

FREEPORT-MCMORAN INC  
Form 10-K  
February 20, 2018

UNITED STATES  
SECURITIES AND  
EXCHANGE COMMISSION  
Washington, D.C. 20549

FORM 10-K

(Mark One)

☒ ANNUAL REPORT

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

For the fiscal year ended  
December 31, 2017

OR

☐ TRANSITION REPORT

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

For the transition period from to  
Commission File Number:

001-11307-01

Freeport-McMoRan  
Inc.

(Exact name of  
registrant as  
specified in its  
charter)

Delaware

74-2480931

(State or other jurisdiction of  
incorporation or organization)

(I.R.S. Employer Identification No.)

333 North Central Avenue

Phoenix, Arizona

85004-2189

(Address of principal executive offices) (Zip Code)

(602) 366-8100

(Registrant's telephone number, including area code)

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

Title of each class	Name of each exchange on which registered
Common Stock, par value \$0.10 per share	New York Stock Exchange

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

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act  
p Yes o No

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Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act. ☐ Yes ☒ No

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 ☐ No

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T (§ 232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). ☒ Yes ☐ No

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K (§229.405 of this chapter) is not contained herein, and will not be contained, to the best of the 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. ☒ No

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer or a smaller reporting company. See the definitions of "large accelerated filer," "accelerated filer" and "smaller reporting company" in Rule 12b-2 of the Exchange Act. ☒ Large accelerated filer ☐ Accelerated filer ☐ Non-accelerated filer ☐ Smaller reporting company

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Act).

☐ Yes ☒ No

The aggregate market value of common stock held by non-affiliates of the registrant was \$22.3 billion on January 31, 2018, and \$15.5 billion on June 30, 2017.

Common stock issued and outstanding was 1,447,844,743 shares on January 31, 2018, and 1,447,134,190 shares on June 30, 2017.

#### DOCUMENTS INCORPORATED BY REFERENCE

Portions of our proxy statement for our 2018 annual meeting of stockholders are incorporated by reference into Part III (Items 10, 11, 12, 13 and 14) of this report.

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FREEPORT-McMoRan INC.

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### PART I

#### Items 1. and 2. Business and Properties.

All of our periodic reports filed with the United States (U.S.) Securities and Exchange Commission (SEC) pursuant to Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended, are available, free of charge, through our website, [www.fcx.com](http://www.fcx.com), including our annual reports on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K and any amendments to those reports. These reports and amendments are available through our website as soon as reasonably practicable after we electronically file or furnish such material to the SEC.

References to “we,” “us” and “our” refer to Freeport-McMoRan Inc. (FCX) and its consolidated subsidiaries. References to “Notes” refer to the Notes to Consolidated Financial Statements included herein (refer to Item 8), and references to “MD&A” refer to Management’s Discussion and Analysis of Financial Condition and Results of Operations included herein (refer to Item 7).

### GENERAL

We are a leading international mining company with headquarters in Phoenix, Arizona. Our company was incorporated under the laws of the state of Delaware on November 10, 1987. We operate large, long-lived geographically diverse assets with significant proven and probable reserves of copper, gold and molybdenum, and we are the world’s largest publicly traded copper producer. Our portfolio of assets includes the Grasberg minerals district in Indonesia, one of the world’s largest copper and gold deposits; and significant mining operations in the Americas, including the large-scale Morenci minerals district in North America and the Cerro Verde operation in South America.

We have taken actions to restore our balance sheet strength through a combination of asset sale and capital market transactions, including:

Completing approximately \$6.7 billion in asset sale transactions (mostly in 2016), including the sale of substantially all of our oil and gas properties, our interest in TF Holdings Limited (TFHL), through which we held an effective 56 percent interest in the Tenke Fungurume (Tenke) mine in the Democratic Republic of Congo, and the sale of an additional 13 percent undivided interest in the Morenci minerals district in Arizona. Refer to Note 2 for further discussion of dispositions.

Generating \$1.5 billion in gross proceeds through the sale of 116.5 million shares of our common stock in 2016. Refer to Note 10 for further discussion.

