PHELPS DODGE CORP
Form 10-K/A
April 24, 2003

UNITED STATES

SECURITIES AND EXCHANGE COMMISSION

WASHINGTON, D.C. 20549

FORM 10-K/A

AMENDMENT NO. 2

ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the fiscal year ended December 31, 2002

Commission file number 1-82

PHELPS DODGE CORPORATION

(a New York corporation)

13-1808503
(I.R.S. Employer Identification No.)

One North Central Avenue, Phoenix, AZ 85004-2306

Registrant s telephone number: (602) 366-8100

Securities registered pursuant to Section 12(b) of the Act:

Title of each class	Name of each exchange on which registered
Common Shares, $6.25 par value per share	New York Stock Exchange
Mandatory Convertible Preferred Shares, $1.00 par value per share	New York Stock Exchange

Securities registered pursuant to Section 12(g) of the Act: None

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports) and (2) has been subject to such filing requirements for the past 90 days. Yes [x] No [ ].

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K is not contained herein, and will not be contained, to the best of registrant s knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K. [x]

Indicate by check mark whether the registrant is an accelerated filer (as defined in Rule 126-2 of the Act). Yes [x] No [ ].

The aggregate market value of Common Shares of the issuer held by nonaffiliates at April 9, 2003, was approximately $2,892,046,398.

Number of Common Shares outstanding at April 9, 2003: 88,986,043 shares.

Documents Incorporated by Reference:

Document	Location in 10-K
Proxy Statement for 2003 Annual Meeting	Part III

Explanatory Note

This Form 10-K/A constitutes Amendment No. 2 to the Registrant's 10-K for the fiscal year ended December 31, 2002. This Form 10-K/A is being filed solely for the purpose of correcting a typographical error in the date heading on the Ore Reserves table on page 17 of Part I, Items 1 and 2. The date heading now correctly reads "Total Reserves Estimated at December 31, 2001". There are no other changes to the Registrant's Form 10-K, as amended by Amendment No. 1 thereto.

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PHELPS DODGE CORPORATION

2002 Annual Report on Form 10-K

Part I

Restatements

Phelps Dodge Corporation (the Company, which also may be referred to as Phelps Dodge, PD, we, us or ours) identified certain accounting matters relating to our December 31, 2001 and 2000, Consolidated Financial Statements that require restatement. The matters subject to adjustment, which are summarized below and discussed in Note 22 to the Consolidated Financial Statements increased retained earnings by $22.9 million at December 31, 2001 to reflect the after-tax effect of such items. These adjustments were necessary (i) to change the Company s units-of-production depreciation rate methodology for mining, smelting and refining assets to exclude estimates of future capital as well as any material other than proven and probable ore reserves, and to depreciate short-lived assets on a straight-line basis over their estimated useful lives, less salvage value; (ii) to adjust the fair value estimates of acquired reclamation obligations and to recognize the related annual accretion expense, and to revise certain reclamation cost estimates and associated charges for information obtained in 2001; (iii) to capitalize as inventory copper contained in low-grade mill and leach stockpiles, and consequent in-process materials being converted to salable products; (iv) to reverse a loss contingency reserve associated with legal matters; and (v) to increase the valuation allowance for deferred tax assets. Additionally, as discussed in Note 21, Business Segment Data, our presentation of reportable segment information for Phelps Dodge Mining Company for 2001 and 2000 has been revised to reflect additional segments.

Items 1. and 2. Business and Properties

The Company is the world s second largest producer of copper, among the world s largest carbon black and magnet wire producers, and is the world s largest producer of continuous-cast copper rod. On October 16, 1999, we acquired Cyprus Amax Minerals Company (Cyprus Amax or Cyprus). As a result of the acquisition, we also became one of the world s largest producers/processors of molybdenum and molybdenum products.

The Company consists of two major divisions: (i) Phelps Dodge Mining Company (PDMC) and (ii) Phelps Dodge Industries (PDI).

(i) PDMC includes our worldwide, vertically integrated copper operations from mining through rod production, marketing and sales; molybdenum operations from mining through conversion, marketing and sales; other mining operations and investments; and worldwide mineral exploration and development programs. PDMC comprises 11 reportable segments Morenci, Bagdad/Sierrita, Miami/Bisbee, Chino/Cobre and Tyrone (located in the United States), Candelaria, Cerro Verde and El Abra (located in South America), Manufacturing and Sales, Primary Molybdenum and Other Mining.

(ii) PDI comprises two reportable segments Specialty Chemicals and Wire and Cable.

In 2002, PDMC produced 1,028,800 tons of copper for our account from worldwide mining operations, and an additional 246,800 tons of copper for the accounts of our minority interest joint-venture partners. Gold, silver, molybdenum, rhenium and sulfuric acid are by-products of our copper and molybdenum operations. Production of copper for our own account from our U.S. operations constituted approximately 49 percent of the copper mined in the United States in 2002. Much of our U.S. cathode copper production, together with additional copper purchased from others, is used to produce continuous-cast copper rod, the basic feed for the electrical wire and cable industry. We also explore for metals and minerals throughout the world.

Our South American mining operations include Candelaria and El Abra, major copper mines in Chile, the Cerro Verde copper mine in Peru, and other operations and investments in Chile and Peru. These operations produce a variety of metals and minerals including copper, gold and silver.

High-purity, chemical-grade molybdenum concentrate is produced at our Henderson mine in Colorado. Most of the concentrate produced at Henderson is roasted at our Fort Madison roasters and then further processed at the facility s chemical plant into value-added molybdenum chemical products. In addition, some of the concentrate is processed into salable molysulfide for use primarily in the lubricant industry.

Molybdenum concentrate is also produced as a by-product at two of our U.S. copper operations.

This concentrate is generally roasted at one of our three roasting operations to produce technical grade molybdic oxide for sale into the metallurgical markets (i.e., steel industries).

In addition to our mining interests, we produce engineered products principally for the global energy, telecommunications, transportation and specialty chemicals sectors through PDI.

We produce specialty chemicals at operations in North America, Europe, South America and Asia through Columbian Chemicals Company, one of the world s largest producers of carbon black. Carbon black is a reinforcing agent in natural and synthetic rubber that increases the service life of tires, hoses, belting and other products for the rubber industry. We also produce specialty carbon black for other industrial applications such as pigments for printing, coatings, plastics and other non-rubber applications.

Our Wire and Cable segment has operations in the United States, Latin America, Asia, Europe and Africa. This segment produces magnet wire and other copper products for sale principally to original equipment manufacturers for use in electrical motors, generators, transformers and other products, and manufactures copper and aluminum energy cables, telecommunications cables and specialty conductors.

Note 21 to our Consolidated Financial Statements contained herein includes financial data for each of the last three years relating to our business segments, including data by geographic area.

Phelps Dodge was incorporated as a business corporation under the laws of the state of New York in 1885. Our world headquarters is located in Phoenix, Arizona, and is a leased property. We employed approximately 13,500 people worldwide on December 31, 2002.

Throughout this document, unless otherwise stated, all references to tons are to short tons, and references to ounces are to troy ounces.

Available Information. Phelps Dodge files annual, quarterly and current reports, proxy statements and other information with the U.S. Securities and Exchange Commission (the SEC). You may read and copy any document we file at the SEC s public reference room at Room 1024, 450 Fifth Street, NW, Washington, D.C. 20549. Please call the SEC at 1-800-SEC-0330 for information on the public reference room. The SEC maintains a Web site that contains annual, quarterly and current reports, proxy statements and other information that issuers (including Phelps Dodge) file electronically with the SEC. The SEC s Web site is *http://www.sec.gov.*

Phelps Dodge s Web site is *http://www.phelpsdodge. com*. Phelps Dodge makes available free of charge through its Internet site, via a link to the SEC s Web site at *http://www.sec.gov*, its annual reports on Form 10-K; quarterly reports on Form 10-Q; current reports on Form 8-K; Forms 3, 4 and 5 filed on behalf of directors and executive officers; and any amendments to those reports filed or furnished pursuant to the Securities Exchange Act of 1934 as soon as reasonably practicable after such material is electronically filed with, or furnished to, the SEC.

Phelps Dodge makes available free of charge on *http://www. phelpsdodge.com* its most recent annual report on Form 10-K, its quarterly reports on Form 10-Q for the current fiscal year, its most recent proxy statement and its most recent summary annual report to shareholders, although in some cases these documents are not available on our site as soon as they are available on the SEC s site. You will need to have on your computer the Adobe Acrobat Reader software to view some of these documents, which are in PDF format. If you do not have Adobe Acrobat, a link to Adobe s Internet site, from which you can download the software, is provided. The information on Phelps Dodge s Web site is not incorporated by reference into this report.

PHELPS DODGE MINING COMPANY

PDMC is our international business division that comprises our vertically integrated copper operations from mining through rod production, primary molybdenum operations through conversion, marketing and sales, and worldwide exploration. PDMC comprises 11 reporting segments.

Our copper mines comprise five reportable segments in the United States (Morenci, Bagdad/Sierrita, Miami/Bisbee, Chino/Cobre, and Tyrone) and three reportable segments in South America (Candelaria, Cerro Verde and El Abra). These segments include open-pit mining, sulfide ore concentrating and electrowinning. In addition, they produce gold and silver, and the Bagdad and Sierrita mines also produce molybdenum and rhenium, as by-products.

The Manufacturing and Sales segment consists of conversion facilities including our smelters, refineries and rod mills, as well as sales and marketing. The Manufacturing and Sales segment sells copper to others primarily as rod, cathode or concentrate, and as rod to our Wire and Cable segment. In addition, at times it smelts and refines copper and produces copper rod for customers on a toll basis. Toll

arrangements require the tolling customer to deliver appropriate copper-bearing material to our facilities, which we then process into a product that is returned to the customer. The customer pays PDMC for processing its material into the specified products.

The Primary Molybdenum segment consists of the Henderson and Climax mines and related conversion facilities. This segment is an integrated producer of molybdenum, with mining, roasting and processing facilities producing high-purity, molybdenum-based chemical and metallurgical products. In addition, at times it roasts and/or processes material on a toll basis. Toll arrangements require the tolling customer to deliver appropriate molybdenum-bearing material to our facilities, which we then process into a product that is returned to the customer. The customer pays PDMC for processing its material into the specified products.

Other Mining segment includes our worldwide mineral exploration and development programs, a process technology center that directs its activities at improving existing processes and developing new cost-competitive technologies, and other ancillary operations.

Our five reportable U.S. Mines segments (Morenci, Bagdad/Sierrita, Miami/Bisbee, Chino/Cobre, and Tyrone), the Manufacturing and Sales segment and the Other Mining segment are discussed herein together, where appropriate, as U.S. Mining Operations.

Our U.S. Mining Operations (defined above) and our South American Mines (Candelaria, Cerro Verde and El Abra segments) are discussed herein together, where appropriate, as our Worldwide Copper Mining Operations.

Properties, Facilities and Production

Following is a map indicating the approximate location of PDMC s U.S. copper and molybdenum mines:

U.S. Mines

We produce electrowon copper cathode at solution extraction/electrowinning (SX/EW) operations near Tyrone and Silver City, New Mexico (Tyrone and Chino mines, respectively); and Morenci, Miami (currently curtailed), Bagdad (partially curtailed) and Green Valley (partially curtailed), Arizona (Morenci, Miami, Bagdad and Sierrita mines, respectively). We produce copper concentrate from open-pit mines and concentrators located at Bagdad and Green Valley, Arizona (Bagdad and Sierrita mines, respectively); and Silver City, New Mexico (currently curtailed, Chino mine).

We are the world s leading producer of copper using the SX/EW process. In 2002, we produced a total of 578,700 tons of cathode copper at our SX/EW facilities in the United States, compared with 585,300 tons in 2001 and 510,200 tons in 2000. SX/EW is a cost-effective process for extracting copper from cer-

tain types of ores. SX/EW is a major factor in our continuing efforts to maintain internationally competitive costs. Our total annual capacity of electrowon copper cathode production currently is 410,000 tons at Morenci, 105,000 tons at Miami, 75,000 tons at Chino, 84,000 tons at Tyrone, 25,000 tons at Sierrita and 16,000 tons at Bagdad.

The Morenci complex in southeastern Arizona comprises an open-pit mine, a concentrator, four solution extraction facilities and three electrowinning tankhouses. We operate Morenci and own an 85 percent undivided interest; the remaining 15 percent interest is owned by Sumitomo Metal Mining Arizona, Inc. (Sumitomo), a jointly owned subsidiary of Sumitomo Metal Mining Co., Ltd., and Sumitomo Corporation. Each partner takes in kind its share of Morenci production. Morenci is the largest copper producing operation in North America.

In 2001, the Company completed its $220 million mine-for-leach project at Morenci. As a result, the Morenci concentrator was placed on care-and-maintenance status. The crushing facility at the Metcalf concentrator continues to process approximately 85,000 tons of ore daily for the expanded leach operation. The new mine-for-leach facilities increased Morenci s annual electrowon cathode production capacity to 410,000 tons. Under certain favorable economic circumstances, Morenci may produce concentrates from primary sulfide ores.

In 1999, the Metcalf concentrator was permanently closed as a result of rebalancing PDMC operations. After the 1999 acquisition of Cyprus Amax and the Company s decision to convert Morenci to mine-for-leach processing, it became clear that the Metcalf concentrator would not likely operate in the future. This resulted in a pre-tax impairment of $88 million recorded in 1999.

We are presently a party to litigation that could adversely impact the allocation of available water supplies for the Morenci operation and our other properties in Arizona. (Refer to Item 3, Legal Proceedings, for information concerning the status of these proceedings.)

Our wholly owned Bagdad mine in northwestern Arizona primarily mines copper sulfide ore. It produces copper and molybdenum concentrates and minor amounts of silver. The operation consists of an open-pit mine, sulfide ore concentrator producing copper and molybdenum concentrates, and a leaching system with an SX/EW operation producing copper cathode. In January 2002, as a result of the then-current economic environment, Bagdad s mill throughput was curtailed temporarily to approximately one-half capacity. At the time of this curtailment, we estimated that approximately 70,500 tons of annual copper production and 7 million pounds of annual by-product molybdenum production would be reduced. In 2002, copper production at Bagdad exceeded our estimates due to improved production from our SX/EW operation, higher ore grades from normal mine planning improvements, and improvements in copper recovery and improved milling efficiency resulting from *Quest for Zero* actions. As a result, 2002 annual copper production was reduced by approximately 44,600 tons. Throughput at Bagdad also exceeded half capacity at various times during the year, primarily driven by smelter and sulfuric acid supply requirements.

In February 2002, we announced that Bagdad would construct an approximately $40 million copper concentrate leaching demonstration plant designed to recover commercial-grade copper cathode from chalcopyrite concentrates. The plant is scheduled to commence production in the second quarter of 2003. At full capacity, the plant is expected to produce 35 million pounds of copper cathode from concentrate annually. If successful, this technique could assist in our long-term cost reduction strategy.

We own the Sierrita mine near Green Valley, Arizona. The facility consists of an open-pit mine, sulfide ore concentrator producing copper and molybdenum concentrates, two molybdenum roasters and a rhenium processing facility. Sierrita also uses an oxide and low-grade sulfide ore stockpile leaching system with an SX/EW operation to produce copper cathode. Sierrita s on-site roasters process molybdenum concentrates produced at Sierrita and Bagdad as well as purchased concentrates or concentrates tolled for third parties. The resulting metallurgical grade molybdic oxide and related products are either packaged for shipment to customers worldwide or transported to other Phelps Dodge facilities for further processing. At year-end 2001, as a result of the then-current economic environment, mill throughput at the Sierrita mine was reduced temporarily to approximately one-half of its capacity. Our estimates at the time were that these actions would eliminate approximately 49,600 tons of annual copper production and 7 million pounds of by-product molybdenum. In 2002, copper production at Sierrita exceeded our estimates due to improved production from higher ore grades from normal mine planning improvements, improvements in copper recovery and improved milling efficiency resulting from *Quest for Zero* actions, and smelter and acid supply requirements. As a result, 2002 annual copper production was reduced by approximately 44,200 tons.

Our wholly owned operations at Miami, Arizona, consist of an open-pit copper mine, an SX/EW operation producing copper cathode, a smelter, an

acid plant, an electrolytic refinery and a copper rod plant. In January 2002, as a result of the then-current economic environment, the Miami mine and refinery were closed temporarily. Our estimate at the time was that this curtailment action would eliminate approximately 49,600 tons of annual copper production. In 2002, Miami s copper production was improved by higher than expected output from residual leach stockpiles, various other improvements resulting from *Quest for Zero* actions, and the use of smelter weak acid in leaching operations. As a result, 2002 annual copper production was reduced by approximately 30,400 tons.

