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Mineral Industry Surveys

For information, contact:
Earle B. Amey, Gold Commodity Specialist
Henry E. Hilliard, Silver and Platinum-Group Metals Commodity Specialist
U.S. Geological Survey
989 National Center
Reston, VA 20192
Telephone: (703) 648-4969 (Gold),
(703) 648-4970 (Silver and PGM)
Fax: (703) 648-7757
E-mail: eamey@usgs.gov and hhilliar@usgs.gov

Mahbood Mahdavi (Data)
Telephone: (703) 648-7778
Fax: (703) 648-7975

Shonta E. Osborne (Data)
Telephone: (703) 648-7971
Fax: (703) 648-7975

Internet: http://minerals.usgs.gov/minerals

PRECIOUS METALS IN NOVEMBER 2002

U.S. mines produced 24,000 kilograms (kg) of gold and 113,000 kg of silver in November 2002. Compared with October 2002, production of gold was down 12% in California, and production of silver was down 16% in Nevada.

Gold

Domestic.—Shutdowns of operations at five of Barrick Gold Corp.'s gold mines were completed. The mines were the McLaughlin Mine (CA), the Ruby Hill Mine (NV), the Agua de Falda Mine (Chile), El Indio Mine (Chile), and the Bousquet Mine (Canada) (Mining Journal, 2002a).

Placer Dome Inc. resumed commercial operations at its Getchell underground gold mine in Nevada. Annual gold output is expected to reach between 9,300 kg and 10,900 kg (300,000 troy ounces and 350,000 ounces) by the end of 2004. The Getchell complex consists of two underground gold mines and a processing plant that includes a pressure-oxidation facility for refractory ore. Getchell's deposits are of the Carlin type, with structurally and stratigraphically controlled sediment-hosted replacement mineralization containing micron-sized gold, generally associated with arsenical pyrite (Mining Journal, 2002c).

International.—Metals Economic Group (MEG), in Halifax, Nova Scotia, reported that worldwide mineral exploration expenditures fell for the fifth successive year. In 2002, exploration funding reached a 10-year low, having decreased by 14% in 2002 and 15% in 2001. MEG noted that eight major mining and exploration companies disappeared in 2001 as industry consolidation peaked and negatively affected 2002 exploration spending. MEG also reported a significant shift in the 2002 exploration budgets among the junior companies from grassroots exploration to more advanced projects in order to expand resources to better attract a major company as a partner (Mining Journal, 2002b).

The World Gold Council reported that world gold demand fell 7.5% to 780,000 kg (25 million ounces) in the third quarter of 2002 compared with the same quarter in 2001. The fall in gold demand was an improvement from the 14% year-on-year drop during the first 6 months of 2002. In dollar terms, worldwide gold sales rose 6% in the third quarter. Demand for gold jewelry decreased more than 4% in the third quarter to 611,000 kg (20 million ounces). U.S. gold jewelry demand, however, increased 3% in the third quarter. World retail investment demand for gold was down more than 32% in the third quarter to 83,200 kg (2.7 million ounces), while industrial demand for gold increased about 7% in the third quarter to 68,600 kg (2.2 million ounces) (American Metal Market, 2002).

The African Mining Group of South Africa (AMG) acquired the Zimbabwe gold mines owned by Independence Gold Mining Zimbabwe (Pvt.) Ltd. Proponents for local black economic empowerment viewed the takeover transaction as hostile to the Zimbabwe government's policy of indigenous ownership. Although AMG allocated a minority share of the mines to local people, this gesture disappointed the indigenous investor group (Platts Metals Week, 2002a).

