

THE MINERAL INDUSTRY OF

PERU

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In 1996, Peru, with a population of more than 24 million, had a gross domestic product (GDP) of about \$50 billion¹ (Sociedad Nacional de Minería y Petróleo, 1996, p. 15). Minerals and related industries were 7.7% of Peru's 1996 GDP. Mining export revenues, including petroleum, represented about 52% of Peru's total export earnings. The Peruvian GDP experienced a 2.8% growth during 1996, considerably lower than the 6.9% growth in 1995. The inflation rate for the year was running at an average of 11.2%, slightly higher than the 10.3% for 1995.

After 6 years of complex negotiations between the Peruvian Government and international banks, Peru appears to be close to reaching a final agreement to restructure its foreign debt of \$10.5 billion (Soldi, 1997). Peru's foreign debt amounted to \$27.4 billion and its reported net international reserves were about \$8.5 billion by yearend 1996.

Since 1990, a radical change in the Peruvian economy has taken place. Government control policies have been replaced by a modern and dynamic economic model, which includes the liberalization of foreign exchange transactions, and allows that price and investment decisions be made by the open market forces. Important components of the changes made in Peru are the privatization of the state-owned enterprises and the modernization of the Peruvian Government. Therefore, the State will no longer be a producer of minerals, goods, and services. The State will be concentrating its efforts on important tasks such as security, judicial reform, improvement of health and housing programs and services, and enhancement of educational opportunities for all citizens (Assereto, 1997, p. 2).

After the Peruvian Government succeeded in controlling terrorism and stabilizing the country's economy, foreign investors viewed such efforts as a distinct sign of strength, making Peru an attractive open-market economy in Latin America. The country slashed subsidies and tariffs, freed foreign exchange and interest rates, liberalized international investment rules, and embarked on a sweeping privatization process. At the end of 1996, the National Commission for Foreign Investment and Technology, reported a total of \$6.4 billion of new investments, of which mining received 56%, petroleum 35%, and the other sectors of the economy 9% (Sociedad Nacional de Minería y Petróleo, 1996, p. 23).

According to the Sociedad Nacional de Minería y Petróleo (SNMP) and the Private Investment Promotion Committee

(COPRI), the Peruvian privatization program began on July 19, 1991, privatizing about 200 state-owned corporations and netting more than \$8 billion, with committed new investments of about \$12.2 billion. The expected future investments are: Shell/Mobil, \$2.8 billion (Camisea oil/gas project) and Cyprus, \$485 million (Cerro Verde copper mine expansion) of the United States; Inmet/Rio Algom, \$2.5 billion (Antamina zinc project) and Cambior Inc., \$771 million (La Granja copper/lead/zinc project) of Canada; and others, \$5.7 billion (various minerals), mainly from investors of Australia, Canada, Europe, Japan, South Africa, and the United States (Assereto, 1997, p. 4). In 1996, investment commitments in mining projects resulting from the Government's privatization process amounted to almost \$1 billion with a further \$4.5 billion of expected investments to bring on-stream several large new proposed mine projects such as Antamina, La Granja, and Quellevco for base metals and Pierina for gold.

The dramatic changes in Government policies and the rebounding of Peru's economy resulted in a boom in foreign investment, attracting international corporations that were looking for business opportunities, and a number of new mining projects are now being developed. During 1996, total investment in mining prospecting and exploration was \$300 million and, in mine development and expansion, it amounted to \$1.3 billion.

The privatization process continued to be managed by COPRI, and responsibility for specific privatization was vested in special committees, Comités de Privatización, whose members were selected from the ranks of leading professionals and officials, mainly from the private sector.

According to T.C. Wexler, et al, the Supreme Decree No. 014-92-EM, as the single revised text of the General Mining Law of June 2, 1992, provides guaranteed protections to mining ventures and contracts under the Peruvian Civil Code; therefore, they are immune from unilateral changes by any governmental authority, in Peru, without an appropriate legal or administrative remedy (Thomas, 1996).