We operate an open-pit copper mine, concentrator and SX/EW facility near Silver City, New Mexico, and a smelter in Hurley, New Mexico, that are owned by Chino Mines Company (Chino), a general partnership in which we hold a two-thirds interest. Heisei Minerals Corporation (Heisei), a subsidiary of Mitsubishi Materials Corporation and Mitsubishi Corporation, owns the remaining one-third interest in Chino. Each partner purchases its proportionate share of Chino s copper production each month. Beginning in late 1998 and through the first half of 1999, production was curtailed resulting in a reduction of approximately 35,000 tons of annual copper production. In March 2001, the concentrator was temporarily shut down, and in January 2002, the Chino mine and smelter were closed temporarily. Our estimates at the time were that these actions would eliminate approximately 144,400 tons of annual copper production. We anticipated that residual leaching operations at Chino would become uneconomic by mid-year 2002. However, copper recoveries from leach stockpiles have been better than anticipated and leaching operations are now expected to remain economic for several more years, even with the mine curtailed. As a result, 2002 annual copper production was reduced by approximately 97,400 tons.

Phelps Dodge operates its wholly owned Tyrone open-pit mine and SX/EW plant near Tyrone, New Mexico. Tyrone has been a mine-for-leach operation since 1992. The Tyrone mine is currently operating at less than full capacity due to current unfavorable market conditions.

In February 1998, we acquired Cobre Mining Company Inc. (Cobre) located in southwestern New Mexico adjacent to our Chino operations. The primary assets of Cobre include an open-pit copper mine, two underground copper mines, two mills, and the surrounding 11,000 acres of land, including mineral rights. In late 1998 and early 1999, all of these operations were indefinitely suspended, reducing copper production by approximately 35,000 tons per year. The entire Cobre operation remains on care-and-maintenance status. In December 2002, the Company recognized an impairment charge to write-down Cobre s assets by $115.5 million (before and after taxes). We took this action after revising mine plans and assessing recoverability. The impairment assessment used a copper price lower than the prior-year assumption. The copper price used was based on the historical moving average copper price for the past 10 years, which we believe to be indicative of full economic and pricing cycles for copper. The amount of Cobre s impairment was determined through an assessment of projected discounted cash flows for the remaining ore reserves.

South American Mines

We produce electrowon copper cathode at SX/EW operations near Arequipa, Peru; and near Calama, Chile. We produce copper concentrate from open-pit mines and concentrators located near Copiapó, Chile. We also produce copper concentrate from two underground mines and a concentrator located near Copiapó, Chile (currently curtailed).

Following is a map indicating the approximate location of PDMC s South American mines:

We operate the Candelaria mine located near Copiapó in the Atacama Desert of northern Chile. The operation presently consists of an open-pit copper mine, concentrator, port and associated facilities. We own an 80 percent partnership interest in Candelaria, a Chilean contractual mining company, through Phelps Dodge Candelaria, Inc., a wholly owned subsidiary. Sumitomo Metal Mining Co., Ltd. and Sumitomo Corporation own the remaining 20 percent interest.

Phelps Dodge owns a 51 percent partnership interest in Sociedad Contractual Minera El Abra (El Abra), a Chilean contractual mining company. El Abra holds mining concessions over more than 33,000 acres of land near Calama in the copper-rich Second Region of northern Chile. The remaining 49 percent is owned by the state-owned copper enterprise Corporación Nacional del Cobre de Chile (CODELCO). The El Abra operation, which began commercial production in the second half of 1996, consists of a mine-for-leach, open-pit mining operation that uses three stages of crushing prior to leaching, an on/off leach pad, and an SX/EW operation to produce copper cathode. In 2001, El Abra completed a $70 million project (including our partner s share) to leach uncrushed run-of-mine (ROM) material. The ROM project allows El Abra to maintain tankhouse design capacity. ROM production began in January 2002, with full production from the project achieved in the second half of 2002.

We own approximately 82 percent of the common stock of Sociedad Minera Cerro Verde S.A.A. (Cerro Verde). Compañia de Minas Buenaventura S.A., a long-established Peruvian mining concern, owns approximately 9 percent and the employees of Cerro Verde and other shareholders own approximately 9 percent. The Cerro Verde operation, located approximately 30 kilometers southwest of Arequipa, Peru, consists of two open pits, Cerro Verde and Santa Rosa, a heap-leach operation and an SX/EW operation to produce copper cathode. The ore is processed through primary, secondary and tertiary crushers and placed on a leach pad after agglomeration.

Until the fourth quarter of 1998, we produced copper concentrate from two underground mines and a concentrator located near Copiapó, Chile, through our wholly owned Chilean subsidiary, Compañía Contractual Minera Ojos del Salado (Ojos del Salado). We suspended operations indefinitely at Ojos del Salado in October 1998, resulting in a reduction of more than 22,000 tons of annual copper production. The Ojos del Salado operations remain on care-and-maintenance status.

In 2002, we produced a total of 343,500 tons of cathode copper at our SX/EW facilities in South America, compared with 324,700 tons in 2001 and 296,100 tons in 2000. Our total annual capacity of electrowon copper cathode production currently is 248,000 tons at El Abra and 95,000 tons at Cerro Verde.

Manufacturing and Sales Segment

We own and operate a copper smelter in Miami, Arizona, and, through Chino Mines Company, a two-thirds interest in the Chino smelter in Hurley, New Mexico. In January 2002, the Chino smelter was temporarily closed. We smelt virtually all of our share of our U.S. copper concentrate production and, depending on market circumstances and internal production requirements, some concentrate production from Candelaria. In addition, we may purchase concentrate to keep our smelters operating at efficient levels.

In September 1999, we suspended operations at our Hidalgo smelter in Hidalgo County, New Mexico, due to a general lack of concentrate availability in the United States and depressed copper market fundamentals (this suspension was coincident with the closure of the Metcalf concentrator as previously discussed). As a result of the successful acquisition of Cyprus Amax and the decision to convert Morenci to a mine-for-leach operation, we concluded that Hidalgo would likely not be operated in its historic configuration in the foreseeable future. Accordingly, a pre-tax write-down of the Hidalgo assets of $201.5 million was taken in 1999. However, it was anticipated at the time that Hidalgo may have a future use for sulfuric acid production for the Company s leach operations. In December 2002, the Company recognized an impairment charge to write-down Hidalgo s assets by an additional $12.9 million (before and after taxes). As a result of the Company s ability to use acid more efficiently and an updated assessment of PDMC s long-term acid production and consumption balance, the Company determined that Hidalgo probably will not be reconfigured to produce acid as originally anticipated and that the net book value of Hidalgo assets probably would not be recovered. Hidalgo s power facilities will continue to generate electricity when needed, and the facility will continue to be a backup alternative as a reliable producer of acid if conditions warrant. The remaining Hidalgo assets were written down to their estimated fair value. The Company also recognized a $7.0 million (before and after taxes) charge for the estimated remaining costs of its closure obligation at Hidalgo.

We refine our share of anode copper production from our smelters at our refineries in El Paso, Texas, and Miami, Arizona. During 2002, 2001 and 2000, the El Paso refinery operated significantly below capacity due to the late 1999 third quarter closing of the Hidalgo smelter. The closure of the Hidalgo smelter resulted not only in a curtailment of operations

at the El Paso refinery, but also a reduction of approximately 200 refinery jobs. Our Miami refinery has an annual production capacity of about 200,000 tons of copper cathode, and the El Paso refinery has an annual production capacity of about 450,000 tons of copper cathode. The total combined capacity of about 650,000 tons of electrolytic copper per year is sufficient to refine all the anode copper we produce for our account at our operating smelters, as well as anodes from other customers that we refine on a toll basis. As a result of production curtailments announced in the fourth quarter of 2001, the Miami refinery temporarily was closed. Our refineries also produce copper sulfate, nickel sulfate, copper telluride, and autoclaved slimes material containing gold, silver, selenium, platinum and palladium.

We are the world s largest producer of continuous-cast copper rod, the basic feed for the electrical wire and cable industry. Most of our refined copper, and additional purchased copper, is converted into rod at our continuous-cast copper rod facilities in El Paso, Texas; Norwich, Connecticut; Miami, Arizona; and Chicago, Illinois. Our four plants have a collective annual capacity to convert more than 1.1 million tons of refined copper into rod and other refined copper products.

Primary Molybdenum Segment

See United States Mines map on page 3 for the location of our molybdenum mines.

Phelps Dodge owns the underground Henderson molybdenum mine near Empire, Colorado. The operation consists of an underground block-caving mine where molybdenite ore is mined and transported to a conventional sulfide concentrator. The concentrator is capable of operating at a rate of 32,000 tons of ore per day, producing molybdenum disulfide concentrate containing up to 58 percent molybdenum. Most of the concentrate is shipped to our Fort Madison roasting and chemical processing facility in Iowa where a number of different high-purity products are made for final sale to customers. A portion of Henderson s production is further refined and sold to customers as molysulfide. In 1999, Henderson s mine was modernized (i) to replace a 20-year old underground and surface rail transportation system with a modern conveyor and (ii) to develop a new production level using more efficient high-lift caving methods.

In May 2000, as a result of an oversupply of molybdenum and continued low prices in the world market, Phelps Dodge announced a plan to curtail molybdenum production by approximately 20 percent and reduce its Henderson workforce by approximately 130 workers. In 2002, the previously announced production curtailment remained essentially in place.

Phelps Dodge also owns the Climax molybdenum mine near Leadville, Colorado. The operation consists of both an underground and open-pit mine, and a 16,000 ton-per-day concentrator. The Climax molybdenum mine had been placed on care-and-maintenance in 1995 by the predecessor owner. At year-end 2002, as well as at the acquisition, we expected to bring Climax into production concurrent with the exhaustion of the Henderson molybdenum mine reserves for continued long-term primary molybdenum supply for the chemicals business. The property occupies more than 14,000 acres.

Phelps Dodge processes molybdenum concentrates at its conversion plants in the United States and Europe into such products as technical grade molybdic oxide, ferromolybdenum, pure molybdic oxide, ammonium molybdates and molysulfide. The Company operates molybdenum roasters at Green Valley, Arizona; Fort Madison, Iowa; and Rotterdam, The Netherlands.

The Fort Madison, Iowa, facilities consist of two molybdenum roasters, a sulfuric acid plant, a metallurgical (technical oxide) packaging facility, and a chemical conversion plant, which includes a wet chemicals plant and sublimation equipment. In the chemical plant, molybdic oxide is further refined into various high-purity molybdenum chemicals for a wide range of uses by chemical and catalyst manufacturers. The Fort Madison facilities produce ammonium dimolybdate, pure molybdic oxide, ammonium heptamolybdate, ammonium octamolybdate, sodium molybdate, sublimed pure molybdic oxide and molysulfide.

The Rotterdam conversion plant consists of a molybdenum roaster, sulfuric acid plant, a metallurgical packaging facility and a chemical conversion plant. The plant produces metallurgical products primarily for third parties. Ammonium dimolybdate and pure molybdic oxide are produced in a wet chemical plant.

We also produce ferromolybdenum and molysulfide at our conversion plant located in Stowmarket, United Kingdom, both for European and worldwide customers. The plant is operated both as an internal and external customer tolling facility.

Worldwide Copper Production by Source, Other Metal Production and Sales Data, and Manufacturing and Sales Production

The following tables show our worldwide copper production by source for the years 1998 through 2002; aggregate production and sales data for copper,

gold, silver, molybdenum and sulfuric acid from these sources for the same years; annual average copper and molybdenum prices; and production from our smelters and refineries. Major changes in operations during the five-year period included:

completion of the run-of-mine leach project at El Abra in 2002;

curtailment of Chino operations beginning in the 1998 fourth quarter, followed by temporary shut-down of the concentrator in March 2001 and temporary closure of the mine and smelter in January 2002;

temporary closure of the Miami mine and refinery in January 2002;

curtailment of mill throughput at Sierrita and Bagdad to approximately one-half capacity in January 2002;

conversion of Morenci operations to mine-for-leach during 1999 and 2000, with completion in the 2001 first quarter;

partial curtailment of Henderson operations beginning in the 2000 second quarter;

acquisition of Cyprus Amax on October 16, 1999 (the primary assets acquired included the Bagdad, Sierrita, Miami, El Abra and Cerro Verde copper mines; the Henderson and Climax molybdenum mines; a copper smelter, refinery and two rod plants; three molybdenum roasting operations and four molybdenum conversion facilities);

permanent closure of Morenci s Metcalf concentrator at the end of 1999;

temporary closure of the Hidalgo smelter facilities in September 1999;

acquisition of Cobre in February 1998 followed by suspension of underground mining in October 1998 and the remaining facilities in March 1999;

suspension of operations at Ojos del Salado in October 1998; and

completion of the Southwest solution extraction project at Morenci in the 1998 third quarter.

Phelps Dodge Copper Production Data, by Source (a)
(thousand tons)

	2002	2001	2000	1999	1998
Material mined (b)					
Morenci	248,505	281,474	274,871	297,872	288,200
Bagdad	42,912	63,680	69,101	16,233	
Sierrita	23,066	60,869	75,319	15,875	
Miami		32,702	46,446	13,787	
Chino	220	59,277	61,519	44,562	117,432
Cobre				4,558	15,763
Tyrone	45,515	73,990	113,937	113,422	108,359
Candelaria	109,211	126,509	128,464	139,886	131,155
Ojos del Salado					1,336
Cerro Verde	75,982	68,685	61,400	11,459	
El Abra	76,831	82,737	67,786	10,029	
Total material mined	622,242	849,923	898,843	667,683	662,245
Less minority participants shares (c):					
Morenci	37,276	42,220	41,231	44,681	43,230
Chino	73	19,758	20,506	14,854	39,144
Candelaria	21,842	25,302	25,693	27,977	26,231
El Abra	37,647	40,541	33,215	4,914	
Net Phelps Dodge share	525,404	722,102	778,198	575,257	553,640
Mill ore processed					
Morenci		4,301	26,698	38,283	47,108
Bagdad	19,783	31,667	29,846	6,211	
Sierrita	21,439	38,133	38,319	8,046	
Chino		3,109	13,889	16,056	16,431
Cobre				654	4,291
Candelaria	28,507	27,365	26,165	22,405	24,432
Ojos del Salado					1,210
Total mill ore processed	69,729	104,575	134,917	91,655	93,472
Less minority participants shares (c):					
Morenci		645	4,004	5,742	7,066
Chino		1,036	4,630	5,352	5,477
Candelaria	5,701	5,473	5,233	4,481	4,886
Net Phelps Dodge share	64,028	97,421	121,050	76,080	76,043

See footnote explanations on page 13.

Phelps Dodge Copper Production Data, by Source (a)
(thousand tons)

	2002	2001	2000	1999	1998
Leach ore placed in stockpiles					
Morenci	241,955	258,202	236,696	250,680	232,120
Bagdad	328	696			
Sierrita	170	14,347	18,386	4,307	
Miami		10,208	11,032	2,379	
Chino	198	31,009	12,875	12,400	44,734
Tyrone	34,835	27,513	51,446	55,693	55,086
Cerro Verde	24,096	23,436	17,833	2,642	
El Abra	71,224	75,875	62,042	8,678	
Total leach ore placed in stockpiles	372,806	441,286	410,310	336,779	331,940
Less minority participants shares (c):					
Morenci	36,293	38,729	35,503	37,602	34,817
Chino	66	10,336	4,292	4,133	14,911
El Abra	34,900	37,179	30,401	4,252	
Net Phelps Dodge share	301,547	355,042	340,114	290,792	282,212
Grade of ore mined - percent copper					
Morenci - mill		0.78	0.71	0.68	0.68
Morenci - leach	0.28	0.30	0.26	0.26	0.26
Bagdad - mill	0.43	0.43	0.43	0.43	
Bagdad - leach	0.29	0.28			
Sierrita - mill	0.32	0.29	0.29	0.29	
Sierrita - leach	0.21	0.22	0.20	0.20	
Miami - leach		0.41	0.71	0.52	
Chino - mill		0.79	0.83	0.59	0.68
Chino - leach	0.29	0.48	0.22	0.25	0.18
Cobre - mill				1.00	0.79
Tyrone - leach	0.35	0.29	0.26	0.28	0.26
Candelaria - mill	0.84	0.96	0.93	1.22	1.07
Ojos del Salado - mill					1.64
Cerro Verde - leach	0.55	0.53	0.59	0.78	
El Abra - leach	0.50	0.60	0.56	0.79	
Average copper grade - mill	0.56	0.54	0.59	0.75	0.80
Average copper grade - leach	0.35	0.38	0.33	0.28	0.25

See footnote explanations on page 13.