Polimetall Co., a Russian mining conglomerate, acquired the right to mine the Taseyvskoye gold deposit in the Chita region of southwest Siberia. The deposit reportedly contains 44,000 kg (1.4 million ounces) of gold reserves and 104,000 kg (3.3 million ounces) of silver. Polimetall has started to work on the restoration of the underground mines and open pits, which have not been used for 10 years and have filled with water. Besides preparing the mines for operation, steps to prevent ecological damage and lead poisoning of the aquifer must be taken. The Taseyvskoye Mine operated from 1948 to 1992, primarily as an underground mine, producing 240,000 kg (7.7 million ounces) of gold. The open pit was developed between 1983 and 1993 (Platts Metals Week, 2002d).

The London Bullion Market Association's (LBMA) gold clearing statistics rose in October. Gold transfers increased 6.5% in comparison with those of September, reaching 544,000 kg (17.5 million ounces). The number of gold transfers fell to 658 per day from 728 per day. In comparison with those of October 2001, kilograms of gold transferred were 5.5% lower than in October 2002 (Platts Metals Week, 2002c).

Thunderbox Mine in Western Australia poured its first gold bar. The mine, which is a joint venture, 60% owned by LionOre Mining International Ltd. and 40% owned by Dalrymple Resources NL, is expected to produce 6,800 kg (220,000 ounces) of gold in 2003 (Mining Journal, 2002e).

Silver

Pan American Silver Corp., Vancouver, BC, announced that it has entered into two agreements with Volcan Campania Minera, a major Peruvian mining company, regarding two silver-bearing stockpiles located adjacent to Volcan's Cerro de Pasco operation in central Peru, about 36 kilometers from Pan American's Huron Mine. The first agreement grants Pan American the right to acquire a 60 percent interest in the stockpiles by spending $2 million on the project over a 3-year period. In the 12 months following this period, Pan American can increase its interest to 100 percent by paying Volcan $3 million. The first phase of Pan American's work will reportedly be a detailed definition drilling program to confirm silver resources estimated by Volcan to be 26 million metric tons of stockpiles grading 227 grams per ton of silver (a contained silver source of more than 5,600 metric tons (t) of silver). The second agreement grants Pan American the right to mine and sell 600,000 t of the richest silver stockpiles to a nearby smelter, which will use them as flux in its smelting operation. Stockpile sales are expected to average 46,000 metric tons per year resulting in annual silver production of about 1,600 t at an estimated total production cost of less than $2 per ounce ($64 per kilogram) (Pan American Silver Corp., 2002).

Platinum-Group Metals

***Update.*—**On Monday, January 27, 2003, the Defense National Stockpile Center (DNSC) will commence its Fiscal Year 2003 iridium sales program. Under the Basic Ordering Agreement (BOA), prospective customers must pre-register to participate in the iridium sales and be considered for subsequent contract awards. Before customers are qualified to engage in the quoting process, they must submit a completed BOA package to the iridium contract specialist, who will evaluate the agreement package and render an approval decision in writing. The iridium listed for sale is in the form of ≥99.95% sponge, <99.9% sponge, and <99.9% powder. The material was acquired from several suppliers/producers during 1951-92. The quality of the material was taken from certificates of analysis from Government contract laboratories or original certificates from the suppliers/producers; if no certificate was available, the appropriate DNSC Purchase Specification was used.

Material available for sale will be posted every Monday on the DNSC web site (https://www.dnsc.dla.mil) by 11:30 a.m. EST. The cutoff time for receipt of quotes is the following Thursday at 1:30 p.m. EST, on the same day of business. Accordingly, all quotes must remain valid until Thursday at 3:30 p.m., EST. Any questions regarding the DNSC iridium sales program should be referred to the following contracting personnel:

Donna Black, primary contact, (703) 767-5488
Richard Talbot, secondary contact, (703) 767-5497.

Government records indicate that the material conforms to the data provided; however, no warranty or guarantee is made that the material so conforms or that it will be suitable for any particular purpose (Defense Logistics Agency, 2003; Donna Black, contract specialist, Defense Logistics Agency, written commun., January 6, 2003).