Legal procedures to obtain mining rights were made easier by the enactment of complementary legislation, Supreme Decree No. 018 of July 9, 1992. The Government no longer had exclusive control over exploration, mining, smelting, and refining of metals and fuel minerals. Individuals and private companies were allowed to hold mining permits in Peru. The Peruvian mining laws are nondiscriminatory. There is no distinction, in the legal framework for investment and taxation, in terms of application to domestic and foreign investors, or corporations and consortias formed in Peru or abroad. There

¹Where necessary, values have been converted from Peruvian new soles (S/) to U.S. dollars at the rate of S/.2.45=US\$1.00.

are no restrictions in the remittance of dividends, depreciation, and royalties abroad. Contracts can be signed between investors and the Government guarantees stability of legal commitments and taxes. Peru is a signatory of the Multilateral Investment Guarantee Agency (MIGA), the international MIGA agreement and of many bilateral agreements such as the Overseas Private Investment Corporation (Assereto, 1997, p. 8).

The state-owned *Petróleos del Perú S.A.* (Petroperu) managed energy-related activities for the Government. All mineral resources, including geothermal resources, belonged to the State. The Government granted concessions for use by the State, private companies, and individuals. The administration and management of all mining activities rested in the executive branch.

The General Directorate of Environmental Affairs (DGAA) of the Ministry of Energy and Mines has the responsibility to address environmental problems resulting from energy and mining activities and is mandated to implement the current environmental code and regulations. Since 1995, the National Council for Environment (Consejo Nacional del Ambiente) made progress in data base information gathering, which was reported by energy and mining firms under the Preliminary Environmental Assessment, the Environmental Impact Assessment, and the Environmental Adjustment and Management Program. However, concrete follow-up activities would still need to be undertaken to ensure the DGAA's strengthening and restructuring in a manner that would enhance its efficiency in carrying out environmental planning, intersectoral coordination, and environmental management.

Shell and Mobil Corp., in the about \$3 billion Camisea natural-gas project in Cusco, indicated that they want to take better care of the environment. Oil companies are under pressure because they are operating increasingly in the Amazon rain forest, one of the world's most sensitive environments (The Wall Street Journal, 1997, p. A1).

In 1996, according to the statistics reported by the SNMP and the *Anuario de la Minería del Perú*, published by the Ministry of Energy and Mines, Peruvian metals and minerals production increased substantially compared with that of 1995 (Sociedad Nacional de Minería y Petróleo, 1996, 176 p; Ministerio de Energía y Minas, 1996, 88 p). (See table 1.)

While the Latin American region was experiencing a dramatic economic upsurge as it neared the turn of the century, Peru, as a member of the Andean Common Market (ANCOM-Bolivia, Colombia, Ecuador, Peru, and Venezuela), sold about 8% of its exports to the other ANCOM members and about 5% to the other countries in Latin America.

During 1996, the country's mining production, valued at \$3.1 billion, increased by about 10.7% compared with that of 1995. In 1996, mining exports were \$2.8 billion, or 47% of total exports. Peru's export earnings, including petroleum, amounted to \$3.1 billion, or 52% of its total exports of \$5.9 billion. Imports increased by 3% to \$7.9 billion, creating a deficit of about \$2 billion. Peru imported crude oil valued at \$634 million, which created a trade deficit of \$367 million for the energy sector (Sociedad Nacional de Minería y Petróleo, 1996, p. 171).

Peru's largest state-owned mining company is *Empresa Minera del Centro del Perú S.A.* (Centromin). Centromin will auction rights of its seven polymetallic-mines and La Oroya metallurgical complex as part of its piecemeal privatization program during 1997-98 (Reuters Limited, unpub. data accessed July 2, 1997, on the World Wide Web at mining international URL <http://my.yahoo.com/news/industrial/mining.html>). Southern Peru Copper Corp. (SPCC), also a large mining company, is privately owned. Private firms, mostly controlled by local interests, dominated the medium- and small-mining operations. More than 80 foreign mining companies have been established in Peru. During the next decade, they are planning to invest about \$11 billion in such ways as: 18 mining projects in the feasibility stage, \$7 billion; 26 expansion projects, \$2 billion; 197 exploration prospects, \$900 million; and several projects in the construction stage, \$400 million (Assereto, 1997, p. 15).

The new hydrocarbon law eliminated Petroperu's exclusive rights in the industry, such as control over secondary recovery of crude oil, refining, and imports and subsequent resale of petroleum and byproducts. The law created more favorable oil and gas exploration and production contract terms for investors, which resulted in an increased number of domestic and foreign companies expressing interest in participating in exploration contracts with Petroperu. (See table 2.)

In 1996, Peru's copper output increased to 484,231 metric tons (t) of copper from its mine operations, or up about 18.2% compared with that of 1995, with a value of \$1.05 billion.