Exchanging 27.7 million shares of our common stock for \$369 million of senior notes in 2016. Refer to Notes 8 and 10 for further discussion.

Settling \$1.1 billion in aggregate drillship contracts for \$755 million in 2016, of which \$540 million was funded with 48.1 million shares of our common stock. Refer to Notes 10 and 13 for further discussion.

These actions, combined with cash flow from operations, resulted in net reductions of debt totaling \$2.9 billion during 2017 and \$4.3 billion during 2016 (refer to Note 8 for discussion of debt) and an increase in consolidated cash from \$177 million at December 31, 2015, to \$4.2 billion at December 31, 2016, and \$4.4 billion at December 31, 2017. We continue to manage costs and capital spending and, subject to commodity prices and operational results, expect to generate significant operating cash flows for further debt reduction during 2018.

We believe the underlying long-term fundamentals of the copper business remain positive, and we have retained a high-quality portfolio of long-lived copper assets positioned to generate long-term value. We have commenced a

project to develop the Lone Star oxide ores near the Safford operation in eastern Arizona. We are also pursuing other opportunities to enhance net present values, and we continue to advance studies for future development of our copper resources, the timing of which will be dependent on market conditions.

Following are our ownership interests at December 31, 2017, in operating mines through our subsidiaries, Freeport Minerals Corporation (FMC) and PT Freeport Indonesia (PT-FI):

FMC has a 72 percent undivided interest in Morenci via an unincorporated joint venture. Additionally, PT-FI has an a. unincorporated joint venture with Rio Tinto plc (Rio Tinto) related to our Indonesia operations. Refer to Note 3 for further discussion of our ownership in subsidiaries and joint ventures.

As further discussed in Note 13, PT-FI continues to actively engage with Indonesian government officials to address regulatory changes that conflict with its contractual rights in a manner that provides long-term stability for PT-FI's operations and investment plans, and protects value for our shareholders. Following a framework understanding reached in August 2017, the parties have been engaged in negotiation and documentation of a special license (IUPK) and accompanying documentation for assurances on legal and fiscal terms to provide PT-FI with long-term rights through 2041. In addition, the IUPK would provide that PT-FI construct a smelter within five years of reaching a definitive agreement and include agreement for the divestment of 51 percent of the project area interests to Indonesian participants at fair market value. The parties continue to negotiate documentation on a comprehensive agreement for PT-FI's extended operations and to reach agreement on timing, process and governance matters relating to the divestment. The parties have a mutual objective of completing negotiations and the required documentation during the first half of 2018.

At December 31, 2017, our estimated consolidated recoverable proven and probable mineral reserves totaled 86.7 billion pounds of copper, 23.5 million ounces of gold and 2.84 billion pounds of molybdenum. Following is a summary of our consolidated recoverable proven and probable mineral reserves at December 31, 2017, by geographic location (refer to "Mining Operations" for further discussion):

	Copper	Gold	Molybdenum
North America	39 %	1 %	78 %
South America	32	—	22
Indonesia	29	99	—
	100 %	100 %	100 %

In North America, we operate seven copper mines - Morenci, Bagdad, Safford, Sierrita and Miami in Arizona, and Chino and Tyrone in New Mexico, and two molybdenum mines - Henderson and Climax in Colorado. In addition to copper, certain of our North America copper mines also produce molybdenum concentrate, gold and silver. In South America, we operate two copper mines - Cerro Verde in Peru and El Abra in Chile. In addition to copper, the Cerro Verde mine also produces molybdenum concentrate and silver. In Indonesia, our subsidiary PT-FI operates in the

Grasberg minerals district. In addition to copper, the Grasberg minerals district also produces gold and silver. Following is a summary of the geographic location of our consolidated copper, gold and molybdenum production for the year 2017 (refer to “Mining Operations” for further information):

	Copper	Gold	Molybdenum	
North America	41 %	1 %	71 %	<sup>a</sup>
South America	33	—	29	
Indonesia	26	99	—	
	100 %	100 %	100 %	

Our Henderson and Climax molybdenum mines produced 35 percent of consolidated molybdenum production, and <sup>a</sup> our North America copper mines produced 36 percent.