The divergence of platinum and palladium prices became increasingly apparent in November 2002 when, on November 25, palladium spot price slumped to $261 per ounce on the day's London fix; platinum prices were close to $600 per ounce. Palladium prices were quiet in October, trading sluggishly between $310 and $320 for most of the month. Comments by Norilsk Nickle that it would not stockpile palladium had a negative effect on the market, stimulating dealer sales that lowered the spot price to $312 on November 7. Between November 7 and 11, support for a price of around $310 was broken and prices fell sharply, losing $20 on the London fixing. After weakening further to $284 on November 13, physical demand for palladium pushed the price up to $290 on November 15 as platinum rose above $600 per ounce. Norilsk Nickel's proposal to acquire a controlling interest in the Stillwater Mining Company was announced on November 21 and, after digesting details of the sale, market analysts came to view the proposed acquisition as bearish for palladium. Selling in Europe and the Far East pushed the spot market price sharply lower with palladium settling at $261 on the November 25 London fix (Johnson Matthey plc, 2002; Mining Journal, 2002d; Platts Metals Week, 2002b).

Chemists at the University of Texas (Arlington) and the University of Messina (Italy) reported the development of a ruthenium-based catalyst that could lead to systems that mimic photosynthesis. Designing a system for photosynthesis that mimics plants' ability to absorb light and channel that energy into storage for chemical reactions has been a long-standing objective of chemical research. The most challenging part of the photosynthetic equation is the storage component, which requires a catalyst that can hold onto light-generated electrons and use them effectively for synthesis. An important parameter for the catalyst that determines the sophistication of its chemistry is the electron storage capacity. Although many of the photocatalysts being studied are capable of one- or two-electron processes, the University of Texas/University of Messina researchers reported that upon visible-light irradiation, the ruthenium catalyst can reversibly store up to 4 electrons in localized orbitals. The catalyst is a ruthenium-phenanthroline dimer with a fully conjugated heteronuclear bridge (Today's Chemist, 2002).

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

(Kilograms)

Gold	Alaska	California	Nevada	Other States 2/	Total
2001:					
November	W	793	20,800	4,810	26,400
December	W	871	24,100	4,820	29,800
January-December	9,190	13,800	253,000	58,800	335,000
2002:					
January	W	954	16,400	4,270	21,600
February	W	797	16,600	3,990	21,400
March	W	1,000	18,600	4,430	24,000
April	W	893	20,800	4,150	25,900
May	W	788	18,600	3,680	23,000
June	W	907	19,600	3,510	24,000
July	W	770	18,900	3,640 r/	23,300 r/
August	W	656	17,600 r/	3,190 r/	21,400 r/
September	W	620	20,700	3,840 r/	25,100 r/
October	W	485	20,000 r/	3,780 r/	24,300 r/
November	W	427	19,900	3,710	24,000
January-November	W	8,300	208,000	42,200	258,000

Silver	Arizona	Idaho	Nevada	Other States 3/	Total
2001:					
October	W	W	36,500	79,200	116,000
November	W	W	45,200	74,400	120,000
December	W	W	54,400	89,100	144,000
January-December	W	40,600	555,000	1,010,000	1,600,000
2002:					
January	W	W	38,900	85,500	124,000
February	W	W	48,800	78,200	127,000
March	W	W	49,300	89,600	139,000
April	W	W	30,800	83,700	115,000
May	W	W	36,900	88,600	126,000
June	W	W	30,300	84,700	115,000
July	W	W	34,800	78,300 r/	113,000 r/
August	W	W	28,400 r/	79,700 r/	108,000 r/
September	W	W	29,800	78,700 r/	108,000 r/
October	W	W	38,100 r/	85,700 r/	124,000 r/
November	W	W	31,900	81,300	113,000
January-November	W	W	398,000	914,000	1,310,000

r/ Revised. W Withheld to avoid disclosing company proprietary data; included with "Other States."