SPCC remained the largest copper producer in the country with an output of 306,382 t of copper from its mine operations at the Toquepala and Quajone open pits, which included 42,289 t of copper recovered from the newly constructed SX/EW plant at Toquepala; the output was 23.5% higher than that of 1995 (248,002 t).

Tintaya Mine, Peru's second largest copper producer, has produced 59,072 t of copper, which represented a 9.3% decrease with respect to the 1995 output (65,153 t). This decrease was mainly caused by the acquisition process, restructuring, and modernization of Magma Copper Co. by BHP Tintaya S.A.

Sociedad Minera Cerro Verde S.A., owned by Cyprus-Amax Minerals Co., produced 45,882 t of copper, which was 59% more than that of 1995. This represents Cerro Verde's second consecutive increase in output following the completion of its mine expansion and mill recovery improvement programs.

Centromin produced 39,376 t of copper from its seven base metal mines, while its La Oroya complex produced 65,795 t of refined copper, or 8.9% more than that achieved in 1995. Other copper producers were *Cía Minera Pativilca* (8,391 t) and *Cía Minera Condestable S.A.* (5,118 t). An additional 32,178 t came from medium- and small-sized mines in the country.

In 1996, Peru's gold production increased by 12.2% from that of 1995, amounting to 64.8 t; the country exported 46 t of gold valued at \$579.3 million. Newmont's Yanacocha Mine remained the largest gold producer in the country, having produced 28.4 t of gold, a 63.2% increase over the output of 1995, and representing 44% of Peru's gold production in 1996.

Gold recovered as a byproduct from the concentrates of the nation's polymetallic mines amounted to 4 t. Other private gold producers in 1996 were Minera Aurífera Retamas, 3.9 t; Consorcio Minero Horizonte, 2.1 t; and Cía. Minera Poderosa S.A., 2 t. Cía. de Minas Orcopampa S.A., Buenaventura's subsidiary, produced 1.6 t of gold as a byproduct of its base metal concentrates. BHP produced 915 kilograms of byproduct gold from its Tintaya copper mine. Medium and small mines reported 6.6 t, and an unknown number of "garimpos" (informal individual miners) accounted for more than one-third, or 22.5 t, of gold produced in the country.

The southeastern Andes have well-known gold placers on the Inambari River and its tributaries. Placer gold production was concentrated in the Inca and Mariátegui Regions, although gold was recovered from placers in rivers and streams throughout the jungle.

In 1996, Shougang Hierro Peru S.A., subsidiary of China's Shougang Corp., produced 2.9 million metric tons (Mt) of iron ore, 25% less than that of 1995's output. The company has announced a \$12.6 million investment to improve iron pellet production. A further \$137 million will be invested during 1998-99 for the construction of a new pellet plant and a 300-megawatt (MW) powerplant at the port of San Nicolás in Acari (Soldi, 1997, p. 2).

In February 1996, a consortium led by Acerco S.A. (Acerco) acquired 96% of the state-owned steel plant of Siderperu. Acerco is owned by G.S. Industries Inc. of the United States, Stanton Funding Co. of Canada, and Wiese Inversiones Financieras S.A. of Peru. Acerco paid \$20.2 million in cash, with \$142.7 million to be paid over a period of 8 years, and an additional \$30 million investment commitment to upgrade the steelworks.

In 1996, Peru produced 248,787 t of lead and 760,563 t of zinc. Lead production increased by 4.7% and zinc increased by 10% compared with output in 1995.

Centromin produced 92,675 t of refined lead and 297,419 t of zinc metal and continued as the leading lead-zinc producer in the country.

In 1996, Cía. Mra. San Ignacio de Morococha S.A., remained Peru's largest private zinc producer with 69,024 t. Cía. Minera Milpo S.A., the largest private lead producer in Peru, produced 21,631 t of lead and 50,376 t of zinc outputs. Milpo was 73.8% owned by local shareholders and 26.2% by foreign investors. Cía. Minera Santa Luisa S.A., a subsidiary of Mitsui Mining Co. of Japan, produced about 37,738 t of zinc and 19,142 t of lead from its Huanzalá Mine. Cía. Minera Raura S.A. produced about 46,512 t of zinc and 8,072 t of lead. The Glencor Group's Perubar S.A., produced 40,980 t of zinc. The Izcaycruz zinc mine, owned by the same Group, produced 18,502 t of zinc for its first year of operation.