The locations of our operating mines are shown on the world map below.

### COPPER, GOLD AND MOLYBDENUM

Following provides a brief discussion of our primary natural resources – copper, gold and molybdenum. For further discussion of historical and current market prices of these commodities, refer to MD&A and Item 1A. “Risk Factors.”

#### Copper

Copper is an internationally traded commodity, and its prices are determined by the major metals exchanges – the London Metal Exchange (LME), New York Mercantile Exchange (NYMEX) and Shanghai Futures Exchange. Prices on these exchanges generally reflect the worldwide balance of copper supply and demand, and can be volatile and cyclical. During 2017, the LME spot copper price averaged \$2.80 per pound, ranging from a low of \$2.48 per pound to a high of \$3.27 per pound, and was \$3.25 per pound at December 31, 2017.

In general, demand for copper reflects the rate of underlying world economic growth, particularly in industrial production and construction. According to Wood Mackenzie, a widely followed independent metals market consultant, copper’s end-use markets (and their estimated shares of total consumption) are construction (30 percent), consumer products (24 percent), electrical applications (24 percent), transportation (12 percent) and industrial machinery (10 percent). We believe copper will continue to be essential in these basic uses as well as contribute significantly to new technologies for energy efficiencies, to advance communications and to enhance public health. Examples of areas we believe will require additional copper in the future include: (i) high efficiency motors, which consume up to 75 percent more copper than a standard motor; (ii) electric vehicles, which consume up to four times the amount of copper in terms of weight compared to vehicles of similar size with an internal combustion engine, and require copper-intensive charging station infrastructure to refuel; and (iii) renewable energy

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such as wind and solar, which consume four to five times the amount of copper compared to traditional fossil fuel generated power.

### Gold

Gold is used for jewelry, coinage and bullion as well as various industrial and electronic applications. Gold can be readily sold on numerous markets throughout the world. Benchmark prices are generally based on London Bullion Market Association (London) quotations. During 2017, the London PM gold price averaged \$1,257 per ounce, ranging from a low of \$1,151 per ounce to a high of \$1,346 per ounce, and was \$1,297 per ounce at December 31, 2017.

### Molybdenum

Molybdenum is a key alloying element in steel and the raw material for several chemical-grade products used in catalysts, lubrication, smoke suppression, corrosion inhibition and pigmentation. Molybdenum, as a high-purity metal, is also used in electronics such as flat-panel displays and in super alloys used in aerospace. Reference prices for molybdenum are available in several publications, including Metals Week, CRU Report and Metal Bulletin. During 2017, the weekly average price of molybdenum quoted by Metals Week averaged \$8.21 per pound, ranging from a low of \$6.98 per pound to a high of \$10.15 per pound, and was \$10.15 per pound at December 31, 2017.

## PRODUCTS AND SALES

FCX's consolidated revenues for 2017 primarily included sales of copper (74 percent), gold (12 percent) and molybdenum (5 percent). Copper concentrate sales to PT Smelting totaled 12 percent of FCX's consolidated revenues for the year ended December 31, 2017. Refer to Note 16 for a summary of our consolidated revenues and operating income (loss) by business segment and geographic area.

### Copper Products

We are one of the world's leading producers of copper concentrate, cathode and continuous cast copper rod. During 2017, 59 percent of our mined copper was sold in concentrate, 19 percent as cathode and 22 percent as rod from North America operations.

The copper ore from our mines is generally processed either by smelting and refining or by solution extraction and electrowinning (SX/EW). Before being subject to the smelting and refining process, ore is crushed and treated to produce a copper concentrate with copper content of approximately 20 to 30 percent. Copper concentrate is then smelted (i.e., subjected to extreme heat) to produce copper anode, which weighs between 800 and 900 pounds and has an average copper content of 99.5 percent. The anode is further treated by electrolytic refining to produce copper cathode, which weighs between 100 and 350 pounds and has an average copper content of 99.99 percent. For ore subject to the SX/EW process, the ore is placed on stockpiles and copper is extracted from the ore by dissolving it with a weak sulphuric acid solution. The copper content of the solution is increased in two additional solution-extraction stages, and then the copper-bearing solution undergoes an electrowinning process to produce cathode that is, on average, 99.99 percent copper. Our copper cathode is used as the raw material input for copper rod, brass mill products and for other uses.

