherwise specified)

Period and country	Ores and concentrates <sup>2</sup>	Doré and precipitates	Refined bullion <sup>3</sup>	Ash and residues	Total <sup>4</sup>	Waste and scrap (gross weight)	Metal powder (gross weight)	Gold compounds (gross weight)
<b>Imports for consumption:</b>								
2002	2,720	42,200	172,000	--	217,000	11,900	10,700	18,100
<b>2003:</b>								
February	117	7,160	12,300	--	19,600	1,120	479	1,680
March	30	6,430	9,160	--	15,600	955	243	8,140
<b>April:</b>								
Brazil	--	(5)	672	--	673	--	--	--
Canada	--	--	8,240	--	8,240	144	316	--
Chile	--	--	525	--	525	--	--	--
Colombia	--	4,320	518	--	4,830	85	2	--
Dominican Republic	--	--	4	--	4	349	12	--
Germany	--	--	--	--	--	--	(5)	1,200 <sup>6</sup>
Honduras	--	366	--	--	366	6	268	--
Japan	--	--	--	--	--	--	--	469 <sup>6</sup>
Mexico	--	222	1,520	--	1,740	82	--	--
Nicaragua	--	173	--	--	173	--	--	--
Panama	--	105	21	--	126	35	--	--
Peru	--	2,050	36	--	2,080	--	--	--
Other	1	57	245	--	303	98	2	--
Total	1	7,290	11,800	--	19,100	801	600	1,670
Year to date	150	26,800	44,800	--	71,800	3,880	18,000	17,200
<b>Exports:</b>								
2002	556	71,700	185,000	--	257,000	85,800	10,900	417,000
<b>2003:</b>								
February	48	7,580	13,600	--	21,200	13,000	88	55,400
March	81	3,230	15,100	--	18,400	17,900	68	48,400
<b>April:</b>								
Canada	--	31	30	--	61	2,580	--	16,600 <sup>6</sup>
Dominican Republic	17	--	--	--	17	--	--	--
France	--	--	--	--	--	--	(5)	100 <sup>6</sup>
Germany	--	--	--	--	--	154	--	--
Hong Kong	--	--	10	--	10	--	--	3,320 <sup>6</sup>
India	--	--	--	--	--	--	--	212 <sup>6</sup>
Ireland	--	--	--	--	--	--	--	1,150 <sup>6</sup>
Israel	--	--	--	--	--	--	--	3,500 <sup>6</sup>
Italy	3	--	--	--	3	--	7	--
Japan	--	(5) <sup>6</sup>	--	--	(5)	8	3	--
Mexico	--	--	296	--	296	--	--	165 <sup>6</sup>
Peru	--	--	184	--	184	--	--	--
Switzerland	--	7,370	11,600	--	19,000	--	91	--
Taiwan	--	--	--	--	--	--	2	--
United Kingdom	--	2 <sup>6</sup>	6,300	--	6,300	4,040	9	--
Other	(5) <sup>6</sup>	--	181	--	181	3	--	--
Total	20	7,400	18,600	--	26,000	6,790	112	25,100
Year to date	257	28,000	63,100	--	91,400	54,500	318	155,000

-- Zero.

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

<sup>2</sup>Includes gold content of base metal ores, concentrates, and matte imported for refining.

<sup>3</sup>Bullion also moves in both directions between U.S. markets and foreign stocks on deposit in the Federal Reserve Bank. Monetary gold excluded.

<sup>4</sup>"Waste and scrap," "Metal powder," and "Gold compounds" not included in "Total."

<sup>5</sup>Less than 1/2 unit.

<sup>6</sup>All or part of these data have been referred to the U.S. Census Bureau for verification.

Source: U.S. Census Bureau.