In 1996, Asarco Corp. transferred its subsidiary, Corporación Minera Nor Perú, to Panamerican Silver of Canada. The company produced 19,442 t of zinc, 5,649 t of lead, and 90 t of silver from its Quiruvilca Mine in northern Peru.

Silver production increased about 3.3% to 1,970 t in 1996, making Peru the world's third largest producer, after Mexico and the United States. The medium-sized companies accounted

for 63% of total output; large mining companies contributed 33%; and small companies, the remaining 4%.

In 1996, Centromin led silver producers in the nation's total output, with 457 t. Buenaventura and its subsidiary, Orcopampa, dominated the medium-sized silver-mining sector with 209 t.

Minsur S.A., continued as Peru's only tin producer in 1996. Production from its San Rafael Mine in Mariátegui Region was 27,000 t of tin, a 21.5% increase from that of 1995. Thus, Peru was the second largest tin producer in Latin America after Brazil. Tin concentrates were exported to Brazil and Thailand.

Two private companies in Peru were mining tungsten at the Pasto Bueno Mine in Ancash and at Palca XI Mine in Puno Region. The Palca XI Mine, operated by Minera Regina S.A., was the main producer. In 1996, production decreased to 331 t, or about 55% of that of 1995.

In 1996, four cement companies operated in Peru and Cementos Lima S.A., produced about 1,095,000 t of cement, or about 40% of Peru's total cement output. The Atocongo has a design capacity of 1 million metric tons per year (Mt/yr), drawing from limestone quarries nearby. Most of the cement was exported primarily to Chile. Cementos Norte Pacasmayo S.A., was the second largest cement company in Peru, accounting for 21% of total production. It has an installed capacity of 1.1 Mt/yr, with a plant utilization of 60%. The plant is 670 kilometers (km) north of the Panamerican Highway in Pacasmayo, La Libertad Region.

The phosphate deposits of Bayóvar in northern Peru scheduled for privatization in mid-1997, had proven reserves of 570 Mt. In 1996, only 47,500 t of phosphate was produced. The 90,000-metric-ton-per-year phosphate plant was operated by Empresa Minera Regional Grau Bayóvar, S.A. Phosphate shipments continued to New Zealand under a 100,000-t contract signed with Norphos International Ltd. of Auckland. Other shipments went to Chile and Costa Rica through the Port of Paita.

Liquid fuels provided more than 60% of Peru's total energy requirements. Petroleum accounted for 23% of energy consumption, and electricity met 10% of energy demand. Natural gas supplied 7% to the country's energy mix.

Peru's largest coal deposits are at Alto Chicama, 140 km north of Trujillo in La Libertad Region. Other coal deposits occur in the Cuenca del Santa in the Marañón Region and coal basins of Goyllarisquizga and Hatun Huasi in the Cáceres Region of central Peru.

Natural gas was primarily transported by pipeline from the Talara Basin in the Grau Region to the Talara refinery on the coast. Two gasfields were candidates for development in the Ucayali Basin. Peru's proven natural gas reserves were estimated at 200 billion cubic meters at the end of 1996. The Aguaytia gasfield, approximately 41 km west-northwest of Pucallpa, had proven reserves of 12.5 billion cubic meters of gas and 13.2 million barrels (Mbbbl) of condensate (natural gas liquids). The country's largest potential gasfield is Camisea in Cusco, which consists of a pair of crescent-shaped gasfields abundant to supply Arequipa, Cusco, Lima, and others with energy for the next 100 years and potentially rich enough to supply fuel to neighboring Brazil (The Wall Street Journal,

1997, p. A8). The San Martín and the Cachiriari prospects at Camisea had estimated inferred reserves of about 305.8 billion cubic meters of gas and 725 Mbbl of condensate (Sociedad Nacional de Minería y Petróleo, 1996, p. 57). The fields are distant from potentially accessible markets; the Ministry of Energy and Mines, however, indicated that new infrastructure was needed and must be developed.

In 1996, petroleum production in Peru averaged 120,299 barrels per day (bbl/d) compared with 1995's output of 121,762 bbl/d. For the ninth consecutive year, Peru imported crude oil and petroleum products to satisfy its internal demand. The value of petroleum and derivative imports was \$715.2 million, which created a trade deficit of \$367.4 million for 1996.