**Copper Concentrate.** We produce copper concentrate at six of our mines. In North America, copper concentrate is produced at the Morenci, Bagdad, Sierrita and Chino mines, and a significant portion is shipped to our Miami smelter in Arizona. Copper concentrate is also produced at the Cerro Verde mine in Peru and the Grasberg minerals district in Indonesia.

**Copper Cathode.** We produce copper cathode at our electrolytic refinery located in El Paso, Texas, and at nine of our mines. SX/EW cathode is produced from the Morenci, Bagdad, Safford, Sierrita, Miami, Chino and Tyrone mines in North America, and from the Cerro Verde and El Abra mines in South America. Copper cathode is also produced at



Atlantic Copper (our wholly owned copper smelting and refining unit in Spain) and PT Smelting (PT-FI's 25-percent-owned copper smelter and refinery in Indonesia). Refer to "Mining Operations - Smelting Facilities and Other Mining Properties" for further discussion of Atlantic Copper and PT Smelting.

Continuous Cast Copper Rod. We manufacture continuous cast copper rod at our facilities in El Paso, Texas; Norwich, Connecticut; and Miami, Arizona, primarily using copper cathode produced at our North America copper mines.

Table of Contents**Copper Sales**

North America. The majority of the copper produced at our North America copper mines and refined in our El Paso, Texas, refinery is consumed at our rod plants. The remainder of our North America copper production is sold in the form of copper cathode or copper concentrate under U.S. dollar-denominated annual contracts. Cathode and rod contract prices are generally based on the prevailing Commodity Exchange Inc. (COMEX - a division of NYMEX) monthly average spot price for the month of shipment and include a premium. Generally, copper rod is sold to wire and cable manufacturers, while cathode is sold to rod, brass or tube fabricators. During 2017, 21 percent of our North America mines' copper concentrate sales volumes were shipped to Atlantic Copper.

South America. Production from our South America mines is sold as copper concentrate or copper cathode under U.S. dollar-denominated, annual and multi-year contracts. During 2017, our South America mines sold approximately 79 percent of their copper production in concentrate and 21 percent as cathode. During 2017, seven percent of our South America mines' copper concentrate sales volumes were shipped to Atlantic Copper.

Substantially all of South America's copper concentrate and cathode sales contracts provide final copper pricing in a specified future month (generally one to four months from the shipment date) primarily based on quoted LME monthly average spot copper prices. Revenues from South America's concentrate sales are recorded net of royalties and treatment charges (i.e., fees paid to smelters that are generally negotiated annually). In addition, because a portion of the metals contained in copper concentrate is unrecoverable from the smelting process, revenues from South America's concentrate sales are also recorded net of allowances for unrecoverable metals, which are a negotiated term of the contracts and vary by customer.

Indonesia. PT-FI sells its production in the form of copper concentrate, which contains significant quantities of gold and silver, primarily under U.S. dollar-denominated, long-term contracts. PT-FI also sells a small amount of copper concentrate in the spot market. Following is a summary of PT-FI's aggregate percentage concentrate sales to third parties, PT Smelting and Atlantic Copper for the years ended December 31:

	2017	2016	2015
Third parties	54 %	56 %	61 %
PT Smelting	46	42	37
Atlantic Copper	—	2	2
	100 %	100 %	100 %

Substantially all of PT-FI's concentrate sales contracts provide final copper pricing in a specified future month (generally one to four months from the shipment date) primarily based on quoted LME monthly average spot copper prices. Revenues from PT-FI's concentrate sales are recorded net of royalties, export duties, treatment charges and allowances for unrecoverable metals.