TABLE 4  
U.S. IMPORTS FOR CONSUMPTION OF SILVER<sup>1</sup>

(Kilograms of silver content, unless otherwise specified)

Period and country	Bullion	Doré	Ores and concentrates <sup>2</sup>	Ash and residues	Total	Other unwrought silver (gross weight)	Metal powder (gross weight)	Silver nitrate (gross weight)	Semimanufactured form <sup>3</sup> (gross weight)	Waste and scrap (gross weight)
2002	4,020,000	16,600	61,000	63,500	4,160,000	263,000	12,100	572	289,000	816,000
2003:										
February	331,000	13,700	--	5,270	350,000	28,800	2,200	14	30,800	89,400
March	211,000	18,800	350	6,830	237,000	19,600	647	--	18,300	44,200
April:										
Australia	--	--	--	3,180 <sup>4</sup>	3,180	--	--	--	--	9
Brazil	--	--	--	--	--	--	--	--	21,200	15
Canada	111,000 <sup>4</sup>	--	--	5,310 <sup>4</sup>	116,000	29,400 <sup>4</sup>	--	--	686	5,820
Chile	5,000	--	--	--	5,000	--	--	--	--	--
China	18,000	--	--	--	18,000	--	--	--	--	--
Colombia	--	494	--	1	495	--	--	--	--	--
Costa Rica	--	--	--	--	--	--	--	--	--	572
Dominican Republic	--	--	--	(5)	(5)	--	--	--	--	96
France	--	--	--	--	--	--	--	--	879	1,200
Germany	--	--	--	--	--	--	264	--	2,610 <sup>4</sup>	640
India	--	--	--	--	--	--	--	--	859	--
Israel	--	--	--	--	--	--	--	--	3 <sup>4</sup>	8,550
Italy	--	--	--	--	--	(5) <sup>4</sup>	--	--	927	15
Japan	--	--	--	--	--	15	100 <sup>4</sup>	224	536 <sup>4</sup>	152
Jordan	--	--	--	--	--	--	--	--	--	212
Kuwait	--	--	--	--	--	--	--	--	--	134,000
Malaysia	--	--	--	--	--	--	--	--	--	28,600
Mexico	148,000	19,600 <sup>4</sup>	--	--	167,000	44,300	--	--	1 <sup>4</sup>	3,420
Peru	37,700	--	--	--	37,700	--	1,400	--	--	--
Philippines	--	--	--	--	--	--	--	--	--	19,200
Poland	--	--	--	--	--	--	--	--	2,380	--
Portugal	--	--	--	--	--	--	--	--	--	995
Singapore	--	--	--	--	--	--	--	--	--	987
United Kingdom	--	--	--	1,370	1,370	--	--	--	52 <sup>4</sup>	1,030
Other	--	--	--	6	6	--	--	--	183	20
Total	319,000	20,100	--	9,860	349,000	73,800	1,760	224	30,300	206,000
Year to date	1,240,000	63,800	350	24,300	1,330,000	134,000	5,260	238	112,000	371,000

-- Zero.

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

<sup>2</sup>Includes silver content of base metal ores and concentrates.

<sup>3</sup>Containing 99.5% or more by weight of silver.

<sup>4</sup>All or part of these data have been referred to the U.S. Census Bureau for verification.

<sup>5</sup>Less than 1/2 unit.

Source: U.S. Census Bureau.

TABLE 5  
U.S. EXPORTS OF SILVER<sup>1</sup>

(Kilograms of silver content, unless otherwise specified)