Phelps Dodge Copper Production and Sales Data, by Source (a)
(thousand tons)

	2002	2001	2000	1999	1998
Copper Production					
Morenci:					
Concentrate		23.5	132.3	195.2	247.2
Electrowon	412.7	368.1	284.7	284.7	275.8
Bagdad:					
Concentrate	68.4	118.1	111.5	22.3	
Electrowon	15.6	10.5	11.8	2.9	
Sierrita:					
Concentrate	60.0	94.6	95.9	19.7	
Electrowon	16.2	26.3	26.5	5.8	
Miami:					
Electrowon	10.5	44.1	59.3	13.2	
Bisbee:					
Precipitate	0.1	0.2	0.1	0.1	0.6
Chino:					
Concentrate and precipitate		18.3	87.0	74.3	85.5
Electrowon	53.8	59.9	48.6	55.8	72.4
Cobre:					
Concentrate				6.6	34.2
Tyrone:					
Electrowon	69.9	76.4	79.3	80.1	82.6
Candelaria:					
Concentrate	219.5	243.2	224.7	250.1	236.9
Ojos del Salado:					
Concentrate					17.9
Cerro Verde:					
Electrowon	95.3	84.9	78.7	16.2	
El Abra:					
Electrowon	248.2	239.8	217.4	52.8	
Manufacturing and Sales (d)	5.4	3.0	1.2	1.5	(0.4)
Total copper production	1,275.6	1,410.9	1,459.0	1,081.3	1,052.7
Less minority participants shares (c):					
Morenci	61.9	58.8	62.5	72.0	78.4
Chino	17.9	26.1	45.2	43.3	52.6
Candelaria	43.9	48.6	45.0	50.0	47.4
El Abra	121.7	117.5	106.5	25.9	
Manufacturing and Sales (d)	1.4	(0.2)	(0.5)		0.3
Net Phelps Dodge share	1,028.8	1,160.1	1,200.3	890.1	874.0
Copper sales - net Phelps Dodge share from own mines (e):					
Morenci	350.8	333.0	354.4	415.5	445.8
Bagdad	92.3	132.9	123.3	25.2	
Sierrita	83.8	125.1	122.4	25.6	
Miami	15.2	46.6	59.2	13.2	
Bisbee	0.1	0.3	0.1	0.1	0.6

Chino	35.8	52.1	90.4	89.3	105.6
Cobre				6.6	33.8
Tyrone	69.9	76.4	79.2	81.7	82.8
Candelaria	174.6	190.1	181.5	187.4	190.2
Cerro Verde	94.9	84.7	78.8	16.5	
El Abra	129.6	126.7	109.5	29.3	
Ojos del Salado					18.2
Manufacturing and Sales (d)	4.1	2.9	1.8	1.5	(0.7)
Total copper sales - net Phelps Dodge share from own mines	1,051.1	1,170.8	1,200.6	891.9	876.3
Purchased copper:					
Morenci				0.1	0.1
Candelaria	35.8	37.0	5.0		3.7
El Abra	56.5	5.8			
Manufacturing and Sales (d)	350.7	418.4	490.0	289.6	305.5
Total purchased copper	443.0	461.2	495.0	289.7	309.3
Total sales	1,494.1	1,632.0	1,695.6	1,181.6	1,185.6

See footnote explanations on page 13.

Phelps Dodge Other Metal Production and Sales (a)

	2002	2001	2000	1999	1998
Gold (thousand ounces)					
Total production	132	140	151	173	185
Less minority participants shares (c)	24	31	33	37	36
Net Phelps Dodge share	108	109	118	136	149
Sales (e)	136	77	120	138	159
Silver (thousand ounces)					
Total production	2,582	3,773	4,985	4,284	3,566
Less minority participants shares (c)	225	490	657	877	713
Net Phelps Dodge share	2,357	3,283	4,328	3,407	2,853
Sales (e)	3,317	2,504	4,813	3,415	3,251
Molybdenum (thousand pounds)					
Primary Molybdenum:					
Henderson	20,517	18,603	19,727	1,718	
By-product	24,448	36,912	31,751	6,585	1,369
Total production	44,965	55,515	51,478	8,303	1,369
Less minority participants shares (c):					
Chino		50	419	241	355
Net Phelps Dodge share	44,965	55,465	51,059	8,062	1,014
Sales - Net Phelps Dodge share from own mines (e)	46,665	55,105	57,988	11,391	1,050
Purchased molybdenum	7,393	1,609		26	
Total sales	54,058	56,714	57,988	11,417	1,050
Sulfuric acid (thousand tons)					
Total production from copper smelters (f)	748.6	1,236.7	1,231.8	1,172.1	1,222.1
Less minority participants shares (c)	1.6	190.2	186.3	212.5	200.9
Net Phelps Dodge share	747.0	1,046.5	1,045.5	959.6	1,021.2
Sales from copper smelters	14.5	15.9	35.0	625.5	196.1
COMEX copper price per pound (g)	$ 0.72	0.73	0.84	0.72	0.75
LME copper price per pound (h)	$ 0.71	0.72	0.82	0.71	0.75
***Metals Week* - molybdenum dealer oxide mean price per pound (i)**	$ 3.77	2.36	2.56	2.65	3.41

See footnote explanations on page 13.

Phelps Dodge Manufacturing and Sales Production (a)

	2002	2001	2000	1999	1998
Smelters (j)					
Total copper (thousand tons)	243.8	463.5	439.8	267.4	405.8
Less minority participants shares (c)	0.5	36.7	49.5	57.0	60.1
Net Phelps Dodge share	243.3	426.8	390.3	210.4	345.7
Refineries (k)					
Copper (thousand tons)	319.6	502.6	471.2	422.6	429.3
Gold (thousand ounces)	79.0	86.6	52.6	72.9	74.6
Silver (thousand ounces)	1,786.0	3,719.1	3,838.9	3,681.5	2,523.8
Rod (l)					
Total copper (thousand tons)	850.6	879.8	1,153.9	805.1	764.4

Footnotes to tables on pages 9 through 13:

(a) Includes Cyprus Amax production and sales from the time it was acquired on October 16, 1999.

(b) Includes material mined for leaching operations.

(c) Interests in mining joint ventures in which we own more than 50 percent are reported using the proportional consolidation method. Cerro Verde, in which we own 82 percent of its common stock, is reported using the full consolidation method.

(d) Includes smelter production from custom receipts and fluxes as well as tolling gains or losses.

(e) Excludes sales of purchased copper, molybdenum, silver and gold.

(f) Sulfuric acid production results from smelter air quality control operations; sales do not include internal usage.

(g) New York Commodity Exchange annual average spot price per pound cathodes.

(h) London Metal Exchange annual average spot price per pound cathodes.

(i) Annual molybdenum dealer oxide average mean price per pound as quoted in Platts *Metals Week*.

(j) Includes production from purchased concentrates and copper smelted for others on a toll basis.

(k) Includes production from purchased material and copper refined for others on a toll basis.

(l) Includes rod, wire, oxygen-free billets/cakes, scrap and other shapes.

Other Mining Segment

This segment includes our worldwide mineral exploration and development programs, a process technology center that directs its activities at improving existing processes and developing new cost-competitive technologies, and other ancillary operations.

Exploration

Our exploration group s primary objectives are to increase PDMC s reserve base through discoveries and joint ventures and, where appropriate, to diversify into other metals, minerals and geographic areas. Exploration is focused on finding large-scale copper, and copper and gold deposits in the four principal copper-producing regions of the world: southwest USA/Mexico, South American Cordillera, Central Africa, and Australia, as well as in other highly prospective areas. This group operates in over 12 countries and maintains offices in Australia, Brazil, Canada, Chile, India, Indonesia, Mexico, Peru, the Philippines and the United States.

In 2002, Phelps Dodge expended $20.0 million on worldwide exploration, compared with $36.8 million in 2001 and $39.7 million in 2000. Approximately 33 percent of the 2002 expenditures occurred in the United States with 24 percent being spent at our U.S. mines. This compares with 14 percent in 2001 (13 percent at U.S. mine sites) and 23 percent in 2000 (17 percent at U.S. mine sites). The balance of our exploration expenditures was spent principally in Australasia, Brazil, Chile, Mexico, Canada, Peru and Central Africa, including 7 percent at our South American mine sites.

During 2002, exploration efforts continued at our existing copper operations. Work commenced on an underground decline at Candelaria to provide exploration drilling access in 2003 to a high-grade underground zone of mineralization at depth adjacent to the Candelaria open pit. Drilling programs at Tyrone continued to further define two oxide copper deposits situated very near the surface. At our Morenci mine, the first phase drilling of five district targets intersected promising mineralized intercepts.

Environmental permitting continues at our Safford project in eastern Arizona to enable development of the Dos Pobres and San Juan deposits. The two deposits contain an estimated total of 533 million tons of leachable reserves with an ore grade of 0.37 percent copper.

In August 2002, Phelps Dodge announced it had replaced BHP Billiton as option holder under an existing agreement among BHP Billiton, Tenke Mining Corp. and others to acquire a controlling interest and operatorship in the Tenke Fungurume copper/cobalt project in the Democratic Republic of the Congo.

In December 2001, we recorded a charge of $3.9 million to write-off the net book value of the Piedras Verdes project in Sonora, Mexico, as it no longer met our development criteria. In March 2002, Phelps Dodge reached an agreement with Frontera Copper Corporation to sell its interest in the Piedras Verdes project in Mexico. The agreement gave Phelps Dodge $0.5 million in cash plus other consideration, which are subject to a number of conditions, not to exceed $16 million.

In October 2001, Phelps Dodge sold its 50 percent interest in Mineração Serra do Sossego to Companhia Vale do Rio Doce (CVRD) for $42.5 million in cash. Sossego is a copper-gold deposit in the Carajas region of Brazil.

Work on our Ambatovy nickel/cobalt deposit in central Madagascar remains on hold pending resolution of certain regulatory and permitting issues, and evaluation of strategic options. A feasibility study previously estimated mineralized material of 210 million tons at an estimated grade of 1.1 percent nickel and 0.1 percent cobalt.

Process Technology

The objectives of PDMC s process technology center (PTC) in Safford, Arizona, are to enhance and strengthen Phelps Dodge s competitive position in the world copper market. PTC was established in 1996 to provide metallurgical process development capabilities, process optimization services, metallurgical testing and advanced material characterization services to meet the needs of PDMC and its operations. PTC is ISO-9001 certified. The activities at PTC are directed at continuous improvement of existing processes and the development of new cost-competitive technologies, and are an integral part of our *Quest for Zero* program. PTC employs approximately 72 engineers, scientists and technical support staff. The facilities include:

- a large-diameter column leach facility for testing run-of-mine material, which is capable of processing up to approximately 600 tons of ore annually;

a continuous SX/EW test facility capable of producing 1.5 tons of cathode copper per day;

a small-diameter column leach facility with a capacity of 250 individual tests per year for crushed material;

a metallurgical laboratory for the development of biological leaching processes and enhancements and other biological applications; and

a state-of-the-art material characterization laboratory with advanced mineralogy, analytical chemistry and metallography capabilities.

The principal areas of activity include hydrometallurgy, mineral processing (grinding and flotation), material characterization and technical information services. Some of the most important projects and milestones in 2002 were:

The design and construction of a new concentrate pressure leaching demonstration plant at the Bagdad mine. The facility is the first of its kind in the world to use high-temperature pressure leaching to process chalcopyrite concentrates. The technology is proprietary and is covered under a Technology Development Agreement between Phelps Dodge and Placer Dome Inc. The plant is being constructed at a cost of approximately $40 million and is designed to produce 35 million pounds of copper cathode from concentrate annually. Copper recovery is expected to be 98 percent compared with 96 to 97 percent by conventional smelting and refining. The plant will be used to prove this new technology, and related technology, for possible application at other PDMC properties in the future. The plant is scheduled to start production in the second quarter of 2003.

The successful completion of continuous pilot plant testing of a new medium-temperature pressure leaching process for copper concentrate treatment at the Hazen Research facility in Golden, Colorado. This process is designed to minimize acid production and has potential application for the processing of concentrates where sulfuric acid cannot be beneficially used in stockpile or heap leaching operations.

The development of a direct electrowinning technology for use in conjunction with the pressure leaching technology described above.

The continued advancement of proprietary technology for heap and stockpile leaching of low-grade chalcopyrite ores.

The investigation of alternative technologies to reduce the cost of copper electrowinning.

The investigation of alternative sulfuric acid production techniques.

The successful installation and commissioning of a second QemSCAN scanning electron microscope in the second quarter of 2002.

Total expenditures for PTC in 2002 were approximately $13 million, compared with $11 million in 2001 and $9 million in 2000. PDMC intends to advance all of these research and development projects aggressively in 2003.

Other

Additionally, this segment includes our Tohono copper operation in south central Arizona, which includes an SX/EW facility capable of producing copper cathode. The facility is located on lands leased from the Tohono O odham Nation. Although mining of ore ceased in July 1997, production of copper continued from existing leach stockpiles until February 1999 when the facility was placed on care-and-maintenance status. The property has mineralized material for which, at higher copper prices, various alternatives could be considered.

Other Mining Investments

We own a 14.0 percent interest in Southern Peru Copper Corporation (SPCC), which operates two open-pit copper mines, two concentrators, an SX/EW operation, a smelter and a refinery in Peru. SPCC s other principal shareholders are a subsidiary of Grupo Mexico, S.A. de C.V., with a 54.2 percent interest, and Cerro Trading Company, Inc., with a 14.2 percent interest. A total of 17.6 percent interest is publicly held. SPCC s results are not included in our earnings because we account for our investment in SPCC on the cost basis. Based on the composition of SPCC s Board of Directors, Grupo Mexico has majority control and the two principal minority shareholders cannot override Grupo Mexico s decisions. During 2002, we received dividend payments of $4.0 million from SPCC, compared with $4.0 million in 2001 and $3.8 million in 2000.

In May 1997, we acquired an indirect 40 percent voting interest, representing a 26.67 percent economic interest, in a Peruvian zinc mining company, Compañía San Ignacio de Morococha S.A. (SIMSA) and its San Vicente mine. SIMSA s other shareholder with voting shares was the Jesus Arias family. We accounted for our investment in SIMSA on the equity basis. During the fourth quarter of 2001, the investment was written down by $9.1 million due to the impact of low zinc prices on the operation s ability to generate cash flows to cover operational and debt costs and our belief that we could not recover our investment. In November 2002, we sold our interest in SIMSA to the Arias family for $0.2 million.

In March 2000, we sold Cyprus Australia Coal Company, a wholly owned subsidiary that we acquired as part of the Cyprus transaction, to a subsidiary of Glencore International for $150 million in cash.

Ore Reserves

Ore reserves are those estimated quantities of proven and probable material that may be economically mined and processed for extraction of their constituent values. Estimates of our ore reserves are based upon engineering evaluations of assay values derived from sampling of drill holes and other openings. In our opinion, the sites for such samplings are spaced sufficiently close and the geologic characteristics of the deposits are sufficiently well defined to render the estimates reliable. The ore reserve estimates include assessments of the resource, mine, and metallurgical models as well as consideration of economic, marketing, legal, environmental, social and governmental factors.

Phelps Dodge uses several additional factors to determine mine design limits that it believes maximize the value of future cash flows including time-valued concepts to recognize, for example, any elapsed time between mining of overburden and the mining of ore. Our mine designs recognize capital and other expenditures required to extract the ore reserves over the life of the mine. Cutoff grade strategies are implemented to maximize time-valued cash flows. Phelps Dodge believes that its ore reserve calculation methodology is prudent and consistent with appropriate industry standards.

Proven and probable ore reserves at December 31, 2002, and 2001 for each of our operating, curtailed and development properties are summarized as follows:

	Total Reserves Estimated at December 31, 2002 (1)							
				Leachable Reserves				
	Millable Reserves			Crushed Leach		Run-of-Mine (ROM)		Phelps Dodge Interest (%)
	Million Tons	% Copper	% Moly	Million Tons	% Copper	Million Tons	% Copper	
Operating and Curtailed Operations								
Morenci (2)	181.5	0.47		587.7	0.57	2,303.0	0.19	85.0
Bagdad	873.6	0.36	0.02			17.2	0.29	100.0
Sierrita	1,040.9	0.27	0.03			26.7	0.19	100.0
Miami (3)						126.9	0.37	100.0
Chino (3) (4)	187.0	0.62	0.02			263.8	0.42	66.7
Cobre (3) (4)	57.6	0.55				77.8	0.26	100.0
Tyrone (4)						224.5	0.32	100.0
Candelaria (5)	387.0	0.70						80.0
Ojos del Salado (3) (5)	18.7	1.32						100.0
Cerro Verde				198.8	0.66	133.5	0.30	82.0
El Abra				309.3	0.54	281.2	0.27	51.0
Primary Molybdenum:								
Climax (3)	145.2		0.23					100.0
Henderson	170.7		0.21					100.0
Undeveloped Reserves - require substantial capital investments to bring into production								
Cerro Verde	464.0	0.61	0.02					82.0
Other Mining:								
Ajo (6)								100.0
Safford (7)				447.2	0.40	86.1	0.20	100.0

(1) Total reserves estimated (i) are 100% basis, (ii) include only in-situ tonnages, and (iii) do not include stockpiled ores.

(2)

Morenci ore reserves increased from 2001 primarily as a result of additional drilling, completion of the resource model and development of an economic mine plan for the Fairbanks area.

(3) Chino, Cobre, Climax, Miami and Ojos del Salado properties are on care-and-maintenance status with no mining taking place.

(4) Chino, Cobre and Tyrone reserves were reduced from 2001 primarily as a result of new mine plans and new economic parameters.

(5) The Candelaria and Ojos del Salado deposits also contain, respectively, 0.006 ounces and 0.008 ounces of gold per ton. Candelaria reserves increased from 2001 primarily due to additional drilling and remodeling.