**Gold Products and Sales**

We produce gold almost exclusively from the Grasberg minerals district. Gold is primarily sold as a component of our copper concentrate or in slimes, which are a product of the smelting and refining process at Atlantic Copper. Gold generally is priced at the average London price for a specified month near the month of shipment. Revenues from gold sold as a component of our copper concentrate are recorded net of treatment and refining charges. Revenues from gold sold in slimes are recorded net of refining charges.

**Molybdenum Products and Sales**

We are the world's largest producer of molybdenum and molybdenum-based chemicals. In addition to production from the Henderson and Climax molybdenum mines, we produce molybdenum concentrate at certain of the North America copper mines and the Cerro Verde copper mine in Peru. The majority of our molybdenum concentrate is processed in our own conversion facilities. Our molybdenum sales are primarily priced based on the average published Metals

Week price for the month prior to the month of shipment.

## LABOR MATTERS

At December 31, 2017, we employed approximately 25,200 people (11,000 in North America, 7,000 in Indonesia, 5,800 in South America and 1,400 in Europe and other locations). We also had contractors that employ personnel at many of our operations, including approximately 21,100 at the Grasberg minerals district in Indonesia, 3,800 in North America, 2,500 at our South America mining operations and 600 in Europe and other locations. Employees represented by unions at December 31, 2017, are listed below, with the number of employees represented and the expiration date of the applicable union agreements:

Location	Number of Unions	Number of Union-Represented Employees	Expiration Date
PT-FI – Indonesia	2	5,009	September 2019
Cerro Verde – Peru	1	3,176	August 2018
El Abra – Chile	2	614	April 2020
Atlantic Copper – Spain	2	445	March 2018 <sup>a</sup>
Kokkola - Finland <sup>b</sup>	3	403	November 2020
Rotterdam – The Netherlands	1	59	September 2018
Kisanfu – Africa Exploration <sup>h</sup>	2	56	N/A <sup>c</sup>
Stowmarket - United Kingdom	1	40	May 2020

<sup>a</sup> The Collective Labor Agreement between Atlantic Copper and its workers' unions expired in December 2015, but has been extended through March 2018 by mutual agreement from both parties in accordance with Spanish law.

<sup>b</sup> These locations are held for sale at December 31, 2017 (refer to Note 2 for further discussion).

<sup>c</sup> The Collective Labor Agreement between Kisanfu and its unions has no expiration date, but can be amended at any time in accordance with an established process.

Refer to Item 1A. "Risk Factors" for further information on labor matters.

## ENVIRONMENTAL AND RECLAMATION MATTERS

The cost of complying with environmental laws and regulations is fundamental to and a substantial cost of our business. For information about environmental regulation, litigation and related costs, refer to Item 1A. "Risk Factors" and Notes 1 and 12.

## COMPETITION

The top 10 producers of copper comprise approximately 45 percent of total worldwide mined copper production. We currently rank second among those producers, with approximately seven percent of estimated total worldwide mined copper production. Our competitive position is based on the size, quality and grade of our ore bodies and our ability to manage costs compared with other producers. We have a diverse portfolio of mining operations with varying ore grades and cost structures. Our costs are driven by the location, grade and nature of our ore bodies, and the level of input costs, including energy, labor and equipment. The metals markets are cyclical, and our ability to maintain our competitive position over the long term is based on our ability to acquire and develop quality deposits, hire and retain a skilled workforce, and to manage our costs.



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### MINING OPERATIONS

Following are maps and descriptions of our mining operations in North America (including both copper and molybdenum operations), South America and Indonesia.

#### North America

In the U.S., most of the land occupied by our copper and molybdenum mines, concentrators, SX/EW facilities, smelter, refinery, rod mills, molybdenum roasters and processing facilities is generally owned by us or is located on unpatented mining claims owned by us. Certain portions of our Bagdad, Sierrita, Miami, Chino, Tyrone, Henderson and Climax operations are located on government-owned land and are operated under a Mine Plan of Operations or other use permit. Various federal and state permits or leases on government land are held for purposes incidental to mine operations.