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

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

3/ 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
Engelhard Industries:				
2001:				
Low/date	257.04 April 2	4.05 November 26	419.00 November 7	319.00 November 13
High/date	294.40 September 17	4.87 January 30	645.00 January 10 and 15	1,100.00 January 26
Average	272.22	4.39	533.31	610.61
2002:				
September:				
Low/date	314.18/4	4.50/4	542.00/4	318.00/27
High/date	327.50/24	4.69/24	577.00/24	338.00/13 and 16
Average	320.69	4.60	558.75	330.50
October:				
Low/date	311.93/17	4.32/10	559.00/7	311.00/24
High/date	323.40/2	4.53/30 and 31	596.00/29	325.00/9 and 10
Average	317.74	4.42	583.00	319.09
November:				
Low/date	318.49/6	4.44/27	582.00/12	265.00/25
High/date	325.20/13	4.59/7, 11, 12, 13, and 15	601.00/15 and 18	317.00/5
Average	320.34	4.54	590.26	290.32
Year to date:				
Low/date	278.62 January 29	4.26 January 31	454.00 February 1	265.00 November 25
High/date	330.66 June 4	5.15 June 4 and July 15	601.00 November 15 and 18	439.00 January 3
Average	309.21	4.62	537.45	348.37
Handy and Harman:				
2001, Average	271.06	4.39	XX	XX
2002:				
September	319.49	4.59	XX	XX
October	316.56	4.40	XX	XX
November	319.14	4.54	XX	XX
Average year to date	308.04	4.62	XX	XX
London Final: 1/				
2001, Average	270.99	4.37	XX	XX
2002:				
September	319.14	4.55	XX	XX
October	316.56	4.40	XX	XX
November	319.07	4.51	XX	XX
Average year to date	307.97	4.60	XX	XX

XX Not applicable.

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

Source: Platts Metals Week.

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

(Kilograms of gold content, unless otherwise specified)

Period and country	Ores and concentrates 2/	Doré and precipitates	Refined bullion 3/	Ash and residues	Total 4/	Waste and scrap (gross weight)	Metal powder (gross weight)	Gold compounds (gross weight)
Imports for consumption:								
2001	1,260	31,100	161,000	193	194,000	26,400	9,450	1,960
2002:								
August	281	2,730	16,100	--	19,100	769	1,190	3,670
September	303	4,760	11,600	--	16,700	1,310	432	993
October:								
Aruba	--	--	172	--	172	--	--	--
Brazil	--	--	2,150	--	2,150	--	--	--
Canada	729 5/	5	11,700	--	12,500	142	9	--
Chile	--	--	400	--	400	--	--	--
Colombia	--	2,970	172	--	3,140	147	--	--
Costa Rica	--	--	--	--	--	119	--	--
Dominican Republic	--	--	11	--	11	541	8	--
Germany	--	144	(6/)	--	144	--	--	1
Honduras	--	421	--	--	421	--	363	--
Japan	--	--	--	--	--	--	--	945 5/
Mexico	--	70	319	--	389	191	--	--
Nicaragua	--	121	--	--	121	--	--	--
Peru	--	1,630	--	--	1,630	--	--	--
Other	--	44	241	--	285	57	(6/) 5/	--
Total	729	5,410	15,200	--	21,400	1,200	380	946
Year to date	2,120	29,200	149,000	--	180,000	9,880	10,000	14,500
Exports:								
2001	361	93,900	395,000	--	489,000	40,100	11,600	492,000
2002:								
August	44	6,580	15,500	--	22,100	9,600	155	30,700
September	11	5,060	18,300	--	23,300	10,100	155	41,400
October:								
Armenia	--	--	45	--	45	--	21	--
Bolivia	--	--	106	--	106	--	--	--
Cambodia	--	--	--	--	--	--	--	1,690 5/
Canada	--	--	56	--	56	4,040	--	22,700 5/
China	--	--	--	--	--	--	--	545 5/
Dominican Republic	28	--	--	--	28	--	5	1,670 5/
Germany	--	--	--	--	--	36	(6/)	2,150 5/
Guatemala	--	--	--	--	--	146	--	--
Hong Kong	--	--	4	--	4	--	--	1,750 5/
Israel	--	(6/)	--	--	(6/)	--	--	7,420 5/
Korea, Republic of	--	--	--	--	--	--	2	--
Mexico	--	--	1,040	--	1,040	--	--	--
Netherlands	--	--	--	--	--	--	--	2,830 5/
Peru	--	--	243	--	243	--	64	--
Switzerland	--	5,930	4,050	--	9,980	--	4	--
Thailand	--	--	--	--	--	--	--	481 5/
United Kingdom	--	--	4,560	--	4,560	12,400	5	4,730 5/
Other	--	3	13	--	16	63	(6/)	--
Total	28	5,930	10,100	--	16,100	16,600	101	45,900
Year to date	415	54,900	143,000	--	198,000	67,800	10,300	350,000