Peru's total crude oil production of 43.9 Mbbl in 1996 came from Petroperu, 48.5%; Occidental Petroleum Corp. of the United States, 43.5%; and other producers, 8%. About 65% of the country's crude oil production came from the jungle blocks in the Ucayali Region; the remaining was produced at the coastal and offshore fields in the north of Peru. The country's declining petroleum reserves were estimated at about 380 Mbbl in 1996, compared with the 1981 peak of 850 Mbbl. The largest oil refinery in Peru, Lima, is La Pampilla, with a capacity of about 102,000 bbl/d. The second largest oil refinery in Peru, Talara, has a capacity of about 60,000 bbl/d (Sociedad Nacional de Minería y Petróleo, 1996, p. 52-53).

Peru has 1,801 km of railroads and 69,942 km of roads, of which 7,459 km were paved and 13,538 km were unpaved. There were 8,600 km of navigable waterways and tributaries to the Amazon River system and 208 km of waterways into Lake Titicaca. Peru has an installed electrical generating capacity of 5,042 MW, 60% of which came from hydroelectric plants.

Important mineral industry ports included Callao, Ilo, Matarani, Paita, San Nicolás, and Talara on the Pacific Ocean and Iquitos on the Amazon River. Also, a petroleum depot at Bayóvar serviced the 800-km North Peru crude oil pipeline. Natural gas and liquid gas were transported through a 64-km pipeline.

Peru's rebounding economy, with strong capital flow from domestic and foreign investors, was expected to bring long-term benefits to the energy, mining, and related mineral industries, which remained the most interesting sectors of the Peruvian economy.

The privatization of Peru's Centromin and Petroperu was expected to continue improving prospects for the mining and oil and gas industries. However, the Government faces difficulties with opposing political parties and labor unions.

The privatization process should continue to generate investments in every sector of the Peruvian economy, particularly in the mining and energy industries. Current investments are modernizing Peru's industrial infrastructure. Furthermore, future investments in the minerals sector were projected to be about \$11 billion during the next decade, of which about \$1 billion would be dedicated to mineral exploration, \$2 billion for the expansion of current mine operations, and \$8 billion for the development of new mines.

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Major Sources of Information

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TABLE 1
PERU: PRODUCTION OF MINERAL COMMODITIES 1/

(Metric tons unless otherwise specified)

Commodity	1992	1993	1994	1995	1996 e/
METALS					
Antimony:					
Mine output, Sb content e/	339	240	460	460	460
Metal	311	195	379 2/	230 r/	305 2/
Arsenic, white 3/	2,486 r/	4,415 r/	4,224 r/	4,616 r/	4,969 2/
Bismuth:					
Mine output, Bi content e/	550	1,300 r/	1,210 r/	900 r/	1,000
Metal	419	937	877 r/	581 r/	939 2/
Cadmium:					
Mine output, Cd content e/	500	500	600	600	500
Metal	399	472	507 2/	560 r/	405 2/
Chromium, mine output, Cr content e/	400	400	400	400	400
Copper:					
Mine output, Cu content	379,128 r/	381,250 r/	365,513 2/	409,693 r/	484,231 2/
Sulfate, Cu content	3,300	3,400	3,598 r/	3,755 r/	3,655 2/
Metal:					
Blister	97,179 r/	98,695 r/	107,885 r/	83,368 r/	73,817 2/
Refined	252,647 r/	258,934 r/	265,413 r/	261,751 r/	249,890 2/
Electrowon	-- r/	-- r/	-- r/	33,392 r/	88,171 2/
Total	252,647 r/	258,934 r/	265,413 r/	295,143 r/	338,061 2/
Gold:					
Mine output, Au content 4/ kilograms	16,000	23,650 r/	42,702 r/	57,744 r/	64,788 2/
Metal do.	4,183 r/	5,148 r/	3,611 2/	2,139 r/	1,884 2/
Indium do.	3,050	3,190	4,000 2/	5,069 r/	4,295 2/
Iron and steel:					
Iron ore and concentrate:					
Gross weight thousand tons	2,850	4,930	7,430 2/	6,234 r/	4,304 2/
Fe content do.	1,845	3,400	4,830 2/	3,948 r/	2,876 2/
Metal:					
Pig iron do.	147	147 e/	150	150	150
Sponge iron e/	20,000	20,000	20,000	20,000	20,000
Ferroalloys e/	360	360	360	360	360
Steel ingots and castings thousand tons	343	417	506	515	515
Semimanufactures	242	242 e/	250	250	250
Lead:					
Mine output, Pb content	214,007 r/	224,695 r/	233,510 r/	237,597 r/	248,787 2/
Metal	83,951	87,117	88,071	89,696 r/	94,923 2/
Manganese, mine output, Mn content e/	160	160	200	200	200
Molybdenum, mine output, Mo content	5,629 r/	4,777 r/	4,631 r/	3,411 r/	3,711 2/
Selenium, metal, refined kilograms	14,400	17,100	21,000 2/	21,000	21,000
Silver:					
Mine output, Ag content	1,614 r/	1,631 r/	1,742 r/	1,929 r/	1,970 2/
Metal, refined	691	589	710 2/	680 r/	717 2/
Tellurium, metal kilograms	18,600	17,400	28,000 2/	30,087 r/	25,102 2/
Tin, mine output, Sn content	10,044 r/	14,310 r/	20,275 r/	22,331	27,004 2/
Tungsten, mine output, W content	802	398	256 2/	728 r/	331 2/
Zinc:					
Mine output, Zn content	604,525 r/	664,045 r/	690,017 r/	692,290 r/	760,563 2/
Metal	124,000	157,000	182,000 2/	158,987 r/	173,138 2/
INDUSTRIAL MINERALS					
Barite	16,579	23,988	53,074 r/	37,476 r/	36,815 2/
Boron materials, crude (borates)	26,600	36,500	30,000	40,581 r/	38,973 2/
Cement, hydraulic e/ thousand tons	2,090 2/	2,500 r/	3,000 r/	3,000 r/	3,200 2/
Chalk e/	100,000	101,200	101,200	101,200	101,200
Clays:					
Bentonite	14,210 r/	10,250 r/	27,682 r/	26,961 r/	18,592 2/
Fire clay	9,500	9,500 e/	9,500	9,500	9,500
Kaolin	5,500 e/	5,100	5,100	8,445 r/	14,295 2/
Common clay	67,900	138,000 e/	138,000	312,520 r/	378,399 2/
Diatomite e/	25,000	35,100	35,100	35,100	35,100