#### Morenci

We own a 72 percent undivided interest in Morenci, with the remaining 28 percent owned by Sumitomo Metal Mining Arizona, Inc. (15 percent) and SMM Morenci, Inc. (13 percent). Each partner takes in kind its share of Morenci's production.

Morenci is an open-pit copper mining complex that has been in continuous operation since 1939 and previously was mined through underground workings. Morenci is located in Greenlee County, Arizona, approximately 50 miles northeast of Safford on U.S. Highway 191. The site is accessible by a paved highway and a railway spur.

The Morenci mine is a porphyry copper deposit that has oxide, secondary sulfide and primary sulfide mineralization. The predominant oxide copper mineral is chrysocolla. Chalcocite is the most important secondary copper sulfide mineral, with chalcopyrite as the dominant primary copper sulfide.

The Morenci operation consists of two concentrators capable of milling 115,000 metric tons of ore per day, which produce copper and molybdenum concentrate; a 68,000 metric ton-per-day, crushed-ore leach pad and stacking system; a low-grade run-of-mine (ROM) leaching system; four SX plants; and three EW tank houses that produce copper cathode. Total EW tank house capacity is approximately 900 million pounds of copper per year. During second-quarter 2015, Morenci's concentrate leach, direct-electrowinning facility (which was placed on care-and-maintenance status in early 2009) resumed operation. Morenci's available mining fleet consists of one hundred and eleven 236-metric ton haul trucks loaded by 13 shovels with bucket sizes ranging from 47 to 57 cubic meters, which are capable of moving an average of 815,000 metric tons of material per day.

The Morenci mill expansion project, which achieved full rates in second-quarter 2015, expanded mill capacity from 50,000 metric tons of ore per day to approximately 115,000 metric tons of ore per day. Morenci's production, including our joint venture partner's share, totaled 1.0 billion pounds of copper and 12 million pounds of molybdenum in 2017, 1.1 billion pounds of copper and 15 million pounds of molybdenum in 2016, and 1.1 billion pounds of copper and 7 million pounds of molybdenum in 2015.

Morenci is located in a desert environment with rainfall averaging 13 inches per year. The highest bench elevation is 2,000 meters above sea level, and the ultimate pit bottom is expected to have an elevation of 840 meters above sea level. The Morenci operation encompasses approximately 68,355 acres, comprising 51,165 acres of patented

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mining claims and other fee lands, 14,470 acres of unpatented mining claims and 2,720 acres of land held by state or federal permits, easements and rights-of-way.

The Morenci operation's electrical power is primarily sourced from Tucson Electric Power Company, Arizona Public Service Company and the Luna Energy facility in Deming, New Mexico. Although we believe the Morenci operation has sufficient water sources to support current operations, we are a party to litigation that may impact our water rights claims or rights to continued use of currently available water supplies, which could adversely affect our water supply for the Morenci operation. Refer to Item 1A. "Risk Factors" and Item 3. "Legal Proceedings" for further discussion.

Bagdad

Our wholly owned Bagdad mine is an open-pit copper and molybdenum mining complex located in Yavapai County in west-central Arizona. It is approximately 60 miles west of Prescott and 100 miles northwest of Phoenix. The property can be reached by Arizona Highway 96, which ends at the town of Bagdad. The closest railroad is at Hillside, Arizona, approximately 24 miles southeast on Arizona Highway 96. The open-pit mining operation has been ongoing since 1945, and prior mining was conducted through underground workings.

The Bagdad mine is a porphyry copper deposit containing both sulfide and oxide mineralization. Chalcopyrite and molybdenite are the dominant primary sulfides and are the primary economic minerals in the mine. Chalcocite is the most common secondary copper sulfide mineral, and the predominant oxide copper minerals are chrysocolla, malachite and azurite.

The Bagdad operation consists of a 75,000 metric ton-per-day concentrator that produces copper and molybdenum concentrate, an SX/EW plant that can produce up to 32 million pounds per year of copper cathode from solution generated by low-grade stockpile leaching, and a pressure-leach plant to process molybdenum concentrate. The available mining fleet consists of thirty 235-metric ton haul trucks loaded by five shovels with bucket sizes ranging from 30 to 48 cubic meters, which are capable of moving an average of 250,000 metric tons of material per day.