(6) Material previously characterized as ore reserves at the Ajo development property were reclassified as mineralized material in 2002 as a result of an updated mine plan and economic assessment.

(7) The Safford property is in the permitting process. Safford ore reserves were reduced from 2001 due to a new mine plan and new economic parameters.

	Total Reserves Estimated at December 31, 2001 (1)							
				Leachable Reserves				
	Millable Reserves			Crushed Leach		Run-of-Mine (ROM)		Phelps Dodge Interest (%)
	Million Tons	% Copper	% Moly	Million Tons	% Copper	Million Tons	% Copper	
Operating and Curtailed Operations								
Morenci	128.7	0.41		468.8	0.60	2,853.0	0.22	85.0
Bagdad	884.9	0.36	0.02			17.7	0.29	100.0
Sierrita	1,052.1	0.27	0.03			62.5	0.19	100.0
Miami						117.6	0.38	100.0
Chino	303.6	0.59				448.8	0.30	66.7
Cobre	132.4	0.73						100.0
Tyrone						434.3	0.29	100.0
Candelaria	375.7	0.83						80.0
Ojos del Salado	18.7	1.32						100.0
Cerro Verde				207.2	0.66	123.3	0.28	82.0
El Abra				353.0	0.55	383.8	0.30	51.0
Primary Molybdenum:								
Climax	145.2		0.23					100.0
Henderson	175.9		0.21					100.0
Undeveloped Reserves - require substantial capital investments to bring into production								
Cobre						98.0	0.35	100.0
Cerro Verde	464.0	0.61	0.02					82.0
Other Mining:								
Ajo (2)	150.0	0.56						100.0
Safford (2)				474.7	0.39	151.6	0.16	100.0

(1) Total reserves estimated (i) are 100% basis, (ii) include only in-situ tonnages, and (iii) do not include stockpiled ores.

(2) The Ajo and Safford properties were at various stages in the permitting process. The current mine plan for Safford is based on an open-pit leach operation. Prior to 2001, material previously characterized as underground ore reserves at Safford has, therefore, been reclassified as mineralized material.

Average Drill-Hole Spacing at Ore Reserve Properties

The following table sets forth the average drill-hole spacing for proven and probable ore reserves by process types:

	As of December 31, 2002			
	Proven (average spacing feet)		Probable (average spacing feet)	
Property	Mill	Leach	Mill	Leach
Morenci	283	283	400	400
Bagdad	190	81	441	323
Sierrita	224	141	339	243
Miami	N/A	200	N/A	300
Chino	141	200	200	283
Cobre	150	200	200	300
Tyrone	N/A	283	N/A	283
Candelaria	115	N/A	230	N/A
Ojos del Salado	82	N/A	164	N/A
Cerro Verde	196	121	444	303
El Abra	N/A	197	N/A	328
Climax	200	N/A	200	N/A
Henderson	65	N/A	290	N/A
Safford	N/A	200	N/A	400

Metallurgical Recovery

The following table sets forth the average expected metallurgical recovery by process type:

	Copper		Molybdenum
	Mill % (a)	Leach % (b)	Mill % (c)
Morenci	80.2	58.4	N/A
Bagdad	85.8	44.4	67.3
Sierrita	84.1	53.0	78.9
Miami	N/A	64.7	N/A
Chino	77.9	53.1	16.9
Cobre	85.5	56.4	N/A
Tyrone	N/A	64.2	N/A
Candelaria	92.0	N/A	N/A
Ojos del Salado	88.3	N/A	N/A
Cerro Verde	84.8	71.5	59.4
El Abra	N/A	65.9	N/A
Climax	N/A	N/A	86.8
Henderson	N/A	N/A	85.8
Safford	N/A	70.0	N/A

(a) Mill recoveries include expected mill and smelter recoveries and an allowance for concentrate transportation losses.

(b) Leach recoveries are the expected total recoveries over multiple leach cycles.

(c) Molybdenum recoveries include mill recoveries and roaster deductions.

Mill and Leach Stockpiles

Stockpiled copper-bearing material that has been removed from the mine, and for which we have reasonable certainty of processing is summarized below:

(in million tons)

	2002				2001			
	Stockpile Material	Contained Copper (%)	Recovery (%)	Recoverable Copper	Stockpile Material	Contained Copper (%)	Recovery (%)	Recoverable Copper
Mill stockpiles:								
100% basis	45	0.46	91.9	0.2	43	0.45	92.2	0.2
Phelps Dodge share				0.2				0.1
Leach stockpiles:								
100% basis	7,745	0.16	11.7	1.4	6,857	0.17	8.3	0.9
Phelps Dodge share				1.2				0.8

Note: We did not have stockpiled molybdenum-bearing material that had been removed from the mine at December 31, 2001 and 2002.

The determination of copper contained in mill and leach stockpiles by physical count is impracticable. We employ reasonable estimation methods to determine such amounts.

Mill Stockpiles

Mill stockpiles contain low-grade ore that has been extracted from the mine and is available for processing to recover the contained copper by milling, concentrating, smelting and refining. The quantity of material delivered to the stockpiles is based on surveyed volumes of mined material and daily production records. Sampling and assaying of blast-hole cuttings determine the estimated amount of copper contained in the material delivered to the mill stockpiles.

Expected copper recovery rates are determined by metallurgical testing. The recoverable copper in mill stockpiles can be extracted into copper concentrate almost immediately upon processing. Estimates of copper contained in mill stockpiles are reduced as material is removed and fed to the mill.

Leach Stockpiles

Leach stockpiles contain low-grade ore that has been extracted from the mine and is available for processing to recover the contained copper through a leaching process. Leach stockpiles are exposed to acidic solutions that dissolve contained copper and deliver the copper in solution to the extraction processing facilities. The quantity of material is based on surveyed volumes of mined material and daily production records. Sampling and assaying of blast-hole cuttings determine the estimated amount of copper contained in material delivered to the leach stockpiles.

Expected copper recovery rates are determined using small-scale laboratory tests, medium-scale column testing (which simulates the production-scale process), historical trends and other factors, including mineralogy of the ore and rock type.

Ultimate recovery of copper contained in leach stockpiles can vary from a very low percentage to over 90 percent depending on several variables including type of processing, mineralogy and particle size of the rock. Although as much as 70 percent of the copper ultimately recoverable may be extracted during the first year of processing, recovery of the remaining copper may take several years.

The estimated recoverable copper contained in stockpiles at each mine follows:

(in million tons)

	December 31,	
	2002	2001
Mill stockpiles:		
Candelaria	0.2	0.2
Leach stockpiles:		
Morenci	0.4	0.4
Bagdad	0.1	
Sierrita	0.1	
Miami	0.1	0.1
Chino	0.4	0.2
Tyrone	0.1	0.1
Cerro Verde	0.1	
El Abra	0.1	0.1
	1.4	0.9
Total	1.6	1.1
Phelps Dodge share	1.4	0.9

Note: The mill stockpiles are expected to be processed late in the Candelaria mine s life as milling capacity is available. The leach stockpiles are expected to be processed over the lives of the respective mines. We began capitalization of costs for mill and leach stockpiles when we had reasonable certainty that the material would be processed. The capitalized costs are evaluated periodically to ensure carrying amounts are stated at the lower of cost or market. (Refer to Notes 1 and 7 to the Consolidated Financial Statements for additional financial information regarding mill and leach stockpiles.)

Our estimated share of aggregate copper and molybdenum ore reserves as of December 31 was as follows:

	2002	2001	2000	1999	1998
Milling reserves (billion tons)	3.4	3.6	4.3	4.2	1.6
Leaching reserves (billion tons)	4.3	5.2	3.8	4.1	3.2
Commercially recoverable copper (million of tons):					
Ore reserves	19.6	22.1	23.1	23.7	13.7
Stockpiles and in-process inventories	1.4	0.9	1.0	0.7	0.8
Total	21.0	23.0	24.1	24.4	14.5
Commercially recoverable molybdenum (billion of pounds)	2.1	2.1	2.2	2.2	

Ore reserves reported by Southern Peru Copper Corporation (SPCC) (in which we hold a 14.0 percent interest) as of December 31, 2002, for its Peruvian properties were approximately 2 billion tons of millable reserves at a grade of 0.68 percent copper and approximately 2 billion tons of leachable reserves at an average grade of 0.20 percent copper. These in-pit reserves are the combined totals for both the Cuajone and Toquepala properties. SPCC is controlled by its majority shareholder, Grupo Mexico. We have relied on SPCC s public filings and have not conducted an independent review of its ore reserves.

Copper and Molybdenum Prices

The volatility of copper and molybdenum prices is reflected in the following table, which gives the high, low and average COMEX price of high-grade copper and the Platts *Metals Week* mean price of molybdenum oxide for each of the last 15 years:

	Cents per pound of Copper COMEX			Dollars per pound of Molybdenum Oxide Platts *Metals Week*		
Year	High	Low	Average	High	Low	Average
1988	165	87	115	4.40	2.98	3.47
1989	160	99	125	3.89	2.44	3.40
1990	138	96	119	3.30	2.52	2.85
1991	120	96	105	2.78	2.08	2.38
1992	116	93	103	2.44	1.82	2.21
1993	107	72	85	2.80	1.82	2.32
1994	140	78	107	17.00	2.68	4.51
1995	146	121	135	17.50	3.90	8.08
1996	131	86	106	5.50	2.90	3.79
1997	123	76	104	4.90	3.52	4.31
1998	86	64	75	4.60	2.00	3.41
1999	85	61	72	2.90	2.48	2.65
2000	93	74	84	2.98	2.15	2.56
2001	87	60	73	2.65	2.15	2.36
2002	78	65	72	8.30	2.40	3.77

Phelps Dodge s reported ore reserves are economic at a three-year historical average COMEX copper price of 76 cents per pound and a three-year historical average molybdenum price of $2.89 per pound (*Metals Week* Mean Dealer Oxide).

Phelps Dodge develops its business plans using a time horizon that is reflective of the historical, moving average for the full price cycle. We currently use a long-term average COMEX price of 90 cents per pound of copper and an average molybdenum price of $3.40 per pound (*Metals Week* Mean Dealer Oxide), along with near-term price forecasts reflective of the current price environment to develop mine plans and production schedules.

The per pound COMEX copper price over the past 10 years, 15 years and 20 years averaged 91 cents, 99 cents and 91 cents, respectively. The per pound *Metals Week* Mean Dealer Oxide molybdenum price over the same periods averaged $3.78, $3.47 and $3.44, respectively.

Mineralized Material

We hold various properties containing mineralized material that we believe could be brought into production should market conditions warrant. Permitting and significant capital expenditures would likely be required before operations could commence at these properties. The deposits are estimated to contain the following mineralized material as of December 31, 2002:

		Milling Material		Leaching Material			Phelps
Property/Deposit	Location	Millions of Tons	% Copper	Millions of Tons	% Copper	% Nickel	Dodge Interest (%)
Ambatovy (1)	Madagascar			210		1.10	100.0
Ajo (2)	Arizona	205	0.50				100.0
Candelaria Norte (3)	Chile	12	2.15				80.0
Cochise/Bisbee	Arizona			276	0.47		100.0
El Abra	Chile	650	0.53	100	0.31		51.0
Lone Star (Safford)	Arizona			1,600	0.38		100.0
Lumwana	Zambia	220	0.83				50.0
Morenci	Arizona			567	0.25		85.0
Niagara (Tyrone)	New Mexico			500	0.29		100.0
Safford	Arizona	330	0.65				100.0
Sanchez (Safford)	Arizona			230	0.29		100.0
Tohono	Arizona	276	0.70	404	0.63		100.0

Note: Mineralized material has been delineated by appropriately spaced drilling and/or underground sampling to support the reported tonnage and average grade of metal(s). Such a deposit does not qualify as an ore reserve until legal and economic feasibility is concluded based upon a comprehensive evaluation of implied unit costs, grade, recoveries and other material factors.

(1) Ambatovy deposit also contains 0.10 percent cobalt.

(2) Material previously characterized as ore reserves at the Ajo development property was reclassified as mineralized material in 2002 as a result of an updated mine plan and economic assessment.

(3) Candelaria Norte is a potential underground mine that would utilize the existing process facilities and infrastructure. The stated tonnage also contains 0.015 ounces of gold per ton.

Sales and Competition

U.S. Mining Operations

The majority of our copper, produced or purchased, at our U.S. operations is cast into rod. Rod sales to outside wire and cable manufacturers constituted approximately 70 percent of PDMC s U.S. sales in 2002, 65 percent in 2001 and 79 percent in 2000. The remainder of our U.S. copper sales are primarily in the form of copper cathode or copper concentrate. Sales of rod and cathode are made directly to wire and cable fabricators and brass mills under contracts principally of a one-year duration. Our rod also is used by our Wire and Cable segment. We generally sell our copper rod and cathode produced at our U.S. operations at a premium over New York Commodity Exchange (COMEX) prices.

South American Mines

The production from our South American Mines is sold as copper concentrate or as copper cathode. Our Candelaria mine sells its production in the form of copper concentrates primarily to copper smelters located in Japan and the rest of Asia under long-term, multi-year contracts or on a spot basis through merchants. In addition, a portion of Candelaria s production is shipped to North America for further processing at our U.S. operations. El Abra produces copper cathodes that are sold primarily under annual or multi-year contracts to Asian or European rod or brass mill customers or to merchants. Cerro Verde produces copper cathode; the majority of which are shipped to our U.S. rod mills for processing. The remainder of Cerro Verde s production is sold under annual contracts to South American customers or to merchants on a spot basis. The copper cathode sold by our international operations generally is sold at a premium over London Metal Exchange (LME) prices. We also sell copper concentrate based on COMEX or LME prices.

Worldwide Copper Mining Operations

From time to time, we engage in hedging programs designed to enable us to realize current average prices for metal delivered or committed to be delivered. We also have entered into price protection arrangements from time to time, depending on market circumstances, to ensure a minimum price for a portion of expected future mine production.

Most of the refined copper we sell is incorporated into electrical wire and cable products worldwide for use in the construction, electric utility, communications and transportation industries. It also is used in industrial machinery and equipment, consumer products and a variety of other electrical and electronic applications.

When we sell copper as rod, cathode and concentrate, we compete, directly or indirectly, with many other sellers including at least two other U.S. primary producers as well as numerous foreign producers, metal merchants, custom refiners and scrap dealers. Some major producers outside the United States have cost advantages resulting from richer ore grades, lower labor costs and in some cases, a lack of strict regulatory requirements. We believe our ongoing programs to contain costs, improve productivity and employ new technologies will significantly narrow these cost advantages and place us in a more competitive position with respect to a number of our international competitors.

Other materials that compete with copper include aluminum, plastics, stainless steel and fiber optics. Our principal methods of competing include pricing, product properties, product quality, customer service and dependability of supply.

Primary Molybdenum Segment

Molybdic oxide is used primarily in the steel industry for corrosion resistance, strengthening and heat resistance. Molybdenum chemicals are used in a number of diverse applications such as catalysts for petroleum refining, lubricants and feedstock for pure molybdenum metal used in electronics. A substantial portion of Phelps Dodge s expected 2003 molybdenum production is committed for sale throughout the world pursuant to annual and/or quarterly agreements based primarily on prevailing market prices one month prior to the time of sale.

The molybdenum market is generally characterized by cyclical and volatile prices, little product differentiation and strong competition. Prices are influenced by production costs of domestic and foreign competitors, worldwide economic conditions, world supply/demand balances, inventory levels, the U.S. dollar exchange rate and other factors. Molybdenum prices also are affected by the demand for end-use products in, for example, the construction, transportation and durable goods markets. A substantial portion of world molybdenum is produced as a by-product of copper mining, which is relatively insensitive to molybdenum price levels. China exports quantities of molybdenum that represent a significant portion of world consumption. China also imports quantities of molybdenum but usually, we believe, in quantities significantly less than it exports. Because of their size, China s net exports can significantly affect the balance of supply and demand, and pricing, in the world molybdenum market. Our estimates place China s molybdenum net exports at approximately 20 to 25 percent of global consumption.

Prices, Supply and Consumption

Worldwide Copper Mining Operations

Copper is an internationally traded commodity, and its prices are effectively determined by the two major metals exchanges COMEX and LME. The prices on these exchanges generally reflect the worldwide balance of copper supply and demand, but are also influenced significantly from time to time by speculative actions and by currency exchange rates.

Copper is a critical component of the world s infrastructure. The demand for copper ultimately reflects the rate of underlying world economic growth, particularly the growth in industrial production, construction and durable goods. Copper s end-use markets reflect its fundamental role in the world economy. Estimated percentages of copper consumption by end-use markets comprise (i) construction 40 percent, (ii) electrical applications 25 percent, (iii) industrial machinery 15 percent, (iv) transportation 10 percent, and (v) consumer products 10 percent. Since 1990, refined copper consumption grew by an estimated compound rate of 2.8 percent to 15 million tons according to published data by the World Bureau of Metals Statistics (WBMS) and PD s estimate for 2002. This rate of increase was slightly higher than the growth of world industrial production, which grew at an estimated compound annual rate of 2.3 percent over the same period. Asian copper consumption, led by China, was particularly strong, increasing by 5.9 percent per year from 1990 through 2002. Asia now represents approximately 43 percent of world refined copper consumption compared with 25 percent for Europe and 25 percent for the Americas. The strong demand for copper in Asia has been driven by the increasing standard of living in this region as well as production of value added products for export to the developed world.