See footnotes at end of table.

TABLE 1--Continued
PERU: PRODUCTION OF MINERAL COMMODITIES 1/

(Metric tons unless otherwise specified)

Commodity	1992	1993	1994	1995	1996 e/
INDUSTRIAL MINERALS--Continued					
Feldspar e/	10,000	11,400	11,400	11,400	11,400
Gypsum, crude	35,300	35,300 r/	35,000	35,000	35,000
Lime e/ thousand tons	14,000	14,000	14,000	14,000	14,000
Mica e/	100	100	100	100	100
Nitrogen, N content of ammonia e/	90,000	90,000	90,000	90,000	90,000
Phosphate, crude	37,300	37,400	37,400	29,682 r/	103,353 2/
Salt, all types e/	238,000 2/	238,000	238,000	140,200 r/	235,536 2/
Stone, sand and gravel:					
Stone:					
Dolomite e/	40,000	40,000	50,000	1,622 r/	645 2/
Flagstone e/	300,000	300,000	300,000	300,000	300,000
Granite e/	2,000	2,000	2,000	2,000	2,000
Limestone thousand tons	1,480	1,610	1,600	4,315 r/	4,363 2/
Marble e/	10,300 2/	13,300	12,000	14,924 r/	12,410 2/
Onyx e/	204 2/	150	150	150	150
Quartz and quartzite (crushed) e/	40,000	40,000	40,000	40,000	40,000
Shell, marl e/	4,000	4,000	4,000	4,000	4,000
Slate e/	18,000	18,000	18,000	22,954 r/	31,164 2/
Travertine e/	3,990 2/	3,990 2/	5,000	199,944 r/	259,465 2/
Sand and gravel:					
Construction thousand tons	960	871	900	993 r/	1226 2/
Silica sand do.	152	115	100	92 r/	76 2/
Sulfur, elemental:					
Native e/	100	100	100	100	100
Byproduct of metallurgy e/	60,000 r/	60,000 r/	60,000 r/	60,000	60,000
Sulfuric acid, gross weight	242,000 r/	227,000	220,000	213,539 r/	233,876 2/
Talc and related materials: e/					
Talc	2,000	1,200	1,200	13,818 r/	12,985 2/
Pyrophyllite e/	8,000	8,000	8,000	8,000	8,000
Total	10,000	9,200	9,200	21,818 r/	20,985 2/
MINERAL FUELS AND RELATED MATERIALS					
Coal:					
Anthracite, run-of-mine	79,800	31,100	35,000	14,324 r/	16,778 2/
Bituminous, run-of-mine e/	14,500	41,000	45,000	45,000	45,000
Total	94,300	72,100	80,000	59,324 r/	61,778 2/
Coke, all types e/	10,000	10,000	10,000	32,500 2/	10,000
Gas, natural: e/					
Gross million cubic meters	1,200	1,200	1,200	1,200	1,200
Marketed do.	570	570	600	600	600
Natural gas liquids: e/					
Natural gasoline and others 5/ thousand 42-gallon barrels	295	295	295	295	295
Butane do.	4	4	4	4	4
Total do.	299	299	299	299	299
Petroleum:					
Crude do.	42,300	46,000	46,500 2/	44,443 r/	43,909 2/
Refinery products:					
Liquefied petroleum gas do.	1,540	1,540 e/	1,540	1,924 r/	1,974 2/
Gasoline, motor do.	9,090	9,090 e/	9,090	9,980 r/	9,761 2/
Jet fuel do.	2,170	2,170 e/	2,170	3,250 r/	3,390 2/
Kerosene do.	5,530	5,530 e/	5,530	5,163 r/	5,037 2/
Distillate fuel oil do.	11,600	11,600 e/	11,600	12,430 r/	12,541 2/
Lubricants do.	38	38 e/	38	65 r/	243 2/
Residual fuel oil do.	24,400	24,400 e/	24,400	18,053 r/	18,362 2/
Asphalt do.	270	270 e/	270	1,557 r/	761 2/
Other e/ 6/ do.	848	848 e/	848	1,574 r/	2,237 2/
Total	55,486	55,486 e/	55,486	53,996 r/	54,306 2/