Period and country	Bullion	Doré	Ores and concentrates <sup>2</sup>	Total	Other unwrought silver (gross weight)	Metal powder (gross weight)	Silver nitrate (gross weight)	Semimanufactured form <sup>3</sup> (gross weight)	Waste and scrap (gross weight)
2002	624,000	22,700	230,000	877,000	32,700	360,000	81,200	290,000	2,380,000
2003:									
February	15,200	2,480	8	17,700	2,870	37,600	3,800	28,100	156,000
March	22,400	1,150	35	23,600	1,050	28,300	8,890	37,400	224,000
April:									
Australia	--	--	--	--	--	--	2,550	--	--
Belgium	--	--	--	--	--	51	--	181	12,000
Canada	325	--	--	325	2,940	1,050	4,780	3,640	53,700
China	--	--	--	--	77 <sup>4</sup>	163	--	274	22,500
Dominican Republic	--	--	--	--	274	--	--	--	--
Finland	--	--	--	--	--	--	--	--	327
France	--	--	--	--	--	776	--	587	--
Germany	--	--	--	--	--	4,590	15	813 <sup>4</sup>	15,900
Hong Kong	--	--	--	--	--	5,640	--	482	--
Israel	--	--	--	--	--	422	--	22	--
Italy	--	--	--	--	--	--	--	85	16,900
Japan	--	--	--	--	49 <sup>4</sup>	3,590	--	3,750	25,300
Korea, Republic of	--	80 <sup>4</sup>	--	80	--	1,680	--	6,020	908
Malaysia	--	--	--	--	--	--	--	178	--
Mexico	--	--	17,300 <sup>4</sup>	17,300	56	--	242 <sup>4</sup>	32,800	--
Netherlands	--	--	--	--	--	193	--	640	--
Poland	--	--	--	--	--	--	--	165	--
Saudi Arabia	--	--	--	--	--	--	--	--	7,490
Spain	--	--	--	--	--	--	--	1,190	--
Sweden	--	--	--	--	--	--	--	--	21,100
Switzerland	--	1,510	--	1,510	--	84	--	51	--
Taiwan	--	--	--	--	--	9,980	--	821	203
Thailand	--	--	--	--	--	--	--	2,070	--
United Kingdom	19,300	--	--	19,300	33	10,100	--	873	2,070
Uruguay	--	--	--	--	--	--	--	1,820	--
Other	--	--	--	--	104	120	--	288	202
Total	19,700	1,590	17,300	38,600	3,530	38,400	7,590	56,800	179,000
Year to date	84,800	7,730	57,200	150,000	8,670	136,000	25,700	144,000	730,000

-- Zero.

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

<sup>2</sup>Includes silver content of base metal ores and concentrates.

<sup>3</sup>Semimanufactured (including silver plated with gold or platinum) forms of silver.

<sup>4</sup>All or part of these data have been referred to the U.S. Census Bureau for verification.

Source: U.S. Census Bureau.

TABLE 6  
U.S. IMPORTS FOR CONSUMPTION OF PLATINUM-GROUP METALS<sup>1</sup>

(Kilograms of metal content)

Period and country	Platinum grain and nuggets	Platinum sponge	Other unwrought platinum	Platinum, other	Platinum waste and scrap	Platinum coins	Unwrought palladium	Palladium, other	Iridium <sup>2</sup>	Unwrought osmium	Unwrought ruthenium	Rhodium <sup>3</sup>
2002	1,910	72,600	3,490	4,950	77,500	20	94,600	22,000	2,100	36	9,890	8,630
2003:												
February	125	6,020	627	746	101	--	3,970	1,760	191	--	1,240	315
March	142	4,670	773	366	3,750	--	4,930	1,930	217	5	1,480	571
April:												
Belgium	--	804	--	(4)	184	--	202	10	--	--	--	--
Brazil	--	--	--	--	2	--	--	--	--	--	--	--
Canada	2	--	--	34	1,030	--	111	--	--	--	--	--
China	--	--	--	2	--	2 <sup>5</sup>	--	--	--	4	--	(4)
Colombia	--	--	45	--	--	--	--	--	--	--	--	--
France	--	--	--	24	--	--	--	2	--	--	--	--
Germany	--	124	24	222	634	--	51	553	--	--	72	43 <sup>5</sup>
Greece	--	--	--	--	7	--	--	--	--	--	--	--
Israel	--	--	34	--	--	--	--	--	--	--	--	--
Italy	--	5	--	53	--	--	1	33	--	--	--	1
Japan	--	--	(4)	--	412	--	232 <sup>5</sup>	87 <sup>5</sup>	--	--	--	--
Jordan	--	--	--	--	7	--	--	--	--	--	--	--
Korea, Republic of	--	--	--	--	196	--	--	--	--	--	--	--
Netherlands	--	--	--	(4)	--	--	--	--	--	--	--	--
Norway	--	109	--	--	--	--	451	--	--	--	--	--
Philippines	--	--	--	1	(4)	--	--	--	--	--	--	--
Russia	--	926	119	--	--	--	2,320	724	100	--	2,000	1,130
Singapore	--	--	--	--	23	--	--	--	--	--	--	--
South Africa	52	3,520	369	40	--	--	505	386	89	--	832	340
Switzerland	6	--	2	21	--	--	65	298	--	--	--	--
United Kingdom	--	949	138	27	690	4	1,780	571	46 <sup>5</sup>	--	57 <sup>5</sup>	11 <sup>5</sup>
Total	60	6,440	731	424	3,190	6	5,720	2,660	235	4	2,960	1,520
Year to date	454	24,500	2,360	1,950	13,100	6	18,300	8,400	737	10	6,270	3,250

-- Zero.