-- Zero.

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

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

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

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

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

6/ Less than 1/2 unit.

Source: U.S. Census Bureau.

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

(Kilograms of silver content, unless otherwise specified)

Period and country	Bullion	Doré	Ores and concentrates 2/	Ash and residues	Total	Other unwrought silver (gross weight)	Metal powder (gross weight)	Silver nitrate (gross weight)	Semimanu-factured form 3/ (gross weight)	Waste and scrap (gross weight)
2001	2,940,000	151,000	7,550	38,000	3,130,000	249,000	24,200	26,000	153,000	1,110,000
2002:										
August	311,000	698	435	6,760	319,000	45,800	1,150	--	29,800	55,100
September	364,000	1,130	--	3,980	369,000	34,800	1,470	--	38,600	207,000
October:										
Australia	--	--	--	352	352	--	--	--	--	151
Brazil	--	--	--	--	--	--	--	--	19,100	15
Canada	103,000 4/	--	375 4/	1,440	105,000	4,230	--	--	1,200 4/	48,200
Chile	1,000	--	--	--	1,000	--	--	--	--	1
Costa Rica	--	--	--	--	--	--	--	--	--	9,410
Dominican Republic	--	--	--	2	2	--	--	--	--	198
France	243	--	--	--	243	1,490	70	--	--	1
Germany	--	--	--	(5/)	(5/)	--	320	--	1,200 4/	17,600
India	--	--	--	--	--	--	--	--	1,370	--
Italy	6 4/	--	--	--	6	(5/) 4/	--	--	753 4/	--
Japan	--	--	--	--	--	--	781 4/	40 4/	958 4/	--
Jordan	--	--	--	--	--	--	--	--	--	435
Korea, Republic of	--	--	--	--	--	--	27	--	437	--
Mexico	188,000	4,090 4/	--	1,430	193,000	28,900	--	--	(5/) 4/	4,450
Panama	67	--	--	--	67	--	--	--	--	41
Peru	21,100	--	--	--	21,100	--	--	--	--	--
Philippines	--	--	--	--	--	--	--	--	--	3,940
Poland	--	--	--	--	--	--	--	--	1,140	--
Taiwan	--	--	--	--	--	--	50	--	401	--
United Kingdom	--	--	--	1,710	1,710	--	--	--	48	1,430
Other	--	--	--	--	--	--	40	--	15 4/	47
Total	313,000	4,090	375	4,940	323,000	34,600	1,290	40	26,700	85,900
Year to date	3,360,000	8,360	3,720	54,300	3,430,000	221,000	8,890	572	238,000	714,000

-- Zero.

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

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

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

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

5/ Less than 1/2 unit.

Source: U.S. Census Bureau.