e/ Estimated. r/ Revised.

1/ Table includes data available through May 1997.

2/ Reported figure.

3/ Output reported by Empresa Minera del Centro del Peru, S.A.

4/ Much of Peru's placer gold production was not reported.

5/ Includes hexane.

6/ Includes refinery fuel and losses.

TABLE 2
PERU: STRUCTURE OF THE MINERAL INDUSTRY FOR 1996

(Thousand metric tons unless otherwise specified)

Commodity	Major operating companies and major equity owners	Location of main facilities	Annual capacity
Antimony	Empresa Minera del Centro del Peru S.A., (Centromin) (Government, 100%)	Smelter at La Oroya, Junin Department	700 1/
Barite	Barmine S.A., (private, 100%)	Santa Cruz de Cocachacra, Huarochiri Department	NA
Bentonite	Minerales Andinos S.A., (NL Industries, 90%)	Vichayal Mine, Piura Department	9
Bismuth	Centromin	Refinery at La Oroya	1,000 1/
Copper	Southern Peru Copper Corp. (SPCC) (Asarco Corp., 63.0%; Phelps Dodge Overseas Capital Corp., 16.3%; The Marmon Group Inc., 20.7%)	Cuajone, Moquegua Department, and Toquepala, Tacna Department	300
		Smelter at Ilo, Moquegua Department	250
		Refinery at Illlo, Moquegua Department	175
Do.	Centromin	Cobriza, Huancavelica Department; Casapalca and Yauricocha, Lima Department; Morococha and San Cristobal, Junin Department	60
		Smelter at at La Oroya	65
		Refinery at La Oroya	60
Do.	BHP Tintaya S.A., (private, 100%)	Tintaya Mine, Cusco Department	50
Do.	Sociedad Minera Cerro Verde S.A., (Cyprus-Amax Minerals Co., 90.9%; Cia. de Minas Buenaventura, 9.1%)	Cerro Verde, Arequipa Department	30
		Electrowon at Cerro Verde	20
Dolomite	Minera Baribent S.A., (private, 100%)	Esperanza, Ancash Department	25
Gold	Minera Yanacocha S.A., (Newmont Mining Corp., 51.4%; Cia. de Minas Buenaventura, 43.6%; World Bank's IFC, 5%)	Yanacocha and Magui-Magui mines Cajamarca Department	16,000 2/
Do.	Cia. Minera Poderosa S.A., (private, 100%)	Poderosa, La Libertad Department	1,300 2/
Do.	Cia. de Minas Orcopampa S.A., (Buenaventura, 100%)	Orcopampa, Arequipa Department	1,050 2/
Do.	Asesoría Contable Minera S.A., (private, 100%)	Ocona, Santa Clarita, Explorato, and Molino de Oro, Arequipa Department	1,000 2/
Do.	Cia. Aurifera Rio Inambari S.A., (Cia. Minera del Sur S.A., 84%, Aurifera Claudia, 16%)	Rio Caichive, Madre de Dios Department	200 2/
Do.	Minera Aurifera Retamas S.A., (private, 100%)	Retamas, La Libertad Department.	3,900 2/
Do.	Consorcio Minero Horizonte S.A., (private, 100%)	Parcoy, La Libertad Department.	2,100 2/
Iron ore	Shougang Hierro Peru S.A., (private, 100%)	Marcona, Ica Department.	13,000
Lead	Centromin	Cerro de Pasco, Casapalca, San Cristobal, Morococha, and Yauricocha Mines	85