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

<sup>2</sup>Unwrought and other forms of iridium.

<sup>3</sup>Unwrought and other forms of rhodium.

<sup>4</sup>Less than 1/2 unit.

<sup>5</sup>All or part of these data have been referred to the U.S. Census Bureau for verification.

Source: U.S. Census Bureau.

TABLE 7  
U.S. EXPORTS OF PLATINUM-GROUP METALS<sup>1</sup>

(Kilograms of metal content, unless otherwise specified)

Period and country	Palladium <sup>2</sup>	Platinum <sup>2</sup>	Platinum waste and scrap	Iridium, osmium, and ruthenium <sup>2,3</sup>	Rhodium <sup>2</sup>
2002	42,700	27,800	17,700	1,990	349
2003:					
February	1,360	1,330	1,740	83	7
March	1,940	1,910	2,450	121	6
April:					
Australia	14	(4)	--	--	(4) <sup>5</sup>
Austria	--	2	--	--	--
Belarus	4 <sup>5</sup>	--	--	--	--
Belgium	1 <sup>5</sup>	--	--	--	--
Brazil	4 <sup>5</sup>	--	--	--	--
Canada	158 <sup>5</sup>	165	196	--	(4) <sup>5</sup>
China	58 <sup>5</sup>	--	--	(4) <sup>5</sup>	7 <sup>5</sup>
Colombia	--	1	--	--	--
Denmark	1	--	--	--	--
Dominican Republic	--	1	--	--	--
El Salvador	2	--	--	--	--
Finland	6	1	--	--	--
France	19 <sup>5</sup>	6	--	--	(4) <sup>5</sup>
Germany	569 <sup>5</sup>	476	15	2	12 <sup>5</sup>
Hong Kong	18	8	--	(4)	(4) <sup>5</sup>
Iceland	(4)	--	--	--	--
India	--	--	--	--	(4) <sup>5</sup>
Ireland	2	58	--	3	(4) <sup>5</sup>
Israel	7	(4)	--	--	--
Italy	3	18	--	--	--
Japan	133 <sup>5</sup>	159	--	4	--
Korea, Republic of	16	111	--	--	--
Macao	7	1	--	--	--
Malaysia	--	1	--	--	--
Mexico	8 <sup>5</sup>	3 <sup>5</sup>	--	--	(4) <sup>5</sup>
Netherlands	71	3	--	--	--
New Zealand	13 <sup>5</sup>	--	--	--	--
Norway	6	1	--	--	--
Philippines	--	2	--	--	--
Romania	--	1	--	--	--
Saudi Arabia	4	--	--	--	--
Singapore	2	3	--	--	--
Slovenia	1	--	--	--	--
South Africa	--	332	--	--	--
Spain	16	1	--	--	--
Sweden	4	1	--	--	--
Switzerland	19	71	23	--	--
Taiwan	353 <sup>5</sup>	46	--	--	--
Thailand	3	11	--	--	(4) <sup>5</sup>
Turkey	1	--	1	--	--
United Kingdom	552 <sup>5</sup>	200	1,370	62	1 <sup>5</sup>
Other	2	1	--	--	--
Total	2,080	1,680	1,600	72	21
Year to date	7,200	6,420	7,910	333	129

-- Zero.

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

<sup>2</sup>Unwrought and other forms.

<sup>3</sup>Gross weight.

<sup>4</sup>Less than 1/2 unit.

<sup>5</sup>All or part of these data have been referred to the U.S. Census Bureau for verification.

Source: U.S. Census Bureau.