TABLE 5
U.S. EXPORTS OF SILVER 1/

(Kilograms of silver content, unless otherwise specified)

Period and country	Bullion	Doré	Ores and concentrates 2/	Total	Other unwrought silver (gross weight)	Metal powder (gross weight)	Silver nitrate (gross weight)	Semimanu-factured form 3/ (gross weight)	Waste and scrap (gross weight)
2001	707,000	18,200	239,000	963,000	48,800	187,000	143,000	203,000	1,810,000
2002:									
August	110,000	1,720	120	111,000	2,670	39,100	10,800	23,600	192,000
September	27,100	1,460	39,700	68,200	3,180	56,900	5,870	21,600	161,000
October:									
Australia	--	--	--	--	--	--	--	310	1
Belgium	--	--	--	--	--	57	--	277	13,500
Canada	777		--	777	1,870	525	4,410	2,920	33,500
China	--	--	--	--	--	--	--	--	8,250
Dominican Republic	--	--	--	--	81	--	--	399	--
France	--	--	--	--	--	1,100	--	656 4/	--
Germany	--	--	--	--	35	4,400	--	878	5,320
Hong Kong	--	--	--	--	--	2,780	--	980	--
India	--	--	--	--	--	--	--	22	616
Italy	--	--	--	--	--	5,120	--	181	13,400
Japan	--	--	--	--	45 4/	2,450	--	2,640	24,400
Korea, Republic of	--	--	--	--	--	2,200	72	2,720	--
Lebanon	--	--	--	--	--	109	--	--	--
Mexico	--	--	19,900	19,900	--	984	244	1,510	984
Netherlands	--	--	--	--	--	89	--	78	3
New Zealand	--	--	--	--	--	27	--	182	--
Niger	--	--	--	--	--	87	--	--	--
Saudi Arabia	--	--	--	--	--	--	--	--	4,090
Singapore	--	--	--	--	--	135	--	493	--
Spain	--	--	--	--	--	--	--	1,790	--
Sweden	--	--	--	--	--	--	--	--	23,200
Switzerland	--	1,300	--	1,300	--	--	--	59	--
Taiwan	--	--	--	--	27	8,880	--	360	--
United Kingdom	14,300	--	--	14,300	39	1,360	--	647 4/	4,850
Other	--	--	--	--	93 4/	--	--	159 4/	--
Total	15,100	1,300	19,900	36,300	2,190	30,300	4,720	17,300	132,000
Year to date	957,000	17,300	191,000	806,000	30,800	261,000	73,600	239,000	1,900,000

-- Zero.

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

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

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

4/ 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 1/

(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 2/	Unwrought osmium	Unwrought ruthenium	Rhodium 3/
2001	2,480	68,700	3,660	5,330	3,960	53	146,000	13,600	3,110	77	8,170	12,400
2002:												
August	237	7,310	189	329	464	--	4,070	1,400	200	--	1,040	617
September	180	6,440	283	774	1,050	--	3,810	2,840	160	--	560	549
October:												
Argentina	--	--	--	--	19	--	--	--	--	--	--	--
Australia	--	--	--	(4/)	--	--	--	--	--	--	--	--
Austria	--	--	--	(4/)	--	--	--	--	--	--	--	--
Belgium	--	438	--	--	--	--	489	--	--	--	--	130 5/
Brazil	--	--	--	--	17	--	--	--	--	--	--	--
Canada	1	--	(4/)	53	27	--	69	--	--	--	--	--
Chile	--	--	--	--	7	--	--	20	--	--	--	--
China	--	--	--	--	--	--	20	--	--	3	--	--
Colombia	--	--	45	--	1,370	--	--	--	--	--	--	--
Costa Rica	--	--	--	--	1	--	--	--	--	--	--	--
Ecuador	--	--	--	--	--	--	--	--	7 5/	--	--	--
Finland	--	--	--	--	--	--	--	1	--	--	--	(4/)
France	--	--	--	3	--	--	(4/) 5/	5	--	--	--	--
Germany	48	412	50	180	112	--	197	4,380	20 5/	--	61	32
Greece	--	--	--	--	--	--	--	--	--	--	--	--
Israel	--	--	49	--	--	--	--	--	--	--	--	--
Italy	--	37	(4/)	--	--	--	--	17	--	--	--	--
Japan	--	--	--	4 5/	1	--	198	39 5/	--	--	--	--
Korea, Republic of	--	--	138	--	13	--	--	--	--	--	--	28
Mexico	--	--	--	--	251	--	--	--	--	--	--	--
Norway	--	143	--	--	--	--	556	--	--	--	--	--
Russia	--	279	--	--	--	--	5,030	2,070	--	--	--	168
South Africa	169	5,200	--	27	--	--	1,820	12	60	30	614	614
Switzerland	4	186	3 5/	11	--	--	266	41	--	--	--	--
Taiwan	--	--	--	--	2	--	--	--	--	--	--	--
United Kingdom	(4/) 5/	1,680	42	56	51	--	2,120	192	52	--	--	134
Total	223	8,380	328	336	1,870	--	10,800	6,780	139	33	675	1,110
Year to date	1,520	63,400	2,600	4,320	75,600	15	72,800	16,300	1,950	36	8,780	6,950