		Smelter at La Oroya	93
		Refinery at La Oroya	95
Do.	Cia. Minera Milpo S.A., (private, 100%)	El Porvenir Mine, Pasco Department	20
Do.	Cia. Minera Santa Luisa S.A., (private, 100%)	Huanzala Mine, Junin Department	40
Molybdenum	SPCC	Cuajone, Moquegua Department and Toquepala, Tacna Department	NA
Petroleum, crude	Petroleos del Peru S.A., (Petroperu) (Government, 100%)	Onshore Piura Department; northeast and central jungle areas, Loreto Department	68,000 3/
Do.	Petroleos del Mar S.A., (Petroperu, 100%)	Pacific Coast, offshore Piura Department	28,000 3/
Do.	Occidental Petroleum Corp. del Peru (private, 100%)	Northeastern jungle, Loreto Department	90,000 3/
Petroleum products	Petroperu	Refineries at Talara, Lima, Iquitos, Marsella, and Pucallpa	185,500 3/
Silica sand	Minera Baribent S.A., (private, 100%)	Maria G. and Martin I., Junin Department	27
Silver	Centromin	Cerro de Pasco, Cobriza, Monterrosas, Morococha, San Cristobal, and Yauricocha Mines	466,000 2/
		Refinery at La Oroya	809,000 2/
Do.	Cia. de Minas Buenaventura S.A., (Buenaventura) (private, 83%; Centromin 17%)	Julcani and Huachocolpa Mines Huancavelica Department, Uchucchacua Mine, Lima Department	187,000 2/
Do.	Cia. de Minas Orcopampa S.A., (Buenaventura, 100%)	Orcopampa Mine, Arequipa Department	161,000 2/
Steel	Empresa Siderúrgica del Peru (private, 100%)	Chimbonte, Ancash Department	550
Do.	Empresa Laminadora del Pacifico S.A., (private, 100%)	Pisco, Ica Department	180
Tellurium	Centromin	Refinery at La Oroya	12 1/
Tin	Minsur S.A., (private 100%)	San Rafael Mine, Puno Department	2,500 1/
Tungsten	Minera Regina S.A., (private, 100%)	Palca XI, Puno Department	1,400 1/
Do.	Fermin Malaga Santolalla S.A., (private, 100%)	Pasto Bueno, Ancash Department	1,000 1/

See footnotes at end of table.

TABLE 2--Continued
 PERU: STRUCTURE OF THE MINERAL INDUSTRY FOR 1995

(Thousand metric tons unless otherwise specified)

Commodity	Major operating companies and major equity owners	Location of main facilities	Annual capacity
Zinc	Centromin	Casapalca, Cerro de Pasco Morococha, San Cristobal, and Yauricocha mine units	235
Do.	Refineria Cajamarquilla S.A., (Cominco Ltd. of Canada, 87%; Marubeni Corp. of Japan, 13%), Minero Peru	Refinery at La Oroya	70
Do.	Cia. Mra. San Ignacio de Morococha S.A., (private, 100%)	San Vicente Mine, Junin Department	70
Do.	Cia. Minera Santa Luisa S.A., (private, 100%)	Huanzala Mine, Junin Department	20
Do.	Cia. Minera Milpo S.A., (private, 100%)	Yanacancha, Cerro de Pasco Department.	60

NA Not available.

1/ Metric tons per year.

2/ Kilograms per year.

3/ 42-gallon barrels per day.