From 1990 through 2002, refined copper production has grown at an average annual rate of 2.9 percent according to WBMS (based on published data through 2001) and PD s estimate for 2002. This growth was encouraged by a number of factors. First, limited investment in new mine production in the latter half of the 1980s coupled with growing demand for copper during that period resulted in market deficits and declining copper inventories that in turn encouraged new investment. Second, an improved investment climate in Latin America, particularly Chile, encouraged investment in this region. In 2002, Latin America represented 44 percent of world mine production, a significant increase from 25 percent in 1990. Third, SX/EW technology made some previously uneconomic resources viable investments.

Copper demand and price tend to follow economic cycles and, therefore, copper price has historically experienced significant fluctuations. Considering the period from 1990 to 2002, the LME price of copper averaged 95 cents per pound, and ranged from a high annual average price of $1.33 per pound in 1995 to a low annual average price of 71 cents per pound in 2002. The COMEX price of copper averaged 95 cents per pound from 1990 through 2002, but has ranged from a high annual average price of $1.35 per pound in 1995 to a low annual average price of 72 cents per pound in 2002.

In 2002, the average COMEX copper price of 72 cents per pound was 1 cent less than the 2001 average price. Continued low prices resulted from weak global economic conditions and a resulting modest surplus of production over consumption. More than 175,000 metric tons of excess metal in the market was delivered into LME and COMEX warehouses, bringing the combined inventories to historically high levels of more than 1.2 million metric tons. Demand for copper remained sluggish in 2002 increasing a modest 1.8 percent from 2001 levels as copper consumption in many regions, particularly the United States, Europe and Japan, remained weak as the result of depressed global economic conditions. Expectations of improvement in global manufacturing diminished as technology, telecommunications and electronics sectors stagnated. Chinese copper demand, however, continued to outpace the rest of the world as government infrastructure projects, an expanding industrial complex and increasing domestic prosperity led to the third year of double digit growth in copper consumption.

World refined copper production declined 1.7 percent in 2002 from 2001 due to a number of announced production curtailments. Beginning in October 2001, world copper producers, including Phelps Dodge, independently announced a series of production curtailments with a combined total of approximately 580,000 metric tons of copper. The cutbacks served to curb production of copper in concentrates and corresponding global primary refined production. As a result, the copper market moved back into balance during the second half of 2002, as evidenced by modest declines in reported LME and COMEX warehouse stocks. The tightened supply chain, however, was not enough to prevent a 150,000 metric ton surplus for the year.

In 2001, the COMEX copper price averaged 73 cents per pound, 11 cents less than the 2000 average price. The decrease in price was the result of a surplus market as modest growth in refined production outpaced weak global demand for metal. The market imbalance resulted in approximately 627,000 metric tons of excess copper being delivered into western world exchange inventories, increasing warehouse stocks to more than 1 million metric tons. The signifi-

cant rise in inventory caused the price to fall below the 70-cent level where it remained for nearly all of the second half of 2001. Weakness in the U.S. and Japanese economies reduced world demand for copper, particularly in the electronics and technology sectors where metal off-take had been expanding. Output from manufacturing industries in the large copper consuming regions of the world were slowed by the economic downturn, especially those heavily dependent on export markets in the United States, Europe and Japan. The lone bright spot in the copper market was China whose economy continued to expand supported by increases in consumer demand, government-funded infrastructure projects, and its acceptance into the World Trade Organization.

The COMEX copper price averaged 84 cents per pound for the year 2000, a 12-cent improvement over the previous year. The increase in price was triggered by deficit market conditions created by robust demand for the metal coupled with lower world copper production growth following the closure of nearly 780,000 metric tons of capacity during 1998 and 1999. After having added nearly 480,000 metric tons during the previous two years, combined Western exchange inventories topped 930,000 metric tons in early March 2000. During the remainder of the year, LME and COMEX inventories declined by approximately 515,000 metric tons to end the year at 415,000 metric tons, a decline of 52 percent from the beginning of the year.

Primary Molybdenum Segment

Molybdenum demand depends heavily on worldwide steel industry consumption and to a lesser extent on chemical applications. During 2002, demand in the United States held steady compared with 2001; however, demand in Europe and Japan declined slightly compared with 2001. Overall global demand decreased slightly in 2002 compared with 2001. We estimate consumption declined approximately 1 percent in 2002. Our estimates for worldwide production indicate an approximate 4 percent decline in 2002 compared with 2001. The decline in 2002 was primarily due to production curtailments at several large copper mines that produce molybdenum as a by-product. Overall, primary molybdenum mines appear to have maintained production cuts, which took place in prior years. The additional production curtailments in 2002 and relatively flat global consumption levels placed the overall molybdenum market in slight deficit for 2002. The molybdenum business and prices improved during the year from 2001 levels as a result of the tight supply market.

Molybdenum prices experienced a steady rise during the first five months of 2002. In the month of June, molybdenum prices spiked hitting a *Metals Week* dealer oxide weekly average high of $7.90 per pound and a monthly *Metals Week* dealer oxide mean price of $6.93 per pound. Molybdenum prices moved downwards in the following months ending at $3.26 per pound for the month of December. *Metals Week* dealer oxide mean prices averaged $3.77 per pound in 2002 compared with $2.36 per pound in 2001. The production curtailments and tightness of supply caused molybdenum prices to improve from their previous low levels. Phelps Dodge received an average realized price of $4.57 per pound in 2002, compared with $3.64 per pound in 2001, reflecting a broad mix of upgraded molybdenum products as well as technical grade molybdic oxide.

Costs

Worldwide Copper Mining Operations

Implied unit cost of copper production measures the all-in cost of each pound of copper produced by PDMC. As the title indicates, this measure is the cost implied by the market price of copper (i.e., LME average spot) for a given period versus PDMC s operating income (loss) for the same period.

There is no established common standard for calculating unit production costs in the copper industry. PDMC s implied unit production costs indicator (which is based on readily accessible, publicly disclosed data) acts as a proxy to enable investors to follow and interpret cost trends over historical periods.

PDMC calculates its all-in operating margin per pound of copper sold by dividing its operating income (loss) excluding special items by the total pounds of copper sold from its own mines for its own account. This results in an all-in operating margin (i.e., inclusive of cost of products sold; depreciation, depletion and amortization; selling and general administrative expense; and exploration and research expense for the segment s operations) that is compared with the market price of copper to render an implied cost of copper production.

In 2002, the full and cash implied unit cost of copper production each decreased 7 cents per pound compared with 2001. In 2002, approximately 3 cents of the cost improvement was due to lower energy costs, and the remainder was primarily due to operational improvements associated with the Company s *Quest for Zero* program.

In 2001, the full and cash implied unit cost of copper production increased 4 and 2 cents per pound, respectively, compared with 2000, primarily due to slightly higher energy costs (approximately 1 cent). The remainder of the increase in the full implied unit cost was primarily due to depreciation expense.

Energy, including electricity, diesel fuel and natural gas, represents a significant portion of the production costs for our operations. During the first quarter of 2001 and much of 2000, our Arizona and New Mexico operations were affected adversely by significantly higher costs for all three.

In response, the Company implemented a power cost stabilization plan in March 2001 that consisted of an additional negotiated firm power contract; the construction of a power co-generation plant in New Mexico; short-term, alternating production curtailments at the Company s Tyrone, Sierrita, Bagdad and Henderson operations; and a partial production curtailment at Chino.

Additionally, to mitigate the Company s exposure to increases in diesel fuel and natural gas prices, we implemented several price protection programs in late 2000 and early 2001 designed to protect the Company against a significant upward movement in energy prices. The Company s diesel fuel price protection program consisted of a combination of purchasing out-of-the-money (OTM) diesel fuel call options and fixed-price diesel fuel swaps for our North American operations. The OTM call options give the holder the right, but not the obligation, to purchase a specific commodity at a pre-determined dollar cost, or strike price. OTM call options are options with a strike price above the prevailing market price for that commodity when purchased.

The OTM diesel fuel call options mitigated a portion of our exposure to volatile markets by capping the cost of the commodity if prices were to rise above the strike price. If the price of diesel fuel is lower than the strike price, the Company has the flexibility to purchase diesel fuel at prices lower than the strike price and the options expire with no value. The swaps allow us to establish a fixed price for a specific commodity product for delivery during a specific future period.

Our natural gas price protection program consisted of purchasing OTM call options or OTM collars for our North American operations. OTM call options capped the commodity purchase cost at the strike price while allowing the Company the ability to purchase natural gas at a lower cost when market prices were lower than the strike price. The purchase of collars (the simultaneous purchase of an OTM call option and the sale of an OTM put option) allows us to establish both a price ceiling and a price floor for natural gas costs.

As a result of the above-mentioned plans and programs, in 2002 and 2001 Phelps Dodge was able to reduce and partially mitigate the impacts of volatile electricity markets and rising diesel fuel and natural gas prices.

Environmental and Other Regulatory Matters

U.S. Mining Operations

Significant Federal Environmental Programs

Our operations in the United States are subject to stringent federal, state and local laws and regulations relating to improving or maintaining environmental quality. Our global operations are also subject to many environmental protection laws in the jurisdictions where we operate. We pursue environmental performance at all of our operations with the same diligence that we pursue financial, health and safety performance. We are committed to pollution prevention and responsible environmental stewardship worldwide.

Environmental regulatory programs create potential liability for our domestic operations, which may result in requirements to perform environmental investigations or corrective actions under federal and state laws, in addition to federal and state Superfund requirements (refer to the discussion of Superfund requirements in OTHER ENVIRONMENTAL MATTERS). Major environmental programs and developments of particular interest are summarized in the paragraphs that follow.

Most air emissions from our domestic operations are subject to regulation under the federal Clean Air Act (CAA) and related state laws. These laws impose permitting, performance standards, emission limits, and monitoring and reporting requirements on sources of regulated air pollutants.

Several of our domestic operations have obtained, or are in the process of obtaining, major source operating permits under Title V of the CAA and related state laws. Facilities with smelters, rod mills, molybdenum roasters and power plants are the primary examples of our operations that are subject to this program. These permits typically do not impose new substantive requirements, but rather incorporate in one permit all existing requirements. However, they can increase compliance costs by imposing new monitoring requirements, such as more frequent emission testing, to demonstrate compliance with existing requirements. The process of developing these comprehensive permits also can bring to light new or previously unknown agency interpretations of existing regulations, which also may increase compliance costs.

At least one of our smelters will be subject to one or more Maximum Achievable Control Technology (MACT) standards under the CAA. These standards do not have immediate compliance dates; instead they allow two or three years after promulgation to provide the opportunity to come into compliance or to reduce

emissions to avoid regulation before the compliance date. For example, the copper smelter MACT standard was issued in 2002, and the compliance date for that standard is June 2005. Other potentially applicable MACT standards are still in development. Therefore, we still are in the process of determining applicability and compliance strategies.

Most discarded materials from our domestic operations are subject to regulation as solid waste under the federal Resource Conservation and Recovery Act (RCRA) and related state laws. These laws impose design, operating, closure and post-closure care requirements on facilities used to store, treat or dispose of solid waste.

Mineral extraction (mining) and beneficiation (the concentration of economic minerals) occurs at our mining operations. The solid wastes uniquely associated with these activities are exempt from hazardous waste regulation. Mineral processing (the alteration of a mineral from one mineralogic state to another) occurs at our smelter, refinery and molybdenum roasting operations. Except for a list of 20 exempt processing wastes (three of which include wastes from copper mineral processing operations), all mineral processing wastes generated at our domestic mining operations are subject to hazardous waste regulation if they exhibit a hazardous waste characteristic or if the U.S. Environmental Protection Agency (EPA) specifically designates them as a listed hazardous waste. In 1998, EPA finalized its supplemental Land Disposal Restriction Phase IV (LDR) rules that imposed regulation on hazardous mineral processing wastes that are stored before they are recycled or disposed. This final LDR rule also subjects mineral processing wastes that exhibit a hazardous waste characteristic to stringent treatment standards if the materials are disposed on land. A portion of the LDR rule was judicially vacated on appeal. While EPA s final LDR rule likely will require us to continue to make expenditures to manage hazardous mineral processing wastes, it is not possible to determine the full impact on us of the new LDR requirements until the requirements are fully adopted and implemented.

The federal Emergency Planning and Community Right-to-Know Act was expanded in 1997 to cover mining operations. This law, which has applied to other Phelps Dodge businesses for more than a decade, requires companies to report to EPA the amount of certain materials managed in or released from their operations each year. Annually, we report the volume of naturally occurring minerals and other substances that we managed during the previous year once the usable metals were extracted. These materials are very high in volume and how they are managed is covered by existing regulations and permit requirements.

The federal National Pollutant Discharge Elimination System (NPDES) program requires a permit for the point source discharge of pollutants to surface waters that qualify as waters of the United States. Although most states have received authorization to implement this program in lieu of EPA, New Mexico has not received such authorization and therefore the NPDES permit program in New Mexico continues to be implemented primarily by EPA. On December 5, 2002, Arizona obtained authorization to implement the NPDES permit program in the state. Colorado has maintained authorization of the NPDES program for several years. The NPDES permit program also regulates the discharge of storm water runoff from active and inactive mines and construction activities. EPA and authorized states have issued general permits that cover discharges from active and inactive mines. We likely will continue to have to make expenditures to comply with the NPDES permit program, especially as the program continues to expand as applied to storm water discharges.

Significant Arizona Environmental and Reclamation Programs

The Arizona Department of Environmental Quality (ADEQ) has adopted regulations for its aquifer protection permit (APP) program that replaced the previous Arizona groundwater quality protection permit regulations. Several of our properties continue to operate pursuant to the transition provisions for existing facilities under the APP regulations. The APP regulations require permits for certain facilities, activities and structures for mining, concentrating and smelting. The APP requires compliance with aquifer water quality standards at an applicable point of compliance well or location. The APP also may require mitigation and discharge reduction or elimination of some discharges. Existing facilities operating under the APP transition provisions are not required to modify operations until requested by the state of Arizona, or unless a major modification at the facility alters the existing discharge characteristics. We have received an APP for our Morenci operations, for portions of our Bagdad and Miami mines, for the sewage treatment facility at Ajo, and for a closed tailing pile in Clarkdale, Arizona. We have also conducted groundwater studies and submitted APP applications for several of our other properties and facilities, including the Bagdad, Sierrita and Miami mines, our Safford development property and Ajo, Copper Queen and United Verde branches. We will continue to submit all required APP applications for our remaining properties and facilities, as well as for any new properties or facilities. We do not know what the APP requirements are going to be for all existing and new facilities and, therefore, it is not possible for us to estimate costs associated with those requirements. We are likely to continue to have to make expenditures to comply with the APP program.

An application for an APP requires a description of a closure strategy to meet applicable groundwater protection requirements following cessation of operations and a cost estimate to implement the closure strategy. An APP may specify closure requirements, which may include postclosure monitoring and maintenance requirements. A more detailed closure plan must be submitted within 90 days after a permittee notifies ADEQ of its intent to cease operations. A permit applicant must demonstrate its financial capability to meet the costs required under the APP, including closure costs.

Portions of the Company s Arizona mining operations that operated after January 1, 1986, also are subject to the Arizona Mined Land Reclamation Act (AMLRA). AMLRA requires reclamation to achieve stability and safety consistent with post-mining land use objectives specified in a reclamation plan. Reclamation plans require approval by the State Mine Inspector and must include a cost estimate to perform the reclamation measures specified in the plan. Financial assurance must be provided under AMLRA covering the estimated cost of performing the reclamation plan.

Under both APP regulations and AMLRA, a publicly traded company may satisfy the financial assurance requirements by showing that its unsecured debt rating is investment grade and that it meets certain requirements regarding assets in relation to the estimated closure and post-closure cost and reclamation cost estimates. If this test is not met, the permittee must provide an alternative form of financial assurance that meets the requirements of the applicable regulations or that is approved by ADEQ or the State Mine Inspector, as applicable. The Company s Arizona operations have met the applicable financial assurance requirements by supplying a demonstration of the Company s investment-grade bond rating.

At December 31, 2002 and 2001, we had accrued closure costs of approximately $43 million and $38 million, respectively, for our Arizona operations. The amount of financial assurance currently provided under both regulatory programs is approximately $115 million. If the Company s bond rating falls below investment-grade, the Arizona mining operations would be required to supply financial assurance in another form.