-- Zero.

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

2/ Unwrought and other forms of iridium.

3/ Unwrought and other forms of rhodium.

4/ Less than 1/2 unit.

5/ 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 1/

(Kilograms of metal content, unless otherwise specified)

Period and country	Palladium 2/	Platinum 2/	Platinum waste and scrap	Iridium, osmium, and ruthenium 2/ 3/	Rhodium 2/
2001	37,000	29,300	12,900	1,370	982
2002:					
August	1,450	2,460	1,700	151	60
September	1,720	3,620	3,170	155	55
October:					
Australia	14	634	--	--	--
Austria	6 4/	4	--	--	--
Belgium	20	1	--	--	--
Bermuda	--	1	--	--	--
Brazil	14	1	--	--	--
Canada	172	115	204	--	--
China	44 4/	36	--	--	--
Colombia	3	--	(5/)	--	--
Denmark	5 4/	1	--	--	--
Dominican Republic	1	2	--	--	--
Finland	1	1	--	--	--
France	33	116 4/	--	--	--
Germany	351 4/	646 4/	1,060	6	--
Hong Kong	9 4/	14	--	--	(5/) 4/
Iceland	--	(5/)	--	--	--
India	--	--	--	--	(5/) 4/
Ireland	1	8	--	140	--
Israel	22	--	--	1 4/	--
Italy	14 4/	5 4/	1	--	--
Japan	456 4/	163 4/	--	(5/)	(5/) 4/
Korea, Republic of	2	6	--	1	--
Lebanon	--	--	--	--	(5/) 4/
Malaysia	--	19 4/	--	--	--
Mexico	10 4/	15 4/	--	3 4/	(5/) 4/
Netherlands	17	41	2	--	--
New Zealand	6 4/	--	--	--	--
Norway	6	10 4/	--	--	--
Philippines	4	13 4/	--	--	--
Romania	--	3 4/	--	--	--
Singapore	5	4 4/	--	--	(5/) 4/
Slovakia	13	--	--	--	--
Slovenia	1	--	--	--	--
Spain	12	2	--	--	--
Sweden	--	(5/)	--	--	--
Switzerland	66 4/	4	--	--	--
Taiwan	795 4/	1	--	--	--
Thailand	3	1	--	--	--
Turkey	--	3 4/	--	--	(5/) 4/
United Arab Emirates	--	--	--	--	(5/) 4/
United Kingdom	157 4/	256	1,580	188	(5/) 4/
Total	2,260	2,120	2,850	338	1
Year to date	37,700	24,500	14,200	1,730	291

-- Zero.

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

2/ Unwrought and other forms.

3/ Gross weight.

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

5/ Less than 1/2 unit.

Source: U.S. Census Bureau.