Cyprus Tohono Corporation (Cyprus Tohono), a wholly owned subsidiary of Cyprus Amax, leases lands on the Tohono O odham Indian Nation (the Nation). The leased lands include the site of a mining operation, currently on care-and-maintenance status, comprising an open pit, underground mine workings, leach and non-leach rock stockpiles, tailing and evaporation ponds, SX/EW operations, and ancillary facilities. Many of these facilities are covered by Mine Plans of Operations (MPOs) that were issued by the federal Bureau of Land Management (BLM). The leases and MPOs impose certain environmental compliance, closure and reclamation requirements upon Cyprus Tohono. The closure and reclamation requirements under the leases require action to be taken upon termination of the leases, which currently expire between 2012 and 2017, unless terminated earlier in accordance with the terms of the leases. Preliminary studies indicate that closure and reclamation requirements, excluding the potential Superfund environmental response costs discussed in OTHER ENVIRONMENTAL MATTERS, are estimated to cost $5.0 million.

The Nation, along with several federal agencies, have notified Cyprus Tohono of groundwater quality concerns and concerns with other environmental impacts of historical mining operations. In 2001, Cyprus Tohono conducted additional groundwater investigations at the site. Analytical results from samples taken from newly installed groundwater monitoring wells show contaminants above primary or secondary drinking water standards. A neighboring Native American village s water supply has been contaminated with sulfate. Cyprus Tohono is providing an alternative supply to the village and has installed two new water wells for the village. A pipeline to connect the two new water wells to the village water system was completed in 2003. The cost of the new wells was $175,000; the cost to complete the pipeline to the village was approximately $175,000.

The Company s historic United Verde Mine has obtained an APP for closure of a tailing pond located near Clarkdale, Arizona, and is awaiting approval of an APP for existing mine water discharge containment facilities at the mine near Jerome, Arizona. The tailing pond has not received tailing discharges since the early 1950s, but has received discharges of municipal sewage effluent from the town of Clarkdale since the late 1970s. Closure work under the APP for the tailing pond has been partially completed, but the remaining work has not been completed pending the issuance of a stormwater discharge permit under the Clean Water Act for construction of a related development project. Construction of improvements under the proposed APP for the mine are expected to begin following issuance of the APP, and implementation of the plan under the proposed APP may be used to partially address the claims asserted by EPA and the Department of Justice as described in Item 3 of the Legal Proceedings section. A voluntary remediation project also is under way under supervision of ADEQ at the nearby historic Iron King mine to treat potential discharges of acidic water from an adit. Additional work may be required at historical mine workings in the district that are owned by the Company to satisfy requirements under storm water discharge permits. At the United Verde Mine, APP costs are estimated to be

$13.6 million; at the Clarkdale tailing, APP costs are estimated to be $12.2 million; and at the Iron King Mine, voluntary remediation costs are estimated to be $2.2 million. These amounts, totaling $28.0 million, are included in environmental reserves.

Significant New Mexico Environmental and Reclamation Programs

Mining and smelting operations with leaching, tailing ponds, surface impoundments and other discharging facilities in New Mexico are subject to regulation under the New Mexico Water Quality Act and Water Quality Control Commission (WQCC) Regulations. The Chino, Cobre and Tyrone mines and the Hidalgo smelter each have obtained multiple discharge permits for their operations, which specify operational, monitoring and notification requirements. These permits are issued for five-year terms and require renewal following the end of each permit term. The WQCC Regulations authorize the New Mexico Environment Department (NMED), which administers the discharge permit program, to require the submission of closure plans showing how applicable discharge permit requirements will be met following closure. Under certain circumstances, NMED also may require submission and approval of abatement plans to address the exceedance of applicable water quality standards.

Further, Chino, Cobre, Tyrone and Hidalgo must submit closure plans for their operations. Hidalgo has an approved closure plan under its discharge permit. The three mines have submitted closure plans, which have been combined with closeout plans under the New Mexico Mining Act (NMMA), as discussed below. The proposed closure plans currently are subject to approval by NMED as part of separate discharge permits for closure for each of the three operations that would supplement the existing discharge permits (hereinafter referred to as closure permits). The proposed closure permits contain a number of permit conditions that would modify the proposed closure plans. Chino Mines Company and NMED reached agreement in December 2001 on proposed closure permit conditions presented at a public hearing in February 2002. On January 23, 2003, NMED s hearing officer issued a decision approving the closure permit as proposed by NMED and Chino, with minor changes. NMED issued a permit consistent with the hearing officer s decision on February 24, 2003. An appeal has been filed by a local environmental group. Phelps Dodge Tyrone, Inc. and NMED were unable to reach agreement on permit terms before a public hearing held in May 2002, and presented competing permit proposals. Other parties who participated in the public hearing presented their own proposals. On March 7, 2003, Tyrone received the hearing officer s decision on its permit, which generally adopted NMED s proposal. On April 2, 2003, Tyrone filed an appeal of the hearing officer s decision with the WQCC. NMED issued a permit in accordance with the hearing officer s decision on April 8, 2003, which Tyrone also expects to appeal. Cobre Mining Company and NMED also have not reached agreement on the terms of a closure permit. The closure permit for Cobre Mining Company does not require a public hearing, and may be issued by NMED at any time.

Chino, Cobre and Tyrone also are subject to permit requirements under NMMA, which was passed in 1993. Following adoption of the New Mexico Mining Act Rules (NMMAR) in 1994, Chino, Cobre and Tyrone received initial permits as existing mining operations under NMMAR in 1997. These permits require revisions to incorporate approved closeout plans, which consist of plans for reclamation of the mining operations to achieve a self-sustaining ecosystem or an approved post-mining land use following cessation of operations at a mine. Existing mining operations may seek a waiver of these reclamation standards for open pits and waste units based upon a demonstration that achieving these standards is technically or economically infeasible or environmentally unsound, as long as measures will be taken to meet air and water quality standards following closure.

NMMAR originally required approval of a closeout plan for an existing mining operation by December 31, 1999, based upon an extension granted by the Director of the Mining and Minerals Division (MMD). NMMAR subsequently was amended to extend the deadline for closeout plan approval until December 31, 2001, and later to October 1, 2002. NMMAR contains a requirement that NMED must provide MMD with a determination that a closeout plan meets applicable environmental standards, including air and water quality standards, before MMD can approve the closeout plan. NMED s policy is to issue this determination after it has issued closure permits for the facility that submits the closeout plan. In early 2001, Chino, Cobre and Tyrone submitted comprehensive closure/closeout plans (CCPs) to both NMED and MMD intended to address the requirements of both the WQCC Regulations and NMMAR. Approval of the CCPs under NMMAR would require the granting of waivers by MMD as authorized under NMMAR. The CCPs were the subject of the public hearings before NMED for Chino and Tyrone, as discussed above.

As of October 1, 2002, NMED had not issued closure permits for Chino, Cobre or Tyrone. Consequently, as of October 1, 2002, MMD had not approved closeout permits for these three mines. As discussed in Item 3 of the Legal Proceedings section, MMD issued Notices of Violation (NOVs) to Chino, Cobre and Tyrone because the three mines did not obtain approved closeout plans by the October 1, 2002, deadline. The NOVs were modified by the Mining Commission following a public hearing to set new deadlines for closeout plan approval tied to NMED permit actions.

Based on NMED s permit actions, closeout plan approval for Chino is now due by September 24, 2003, and the closeout plan approval date for Tyrone should be about April 8, 2004. The closeout plan approval deadline for Cobre will be nine months from the date of NMED s permit issuance, which is currently pending.

NMMAR contains specific requirements regarding financial assurance that must be provided to MMD to assure that sufficient funds would be available to MMD to carry out the closeout plan in the event of a default by the permittee. NMED also may require financial assurance under the WQCC Regulations. The financial assurance requirements are based upon the net present value of estimated costs to carry out the requirements of the closure permit and the approved closeout plan, assuming the state would hire a third-party contractor to conduct the work. Actual reclamation costs may differ significantly from the costs estimated under the permits due to advances in technology and reclamation techniques and opportunities to prepare each site for more efficient reclamation through careful development of the site over time. Consequently, the estimated costs under the permits are higher than the cost the Company would be expected to incur if the Company performed the work.

The CCPs submitted in early 2001 contained cost estimates of approximately $100 million for Chino, $121 million for Tyrone, and $9 million for Cobre, based upon unescalated and undiscounted capital and operating costs over a 30-year operating period. The closure permit negotiated by NMED and Chino Mines Company and approved by the NMED hearing officer has an estimated cost of approximately $391 million, based upon third-party unescalated and undiscounted capital and operating costs over a 100-year operating period. This cost estimate will be adjusted to include the cost of technical studies required under the permit conditions after a cost estimate for those costs has been approved by NMED. The Company s two-thirds share of NMED s $391 million estimate is approximately $261 million and our joint venture partner s cost share is approximately $130 million. We estimate total costs to achieve the closure standards required by NMED to be approximately $261 million. The Company s cost estimate to achieve the New Mexico closure standards is approximately one-third lower than the financial assurance cost estimate as a result of the Company s historical cost advantages, savings from the use of the Company s own personnel and equipment versus third-party contract costs, and opportunities to prepare the site for more efficient reclamation. The financial assurance cost estimate includes approximately $10 million (100 percent basis) of costs the Company has recognized in environmental reserves. The Company s two-thirds share of these costs is approximately $174 million and our joint venture partner s cost share is approximately $87 million. At December 31, 2002 and 2001, we had accrued approximately $8 million and $5 million, respectively, (two-thirds basis) for reclamation at Chino. The NMED cost estimate for Chino is subject to further review, and possible adjustment, by MMD under NMMAR.

NMED estimated the cost to carry out the requirements of its proposed closure permit for Tyrone at approximately $440 million, without discounting or escalation, under NMED s proposal at the May 2002 hearing; Tyrone estimated the cost of its proposal at approximately $328 million, without discounting or escalation over a 100-year operating period. NMED has not yet supplied its proposed cost estimate for Cobre. The proposed terms of the closure permits would require additional studies over the five-year term of the permits to refine the closure plan. The plan requirements and cost estimates may increase or decrease based upon the results of the studies and other factors, including changes in technology, completion of some closure and reclamation work, and inflation.

Based upon NMED s undiscounted financial assurance cost estimates for the Tyrone plan of approximately $440 million, and considering the same cost advantages as indicated in the above discussion regarding Chino, we estimate the Company s costs to achieve the closure standards under that estimate to be approximately $288 million for Tyrone. The Company has not obtained approval from NMED of an estimate of its cost to achieve the closure standards that would be required by the hearing officer s decision. The Company s current cost estimate for Cobre of approximately $9 million will be updated with the issuance of the discharge permit. At December 31, 2002 and 2001, we had accrued closure costs of approximately $27 million and $8 million, respectively, at Tyrone and approximately $2 million at Cobre.

Following NMED s issuance of the closure permits, Chino, Cobre and Tyrone are required to submit proposals for financial assurance based upon the permit requirements and subject to NMED s approval. Under the proposed closure permit terms, the amount of financial assurance may be based upon the net present value of the estimated cost for a third-party to implement the plan, using discount and escalation rates specified in the permit. These amounts are expected to be substantially lower than the undiscounted and unescalated cost estimates. For example, based upon the cost estimate approved by the hearing officer, the financial assurance amount for Chino could be approximately $189 million. This amount is based on annual escalation rates of approximately 3.2 percent for long-term water treatment costs and approximately 3.6 percent for other costs and discount rates of 5 percent for years one through 12 of the plan and 8 percent for years 13 through 100.

NMMAR requires that financial assurance for a closeout plan be approved and put in place before

MMD can approve the closeout plan. Currently, under interim financial assurance required under the terms of their NMED closure permits, Chino and Tyrone have provided approximately $56 million and $58 million of financial assurance, respectively, which is held by NMED. Cobre also has approximately $2 million of financial assurance in place held jointly by NMED and MMD. Following NMED s issuance of the closure permits, and prior to MMD s approval of the closeout plans, Chino, Tyrone and Cobre will be required to provide substantial amounts of additional financial assurance to cover the amounts of the approved cost estimates and may involve material cost depending on the form of financial assurance provided. Hidalgo currently has provided financial assurance in the amount of approximately $11 million under its discharge permit.

In December 1994, Chino Mines Company entered into an Administrative Order on Consent (AOC) with NMED. This AOC requires Chino to perform a Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) quality investigation of environmental impacts and potential risks to human health and the environment associated with portions of the Chino property affected by historical mining operations. The remedial investigations began in 1995 and are still under way, although substantial portions of the remedial investigations are near completion. While some remediation is expected to be required, no feasibility studies have yet been completed, and NMED has not yet issued a record of decision regarding any remediation that may be required under the AOC. The Company s estimated cost is $14.1 million (two-thirds share basis). In addition to work under the AOC, Chino is continuing ongoing projects to place interim caps on inactive tailing ponds to control blowing dust at an estimated cost of $2.5 million (two-thirds share basis) and to excavate and remove copper-bearing sediments from an area known as Lake One for copper recovery in existing leach stockpiles at the mine. The Company s estimated cost for Lake One is $4.3 million (two-thirds share basis). The Company s aggregate reserve for its share of liability under the Chino AOC and for the interim work on the tailing ponds and Lake One is $20.9 million.

At Tyrone, an interim dust control cap has been placed on a historic tailing pile. Tyrone is considering implementing additional measures to address the ponding of storm water that accumulates seasonally on inactive tailing ponds and to reduce financial assurance requirements. Tyrone currently is neutralizing the ponded water. Tyrone continues to operate groundwater corrective action systems under the terms of its NMED discharge permits. The current amount reserved for these items at Tyrone is $17.5 million.

The discharge permit issued by NMED for the Hidalgo smelter contains corrective action requirements for contaminated groundwater near the smelter s closed former wastewater evaporation pond. The evaporation pond has been closed by construction of a soil cap approved by NMED. Impacted groundwater is pumped from a series of wells, treated in a neutralization facility, and discharged to a series of lined impoundments or to an irrigation system. The discharge permit requires a comprehensive groundwater study to characterize groundwater at the site. NMED could require future enhancement of the system based upon the results of the ongoing study.

Primary Molybdenum Segment

Significant Colorado Reclamation Program

Our Climax and Henderson mines in Colorado are subject to permitting requirements under the Colorado Mined Land Reclamation Act, which requires approval of reclamation plans and provisions for financial assurance. These mines have had approved mined land reclamation plans for several years and have provided the required financial assurance to the state of Colorado in the amount of $52.4 million and $10.1 million, for Climax and Henderson, respectively. As a result of adjustments to the approved cost estimates for various reasons, the amount of financial assurance requirements can increase or decrease over time. At December 31, 2002 and 2001, we had accrued closure costs of approximately $19 million and $18 million, respectively, for our Colorado operations.

Other Mining

Some portions of our mining operations located on public lands are subject to mine plans of operation approved by the federal BLM. BLM s regulations include financial assurance requirements for reclamation plans required as part of the approved plans of operation. As a result of recent changes to BLM s regulations, including more stringent financial assurance requirements, increases in existing financial assurance amounts held by BLM could be required. Currently, financial assurance for the Company s operations held by BLM totals $2.7 million.

The Company is investigating available options to provide additional financial assurance and, in some instances, to replace existing financial assurance. The cost of surety bonds, the traditional source of financial assurance, has increased significantly over the past year, and many surety companies are now requiring an increased level of collateral supporting the bonds such that they no longer are economically prudent. Some surety companies that issued surety bonds to the Company are seeking to exit the market for reclamation bonds. The terms and conditions presently available from our principal surety bond provider for reclamation and other types of long-lived surety bonds have made this type of financial assurance economically

impractical. We are working with the impacted state and federal agencies to put in place acceptable alternative forms of financial assurance in a timely fashion.

We also are subject to federal and state laws and regulations pertaining to plant and mine safety and health conditions. These laws include the Occupational Safety and Health Act of 1970 and the Mine Safety and Health Act of 1977. Present and proposed regulations govern worker exposure to a number of substances and conditions present in work environments. These include dust, mist, fumes, heat and noise. We are making and will continue to make expenditures to comply with health and safety laws and regulations.

We estimate that our share of capital expenditures for programs to comply with applicable environmental laws and regulations that affect our mining operations will total approximately $21 million in 2003 and approximately $19 million in 2004; approximately $13 million was spent on such programs in 2002. We also anticipate making significant capital and other expenditures beyond 2004 for continued compliance with such laws and regulations. In light of the frequent changes in the laws and regulations and the uncertainty inherent in this area, we are unable to reasonably estimate the total amount of such expenditures over the longer term, but it may be material. (Refer to the discussion of OTHER ENVIRONMENTAL MATTERS.)

We do not expect that additional capital and operating costs associated with achieving compliance with the many environmental, health and safety laws and regulations will have a material adverse affect on our competitive position relative to other U.S. copper producers. These domestic copper producers are subject to comparable requirements. However, because copper is an internationally traded commodity, these costs could significantly affect us in our efforts to compete globally with those foreign producers not subject to such stringent requirements.

Ownership of Property

U.S. Mining Operations

In the United States, most of the land occupied by our copper mines, concentrators, SX/EW facilities, smelters, refineries, rod mills, and molybdenum roasters or processing facilities generally is owned by, or is located on unpatented mining claims owned by, the Company. Certain portions of our Henderson, Miami, Bagdad, Sierrita, Tyrone, Chino and Cobre operations are located on government-owned land and are operated under a Mine Plan of Operations. The Sierrita operation leases property adjacent to its mine upon which its electrowinning tankhouse facility is located. The current lease agreement expires in the year 2003 and future alternatives, including extension of the lease, are being considered. Cyprus Tohono Corporation holds leases for land, water and business purposes on land owned by the Tohono O odham Indian Nation for its operation that is presently on care-and-maintenance status. Various federal and state permits or leases on government land are held for purposes incidental to mine operations.

South American Mining

At the Candelaria, Ojos del Salado, El Abra and Cerro Verde operations in South America, mine properties and facilities are controlled through mining concessions under the general mining laws of the relevant country. The concessions are owned or controlled by the operating companies in which the Company or its subsidiaries have an ownership interest.

PHELPS DODGE INDUSTRIES

PDI is our manufacturing division comprising two business segments that produce engineered products principally for the global energy, telecommunications, transportation and specialty chemicals sectors. Its operations are characterized by products with significant market share, internationally competitive cost and quality, and specialized engineering capabilities. The two segments are Specialty Chemicals and Wire and Cable. In December 2000, we announced our intention to explore strategic alternatives, including restructuring, selective asset sales, commercial arrangements (including joint ventures) and mergers, for PDI. In May 2001, we terminated the sales process, noting that the then current economic environment was not delivering transactions that offered appropriate value to our shareholders.

Specialty Chemicals Segment

Columbian Chemicals Company and its subsidiaries (Columbian Chemicals or Columbian), our Specialty Chemicals segment headquartered in Marietta, Georgia, is an international producer and marketer of carbon blacks. At Columbian Chemicals, we produce a full range of rubber and industrial carbon blacks in 12 plants worldwide (although our El Dorado, Arkansas, plant is temporarily closed), with approximately 35 percent of our production in North America and the remaining 65 percent at facilities in Europe, Asia and South America. Our rubber carbon blacks improve the tread wear and durability of tires, and extend the service life of many rubber products such as belts and hoses. Our industrial carbon blacks are used in such diverse applications as pigmentation of coatings, inks and plastics; ultraviolet stabilization of plastics; and as conductive insulation for wire and cable. We also maintain sales offices in 11 countries and make use of distributors worldwide.

Extensive research and development is performed at our technology centers located at Marietta, Georgia, and Avonmouth, United Kingdom. These technology centers are responsible for studies specific to both industrial and rubber applications of carbon black. Carbon black product and process development at these technology centers are supported by development work at Columbian s plants worldwide.

Beginning in December 2001, Columbian Chemicals curtailed 54,000 metric tons of annual North American carbon black production at its El Dorado, Arkansas, plant due to significant over-capacity in the U.S. market caused by the economic recession. The facility is expected to reopen when economic conditions improve.

In the second quarter of 2000, we acquired the remaining 40 percent share in the carbon black manufacturing business of Columbian Tiszai Carbon Ltd. in Hungary for $19.0 million, bringing our total interest to 100 percent.

In the first quarter of 2000, we acquired an additional 18 percent ownership in Columbian Carbon Japan, a sales and distribution company serving the Japanese market, bringing our total ownership interest to 68 percent.

In January 1999, we acquired an 85 percent interest in the Korean carbon black manufacturing business of Korea Kumho Petrochemical Co., Ltd., for $76.1 million. This business includes a 110,000 metric-ton-per-year manufacturing plant.

In October 1998, we acquired the Brazilian carbon black manufacturing business of Copebras S.A., a subsidiary of Minorco, for $220 million. This manufacturing facility has an annual production capacity of 170,000 metric tons of carbon black.

In November 1999, our manufacturing facility in Bataan, the Philippines, was permanently closed as it did not have the economies of scale to compete profitably with imports from larger regional producers.

Competition and Markets

The principal competitive factors in the various markets in which our Specialty Chemicals segment competes are product quality, customer service, price, dependability of supply, delivery lead time, breadth of product line, and technical service and innovation.

Columbian Chemicals is among the world s largest producers of carbon black. Approximately 90 percent of the carbon black it produces is used in rubber applications, a substantial portion of which is used in the tire industry. Major tire manufacturers worldwide account for a substantial portion of our carbon black sales. In addition, we maintain a strong competitive position in both the mechanical rubber goods market and the industrial carbon black market based on our commitment to quality, service and technical innovation. Despite ongoing attempts to substitute carbon black with silica, reclaimed rubber or other materials, none has been able to match the cost and performance of carbon black in its principal applications. The closest successful substitute is a silane-treated silica which has made some in-roads in the tire market due to its increased wet traction characteristics for specific applications.

Including Columbian Chemicals, there are a total of five major carbon black producers in the United States, three in Canada, three in western Europe and three in South America. There also are many producers in Asia. The carbon black industry is highly competitive, particularly in the rubber black market.

Raw Materials and Energy Supplies

Carbon black is produced primarily from heavy residual oil, a by-product of the crude oil refining process. At Columbian Chemicals, we purchase substantially all of our feedstock at market prices that fluctuate with world oil prices. Our residual oil feedstock and other raw materials for our specialty chemicals business are purchased from various suppliers. The cost of feedstock is a significant factor in the cost of carbon

black. To achieve satisfactory financial results during periods of high and/or increasing oil prices, we must be able to pass through these high and/or increasing prices to our customers. We do not believe that the loss of any one supplier would have a material adverse effect on our financial condition or on the results of our operations.

Our specialty chemical operations generally use purchased or internally generated electricity and natural gas as their principal sources of energy.

Ownership of Property

Columbian Chemicals owns all property other than the leased land at its Sevalco, Hannover and Korean facilities. This leased land is not material to our overall operations.

Wire and Cable Segment

The Wire and Cable segment, headquartered in Phoenix, Arizona, consists of three worldwide product line businesses comprising magnet wire, energy and telecommunications cables, and specialty conductors.

Magnet wire, the insulated conductor used in most electrical motors, is manufactured in the United States at plants in Fort Wayne, Indiana, and El Paso, Texas. We also manufacture magnet wire at wholly owned subsidiaries in Mureck, Austria, and Monterrey, Mexico. As part of a manufacturing rationalization program aimed at significant cost reductions, our Laurinburg, North Carolina, plant was temporarily closed in 2002 and our Hopkinsville, Kentucky, plant was closed in 2000 and its value was written down by $3.3 million in the second quarter of 2001. The productive assets of our Hopkinsville, Kentucky, plant were moved to other facilities in the United States and Mexico. In 2000, a special, pre-tax charge of $5.8 million was recognized for our wire and cable operations in Austria as a result of the long-term impact of continuing extremely competitive pricing conditions in Europe. Those conditions led to a determination that we should assess the recoverability of our Austrian wire and cable asset values. In addition, we permanently ceased the relatively small production of magnet wire at our company in Venezuela in 1999.

Phelps Dodge International manufactures energy and telecommunication cables for international markets and manufactures products in factories located in 10 countries. We provide management, marketing assistance, technical support, and engineering and purchasing services to these companies. Three of our international wire and cable companies have continuous-cast copper rod facilities (a fourth facility was closed in 1999), and three of our international wire and cable companies have continuous-cast aluminum rod facilities. We have majority interests in companies with production facilities in seven countries Brazil, Chile, Costa Rica, Honduras, Thailand, Venezuela and Zambia. We also have minority interests in companies located in Hong Kong and Thailand, accounted for on the equity basis, and in companies located in Greece and India, accounted for on the cost basis.

In December 1997, we acquired a 60 percent interest in the Brazilian copper and aluminum wire and cable manufacturing business (the Business) of Alcoa Aluminio, S.A. (Aluminio) for $72 million. At that time, the fair value of the Business was $120 million. As part of the purchase agreement, Aluminio was given an optional exit mechanism to sell to the Company all, but not less than all, of its remaining shares in the Business. The agreement stipulated that Aluminio could exercise its option between December 31, 2000, and January 1, 2006. Under the terms of the agreement, the exit price would be the greater of (a) the sum of (i) the aggregate amount of paid in cash by Aluminio to subscribe to capital increases, plus (ii) $48 million, or (b) the value of shareholders equity represented by Aluminio s shares. In January 2001, Aluminio gave the Company notice of its intent to exercise the option. As a result of other commitments by Aluminio under the purchase agreement, the exit price was renegotiated and the transaction to acquire Aluminio s remaining 40 percent interest in the Business closed in March 2001 for $44.8 million. Given the option price at the time of the transaction was equal to fair value, the value of the put option was deminimus.

During the second quarter of 2000, we ceased production at two wire and cable plants in Venezuela due to low forecast plant utilization levels as a result of significantly reduced infrastructure spending in the Latin America region. These plant closures resulted in a special, pre-tax loss of $26.1 million. We also ceased production at our majority-owned telephone cable operation in El Salvador in the fourth quarter of 2000 due to low plant utilization levels as a result of heightened global competition for telecommunication cable. The plant closure resulted in a special, pre-tax loss of $5.5 million. A charge of $7.2 million to miscellaneous income and expense was recognized to reflect the impairment of our 40 percent equity interest in a wire and cable operation in the Philippines. The impairment was based upon an analysis of future cash flows of the operation, continuing economic uncertainty in the Philippines and the erosion of our strategic and operating influence.

During 1999, we converted a small manufacturing facility in Ecuador to a distribution center. Also in 1999, we opened a distribution center in Colombia. In all, we operate distribution centers in nine countries in addition to the United States Guatemala, El Salvador, Honduras, Panama, Puerto Rico, Colombia, Ecuador, Belgium and South Africa. At the end of 1999, we recognized impairments of our equity basis investment in China as well as an impairment of our telecommunications business in the Philippines.

We manufacture and market highly engineered conductors of copper and copper alloy wire electroplated with silver, tin or nickel for sophisticated, specialty product niches in the aerospace, automotive,

biomedical, computer and consumer electronics markets. Those products are manufactured in plants located in Inman, South Carolina; Trenton, Georgia; and Elizabeth, New Jersey. As part of the manufacturing rationalization program initiated in 1999, leased plants in Fairfield and Montville, New Jersey, were closed in 2000, and the West Caldwell, New Jersey, plant was temporarily closed in 2002. Their productive capacities were transferred to the remaining facilities.

On September 10, 2002, we announced the temporary closure of two U.S. wire and cable plants and other actions to improve efficiencies and consolidate certain wire and cable operations. These temporary closures and internal changes are expected to reduce our costs and align our business with current market conditions. The actions included: (i) the temporary closure of the Laurinburg, North Carolina, magnet wire plant at the end of 2002, with production being shifted to the El Paso, Texas, and Fort Wayne, Indiana, facilities; (ii) the temporary closure of the West Caldwell, New Jersey, High Performance Conductors facility pending recovery of markets served by this location, with production of certain products relocated to our Inman, South Carolina, facility; (iii) operational and production support at other High Performance Conductors facilities being streamlined in order to reduce costs and increase operating efficiencies; and (iv) the restructuring and consolidation of certain administrative functions. These actions resulted in special, pre-tax charges of $23.0 million ($22.2 million after-tax) in the 2002 third quarter and $0.6 million ($0.8 million after-tax) in the 2002 fourth quarter. Of these amounts, $16.9 million (before and after taxes) was recognized as asset impairments and $6.7 million ($6.1 million after-tax) was recognized for severance-related and relocation expenses associated with the restructuring and temporary closures. The amount of the asset impairment was determined through an assessment of fair market value, which was based on independent appraisals, of the existing assets at the wire and cable plants. We also performed an event-driven impairment test on the goodwill at our wire and cable plants through a comparison of the carrying value to the respective fair value (using an estimate of discounted cash flows) and determined that an additional impairment loss was not required. The restructuring plan includes the reduction of approximately 300 positions and charges associated with employee severance and relocation ($3.9 million, of which $0.7 million and $1.9 million was paid in the 2002 third and fourth quarters, respectively) and pension and other postretirement obligations ($2.8 million).

Competition and Markets

Phelps Dodge is one of the world s largest manufacturers of magnet wire. Our plants draw, roll and insulate copper and aluminum wire which is sold as magnet wire and bare conductors to original equipment manufacturers for use in electric motors, generators, transformers, televisions, automobiles and a variety of small electrical appliances. Magnet wire also is sold to electrical equipment repair shops and smaller original equipment manufacturers through a network of distributors. We principally compete with two international and two U.S. magnet wire producers.

Our international energy and telecommunication cable companies primarily sell products to contractors, distributors, and public and private utilities. Our products are used in lighting, power distribution, telecommunications and other electrical applications. Our competitors range from worldwide wire and cable manufacturers to small local producers.

Our specialty conductors are sold primarily to intermediaries (insulators, assemblers, subcontractors and distributors). Approximately 40 percent of these products ultimately are sold to commercial and military aerospace companies for use in airframes, avionics, space electronics, radar systems and ground control electronics. Specialty conductors also are used in appliances, instrumentation, computers, telecommunications, military electronics, medical equipment and other products. We have two primary U.S. competitors and compete with three importers in the specialty conductor market; however, in those few markets where we compete for high volume products, we face competition from several U.S. fabricators.

Raw Materials and Energy Supplies

The principal raw materials used by our magnet wire manufacturing operations are copper, aluminum and various chemicals and resins used in the manufacture of electrical insulating materials. Most of the copper purchased for our magnet wire operations is from our PDMC division.

The principal raw materials used by our international energy and telecommunication cable companies are copper, copper alloy, aluminum, aluminum alloy, copper-clad steel and various electrical insulating materials.

The specialty conductor product line usually is plated with silver, nickel or tin. With the exception of copper needed in specialty conductors, a majority of the materials used by these companies is purchased from others. We do not believe that the loss of any one supplier would have a material adverse effect on our financial condition or on the results of our operations.

Most of our wire and cable operations generally use purchased electricity and natural gas as their principal sources of energy. Our magnet wire company s principal manufacturing equipment uses natural gas; however, it is also equipped to burn alternative fuels.

Ownership of Property

We own most of the plants and land on which our wire and cable operations are located. The exceptions are the leased land and buildings of our magnet wire facilities in Austria and closed specialty conductor facilities in Fairfield and Montville, New Jersey. This land is not material to our overall operations.

Environmental Matters

Federal and state environmental laws and regulations affect many aspects of our domestic industrial operations. We estimate that capital expenditures for programs to comply with applicable environmental laws and regulations within our PDI division will total approximately $8 million in 2003 and approximately $11 million in 2004; approximately $3 million was spent on such programs in 2002. We anticipate making significant capital and other expenditures after 2003 for continued compliance with environmental laws and regulations.

It is expected that most, and perhaps all, of our domestic carbon black plants and magnet wire plants are or will become subject to one or more MACT standards under the federal CAA. These standards do not have immediate compliance dates; instead they allow two or three years after promulgation to provide the opportunity to come into compliance or to reduce emissions to avoid regulation before the compliance date. For example, the carbon black MACT standard was issued in 2002, and the compliance date for the carbon black MACT standard is July 2005. Other potentially applicable MACT standards are still in development. We are in the process of determining applicability and compliance strategies.

The European Union (EU) has commenced work on the development of Best Available Technology (BAT) for the carbon black industry. The current BAT Reference Document (BREF Note) proposes to control sulfur dioxide emissions by limiting the annual sulfur content in feedstocks to 0.5 percent. This limit, if adopted, could negatively impact the carbon black industry, including Columbian. Columbian, through the carbon black industry trade association, is actively involved in this process. It is expected that it will be approximately two years before any final action will be taken.

Because of the frequent changes in environmental laws and regulations and the uncertainty these changes create for us, we are unable to estimate reasonably the total amount of such expenditures over the longer term, but it may be material. (Refer to the discussion of OTHER ENVIRONMENTAL MATTERS.)

LABOR MATTERS

Employees at PDMC s Arizona operations, El Paso refinery and rod mill, Tyrone, Hidalgo smelter, the Norwich and Chicago rod mills, the Henderson mine in Colorado, the Fort Madison, Iowa, molybdenum processing facility, and some employees at Chino are not represented by any unions.

Our El Abra mine in Chile had labor agreements that expired on October 30, 2001. Two new three-year agreements, covering approximately 593 employees, were ratified with effective dates of November 1, 2001, through October 31, 2004. Candelaria has two labor agreements, covering approximately 700 employees, which expired in March 2003. On March 31, 2003, the 556 employees represented by the Candelaria union elected to go on strike. A labor agreement was reached earlier with the remaining non-union hourly employees. The mine will remain in production as negotiations continue with the Candelaria union. Cerro Verde has a three-year labor agreement, covering approximately 295 employees, that expires December 31, 2003. Our Chino mine in Hurley, New Mexico, has an agreement covering approximately 447 employees that expired on November 18, 2002; negotiations are still ongoing in regard to this agreement. Our molybdenum operations in Stowmarket and Rotterdam have agreements covering approximately 38 and 50 employees, respectively, that expire (or expired) on May 31 and March 31, 2003.

In addition, we currently have labor agreements covering most of our U.S. and international manufacturing division plants. Our specialty chemicals plant in Trecate, Italy, has an agreement covering 89 employees that expires on December 31, 2003, and an agreement covering seven employees that expired on December 31, 2001; negotiations are still ongoing in regard to this agreement. Our specialty chemicals plant in Hamilton, Ontario, Canada, had an agreement that expired on September 30, 2002. In March 2003, a new four-year agreement was reached covering 65 employees. The plant remained fully operational and staffed by salaried and contract employees during the work stoppage enacted in November 2002. Our specialty chemicals facilities in Cubatao and Sao Paulo, Brazil, have agreements covering 211 and 26 employees, respectively, that expire on October 31, 2003. Our specialty chemicals plant in Bristol, United Kingdom, has an agreement covering 107

employees that expires on May 8, 2003; negotiations are expected to begin in April 2003. Our specialty chemicals plant in Hannover, Germany, has an agreement covering 74 employees that expires on July 31, 2003. Our spe-

cialty chemicals plant in Yosu, South Korea, has a wage agreement covering 49 employees that expired March 31, 2003; negotiations are expected to begin during the 2003 second quarter. Our specialty chemicals plant in Santander, Spain, has an agreement covering 48 employees that expired on December 31, 2002; negotiations are expected to begin during the 2003 second quarter. Our specialty chemicals plant in Marshall, West Virginia, has two agreements covering 60 employees that expire in June 2003. Our specialty chemicals North Bend plant in Franklin, Louisiana, had an agreement that expired on February 28, 2003. In February 2003, a new three-year agreement was reached covering 113 employees.

Our wire plant in Elizabeth, New Jersey, has an agreement covering 45 employees that expired on July 31, 2000; negotiations are still ongoing in regard to this agreement. Our wire plant in West Caldwell, New Jersey, has an agreement covering 88 employees that expires in September 2003; this facility was temporarily closed in December 2002. Our plant in Zambia has an agreement covering approximately 98 employees that expires in July 2003. Our magnet wire plant in Monterrey, Mexico, has an agreement covering approximately 143 employees that expired in March 2003; negotiations began in April 2003. Our magnet wire plant in Fort Wayne, Indiana, has an agreement covering approximately 210 employees that expires in May 2005. Our magnet wire plant in Austria has an agreement covering approximately 70 employees that expires in October 2003. Our wire and cable facilities in Brazil have agreements covering approximately 279 and 30 employees that expire in September and November 2003, respectively. Our wire and cable facilities in Venezuela have agreements covering approximately 80 and 78 employees that expire in March 2004 and December 2005, respectively. Our wire and cable plant in Chile has an agreement covering approximately 184 employees that expires in May 2007.

RESEARCH AND DEVELOPMENT

We conduct research and development programs relating to technology for exploration for minerals, mining and recovery of metals from ores, concentrates and solutions, smelting and refining of copper, metal processing and product development. We also conduct research and development programs related to our carbon products through Columbian Chemicals, and our wire insulating processes and materials and conductor materials and processes through our Wire and Cable segment. Expenditures for all of these research and development programs, together with contributions to industry and government-supported programs, totaled $26.0 million in 2002, compared with $27.1 million in 2001 and $24.7 million in 2000.

OTHER ENVIRONMENTAL MATTERS

Phelps Dodge or its subsidiaries have been advised by EPA, the U.S. Forest Service and several state agencies that they may be liable under CERCLA or similar state laws and regulations for costs of responding to environmental conditions at a number of sites that have been or are being investigated by EPA, the U.S. Forest Service or states to determine whether releases of hazardous substances have occurred and, if so, to develop and implement remedial actions.

Phelps Dodge has provided reserves for potential environmental obligations that management considers probable and for which reasonable estimates can be made. For closed facilities and closed portions of operating facilities with closure obligations, an environmental liability is considered probable and is accrued when a closure determination is made and approved by management. Environmental liabilities attributed to CERCLA or analogous state programs are considered probable when a claim is asserted, or is probable of assertion, and we have been associated with the site. Other environmental remediation liabilities are considered probable based upon specific facts and circumstances. Liability estimates are based on an evaluation of, among other factors, currently available facts, existing technology, presently enacted laws and regulations, Phelps Dodge s experience in remediation, other companies remediation experience, Phelps Dodge s status as a potentially responsible party (PRP), and the ability of other PRPs to pay their allocated portions. Accordingly, total environmental reserves of $305.9 million and $311.2 million were recorded as of December 31, 2002 and 2001, respectively. The long-term portion of these reserves is included in other liabilities and deferred credits on the consolidated balance sheet and amounted to $261.7 million and $264.3 million at December 31, 2002 and 2001, respectively.

The sites for which we have received a liability claim, a notice of potential liability or an information request that currently are considered to be the most significant are the Pinal Creek site near Miami, Arizona; the Laurel Hill site at Maspeth, New York; the former American Zinc and Chemical site in Langeloth, Pennsylvania; and the Cyprus Tohono site near Casa Grande, Arizona.

Pinal Creek Site

The Pinal Creek site was listed under the ADEQ Water Quality Assurance Revolving Fund program in 1989 for contamination in the shallow alluvial aquifers within the Pinal Creek drainage near Miami, Arizona. Since that time, environmental remediation has been performed by the members of the Pinal Creek Group (PCG), comprising Phelps Dodge Miami, Inc. (a wholly owned subsidiary of the Company) and

two other companies. In 1998, the District Court approved a Consent Decree between the PCG members and the state of Arizona resolving all matters related to an enforcement action contemplated by the state of Arizona against the PCG members with respect to the groundwater matter. The Consent Decree committed Phelps Dodge Miami, Inc. and the other PCG members to complete the remediation work outlined in the Consent Decree. That work continues at this time pursuant to the Consent Decree and consistent with the National Contingency Plan prepared by EPA under CERCLA.

Phelps Dodge Miami, Inc. and the other members of the PCG are pursuing contribution litigation against three other parties involved with the site. At least two of the three defendants now have admitted direct liability as responsible parties. The case is expected to be assigned a trial date in 2004. Phelps Dodge Miami, Inc. also asserted claims against certain past insurance carriers. As of November 2002, all of the carriers have settled or had their liability adjudicated. One carrier has appealed the judgment against it.

In addition, a dispute between one dissenting PCG member and Phelps Dodge Miami, Inc. and the other PCG member was filed in Superior Court in 2002. The litigation seeks a declaratory judgment on the dissenting member s contract liability under the PCG agreement. Trial for this matter is scheduled for early 2004.

While significant recoveries may be achieved in the contribution litigation, the Company cannot reasonably estimate the amount and, therefore, has not taken potential recoveries into consideration in the recorded reserve.

Phelps Dodge Miami, Inc. s share of the planned remediation work has a cost range for reasonable expected outcomes estimated to be from $117 million to $219 million, and, as no point within that range is more likely than any other, the lower end of the range has been reserved as required by generally accepted accounting principles. Approximately $117 million remained in the Company s Pinal Creek remediation reserve at December 31, 2002.

Laurel Hill Site

Phelps Dodge Refining Corporation, a subsidiary of the Company, owns the Laurel Hill property in Maspeth, New York, that formerly was used for metal-related smelting, refining and manufacturing. All industrial operations at the Laurel Hill site ceased in 1984. In June 1999, the Company entered into an Order on Consent with the New York State Department of Environmental Conservation (NYSDEC) that required the Company to perform, among other things, a remedial investigation and feasibility study relating to environmental conditions and remedial options at the Laurel Hill site.

The Company s final feasibility study, which was submitted to NYSDEC in May 2002, recommended that the Laurel Hill site be remediated by removing certain hot spots of contaminated soils, capping most of the surface of the site, installing and operating a groundwater extraction, containment and treatment system, long-term groundwater monitoring, and implementing institutional controls concerning future land uses. In June 2002, NYSDEC issued a Proposed Remedial Action Plan (PRAP) adopting Phelps Dodge s remedial recommendation. NYSDEC has held public meetings concerning its PRAP and issued a final remedial decision in January 2003 in the form of a Record of Decision. Phelps Dodge expects to commence implementation of the remedy sometime during the second or third quarter of 2003. While the Laurel Hill site is under a contract for sale for $34 million, and the contract vendee has assumed the obligation of capping the site at a cost of about $5 million, implementing the remainder of the remedy is expected to cost the Company as much as $16 million. The Company has reserved the entire estimated cost of $21 million.

In July 2002, Phelps Dodge entered into another Order on Consent with NYSDEC requiring the Company to conduct a remedial investigation and feasibility study relating to sediments in Newtown and Maspeth Creeks, which are located contiguous to the Laurel Hill site. The Company expects to commence the remedial investigation in mid to late 2003. It cannot be determined what, if any, remedial action will be required by NYSDEC concerning the Newtown and Maspeth Creek sediments until the remedial investigation and feasibility studies are complete.

American Zinc and Chemical Site

In June 1999, Cyprus Amax, now a subsidiary of Phelps Dodge, received an information request from the Pennsylvania Department of Environmental Protection (PADEP) regarding the former American Zinc and Chemical (AZC) site in Langeloth, Pennsylvania. For PADEP, the AZC site consists of a former zinc smelter facility operated until 1947 by the former American Zinc and Chemical Company and a contiguous, currently operating molybdenum refinery formerly owned by the Climax Molybdenum Company, a Cyprus Amax subsidiary. The American Zinc and Chemical Company, which was dissolved in 1951, also was a subsidiary of a corporate predecessor to Cyprus Amax.

In discussions with Cyprus Amax in 2001 and early 2002, PADEP informally indicated that it expects Cyprus Amax to investigate and remediate environ-

mental conditions at the AZC site, which predominates at and about the former zinc smelter facility. Preliminary evaluations of the nature and extent of environmental conditions at and about the zinc smelter facility indicate that remediation of the AZC site may range in cost from $18 million to $52 million. While the Company has reserved $20 million for possible remediation work at the AZC site, which represents the most likely point within the range of estimates, Cyprus Amax has indicated to PADEP that the Company is not liable for the actions of its former subsidiary, American Zinc and Chemical Company, under existing federal and state environmental laws. To date, PADEP has not responded to Cyprus Amax s assertion of non-liability.

Cyprus Tohono Site

Cyprus Tohono holds three leases for lands on the Tohono O odham Indian Nation. The leased lands include the site of a mining operation, currently on care-and-maintenance status, comprising an open pit, underground mine workings, leach and non-leach rock stockpiles, tailing and evaporation ponds, SX/EW operations, and ancillary facilities.

EPA has started a Preliminary Assessment and Site Investigation of Cyprus Tohono to evaluate the need to conduct remedial actions under CERCLA. We are unable to project the remedial action measures, if any, that may be required as a result of these investigations; however, based upon our best estimate of remedial actions that Cyprus Tohono may undertake, the Company reserved $11 million for Cyprus Tohono for the CERCLA matter.

Other

In 2002, the Company recognized charges of $14.0 million for environmental remediation primarily for the Laurel Hill site ($13.5 million) and the remainder at closed sites, none of which increased or decreased individually more than $2 million.

At December 31, 2002, the cost range for reasonably possible outcomes for all reservable environmental remediation sites other than Pinal Creek, Laurel Hill, AZC and Cyprus Tohono was estimated to be from $119 million to $219 million of which $137 million has been reserved. Work on these sites is expected to be substantially completed in the next several years, subject to inherent delays involved in the remediation process.

Phelps Dodge believes certain insurance policies partially cover the foregoing environmental liabilities; however, some of the insurance carriers have denied coverage. We presently are negotiating with the carriers over some of these disputes. Further, Phelps Dodge believes it has other potential claims for recovery from other third parties, including the United States Government and other PRPs. Neither insurance recoveries nor other claims or offsets are recognized unless such offsets are considered probable of realization. In 2002 and 2001, the Company recognized proceeds from settlements reached with several insurance companies on historic environmental liability claims of $34.3 million and $61.8 million, net of fees and expenses, respectively.

Phelps Dodge has a number of sites that are not the subject of an environmental reserve because it is not probable that a successful claim will be made against the Company for those sites, but for which there is a reasonably possible likelihood of an environmental remediation liability. At December 31, 2002, the cost range for reasonably possible outcomes for all such sites was estimated to be from $4 million to $37 million. The liabilities arising from potential environmental obligations that have not been reserved at this time may be material to the results of any single quarter or year in the future. Management, however, believes the liability arising from potential environmental obligations is not likely to have a material adverse effect on the Company s liquidity or financial position as such obligations could be satisfied over a period of years.

Our operations are subject to many environmental laws and regulations in jurisdictions both in the United States and in other countries in which we do business. For further discussion of these laws and regulations, refer to PDMC - Environmental and Other Regulatory Matters and PDI - Environmental Matters. The estimates given in those discussions of the capital expenditures to comply with environmental laws and regulations in 2003 and 2004, and the expenditures in 2002, are separate from the reserves and estimates described above.

The Environmental, Health and Safety Committee of the Board of Directors comprises five non-employee directors. The Committee met two times in 2002 to review, among other things, the Company s policies with respect to environmental, health and safety matters, and the adequacy of management s programs for implementing those policies. The Committee reports on such reviews and makes recommendations with respect to those policies to the Board of Directors and to management.

SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the Registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

PHELPS DODGE CORPORATION
(Registrant)

April 23, 2003

By: /s/ Ramiro G. Peru

Ramiro G. Peru
Senior Vice President
and Chief Financial Officer

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below by the following persons on behalf of the Registrant and in the capacities and on the dates indicated.

/s/ J. Steven Whisler J. Steven Whisler	Chairman, President, Chief Executive Officer and Director (Principal Executive Officer)	April 23, 2003
/s/ Ramiro G. Peru Ramiro G. Peru	Senior Vice President and Chief Financial Officer (Principal Financial Officer)	April 23, 2003
/s/ Stanton K. Rideout Stanton K. Rideout	Vice President and Controller (Principal Accounting Officer)	April 23, 2003
(Robert N. Burt, Archie W. Dunham, William A. Franke, Marie L. Knowles, Robert D. Krebs, Jon C. Madonna, Southwood J. Morcott, Gordon R. Parker, William J. Post, Jack E. Thompson, Directors)		April 23, 2003

By: /s/ Ramiro G. Peru

Ramiro G. Peru
Attorney-in-fact

Certifications

I, J. Steven Whisler, Chairman, President and Chief Executive Officer, certify that:

l. I have reviewed this Amendment No. 2 to the annual report on Form 10-K of Phelps Dodge Corporation;

2. Based on my knowledge, this annual report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this annual report;

3. Based on my knowledge, the financial statements, and other financial information included in this annual report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this

annual report;

4. The registrant s other certifying officers and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-14 and 15d-14) for the registrant and have:

   a) designed such disclosure controls and procedures to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this annual report is being prepared;

   b) evaluated the effectiveness of the registrant s disclosure controls and procedures as of a date within 90 days prior to the filing date of this annual report (the Evaluation Date); and

   c) presented in this annual report our conclusions about the effectiveness of the disclosure controls and procedures based on our evaluation as of the Evaluation Date;

5. The registrant s other certifying officers and I have disclosed, based on our most recent evaluation, to the registrant s auditors and the audit committee of registrant s board of directors (or persons performing the equivalent functions):

   a) all significant deficiencies in the design or operation of internal controls which could adversely affect the registrant s ability to record, process, summarize and report financial data and have identified for the registrant s auditors any material weaknesses in internal controls; and

   b) any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant s internal controls; and

6. The registrant s other certifying officers and I have indicated in this annual report whether there were significant changes in internal controls or in other factors that could significantly affect internal controls subsequent to the date of our most recent evaluation, including any corrective actions with regard to significant deficiencies and material weaknesses.

April 23, 2003

/s/ J. Steven Whisler

J. Steven Whisler
Chairman, President and Chief Executive Officer

I, Ramiro G. Peru, Senior Vice President and Chief Financial Officer, certify that:

l. I have reviewed this Amendment No. 2 to the annual report on Form 10-K of Phelps Dodge Corporation;

2. Based on my knowledge, this annual report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this annual report;

3. Based on my knowledge, the financial statements, and other financial information included in this annual report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this annual report;

4. The registrant s other certifying officers and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-14 and 15d-14) for the registrant and have:

   a) designed such disclosure controls and procedures to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this annual report is being prepared;

b) evaluated the effectiveness of the registrant s disclosure controls and procedures as of a date within 90 days prior to the filing date of this annual report (the Evaluation Date); and

c) presented in this annual report our conclusions about the effectiveness of the disclosure controls and procedures based on our evaluation as of the Evaluation Date;

5. The registrant s other certifying officers and I have disclosed, based on our most recent evaluation, to the registrant s auditors and the audit committee of registrant s board of directors (or persons performing the equivalent functions):

a) all significant deficiencies in the design or operation of internal controls which could adversely affect the registrant s ability to record, process, summarize and report financial data and have identified for the registrant s auditors any material weaknesses in internal controls; and

b) any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant s internal controls; and

6. The registrant s other certifying officers and I have indicated in this annual report whether there were significant changes in internal controls or in other factors that could significantly affect internal controls subsequent to the date of our most recent evaluation, including any corrective actions with regard to significant deficiencies and material weaknesses.

April 23, 2003

/s/ Ramiro G. Peru

Ramiro G. Peru
Senior Vice President and Chief Financial Officer