Bagdad's production totaled 173 million pounds of copper and 9 million pounds of molybdenum in 2017, 177 million pounds of copper and 8 million pounds of molybdenum in 2016, and 210 million pounds of copper and 9 million pounds of molybdenum in 2015.

Bagdad is located in a desert environment with rainfall averaging 15 inches per year. The highest bench elevation is 1,200 meters above sea level, and the ultimate pit bottom is expected to be 310 meters above sea level. The Bagdad operation encompasses approximately 21,750 acres, comprising 21,150 acres of patented mining claims and other fee lands and 600 acres of unpatented mining claims.

Bagdad receives electrical power from Arizona Public Service Company. We believe the Bagdad operation has sufficient water sources to support current operations.

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### Safford

Our wholly owned Safford mine has been in operation since 2007 and is an open-pit copper mining complex located in Graham County, Arizona, approximately 8 miles north of the town of Safford and 170 miles east of Phoenix. The site is accessible by paved county road off U.S. Highway 70.

The Safford mine includes two copper deposits that have oxide mineralization overlaying primary copper sulfide mineralization. The predominant oxide copper minerals are chrysocolla and copper-bearing iron oxides with the predominant copper sulfide material being chalcopyrite.

The property is a mine-for-leach project and produces copper cathode. The operation consists of two open pits feeding a crushing facility with a capacity of 103,000 metric tons per day. The crushed ore is delivered to leach pads by a series of overland and portable conveyors. Leach solutions feed a SX/EW facility with a capacity of 240 million pounds of copper per year. A sulfur burner plant is also in operation at Safford, providing a cost-effective source of sulphuric acid used in SX/EW operations. The available mining fleet consists of sixteen 235-metric ton haul trucks loaded by four shovels with bucket sizes ranging from 31 to 34 cubic meters, which are capable of moving an average of 225,000 metric tons of material per day.

Safford's copper production totaled 150 million pounds in 2017, 230 million pounds in 2016 and 202 million pounds in 2015.

Through exploration drilling, we have identified a significant resource at our wholly owned Lone Star project located near the Safford operation. We have commenced a project to develop the Lone Star oxide ores with first production expected by the end of 2020. Total estimated capital costs for the project, including mine equipment and pre-production stripping, approximates \$850 million and will benefit from the utilization of existing infrastructure at the Safford operation. Production from the Lone Star oxides is expected to average approximately 200 million pounds of copper per year with an approximate 20-year mine life. The project also advances the potential for development of a larger-scale district opportunity. We are conducting additional drilling as we continue to evaluate longer term opportunities available from the significant sulfide potential in the Safford/Lone Star minerals district.

Safford is located in a desert environment with rainfall averaging 10 inches per year. The highest bench elevation is 1,250 meters above sea level, and the ultimate pit bottom is expected to have an elevation of 750 meters above sea level. The Safford operation encompasses approximately 25,000 acres, comprising 21,000 acres of patented lands, 3,950 acres of unpatented lands and 50 acres of land held by federal permit.

The Safford operation's electrical power is primarily sourced from Tucson Electric Power Company, Arizona Public Service Company and the Luna Energy facility. Although we believe the Safford operation has sufficient water sources to support current operations, we are a party to litigation that may impact our water right claims or rights to continued use of currently available water supplies, which could adversely affect our water supply for the Safford operation. Refer to Item 1A. "Risk Factors" and Item 3. "Legal Proceedings" for further discussion.



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### Sierrita

Our wholly owned Sierrita mine has been in operation since 1959 and is an open-pit copper and molybdenum mining complex located in Pima County, Arizona, approximately 20 miles southwest of Tucson and 7 miles west of the town of Green Valley and Interstate Highway 19. The site is accessible by a paved highway and by rail.

The Sierrita mine is a porphyry copper deposit that has oxide, secondary sulfide and primary sulfide mineralization. The predominant oxide copper minerals are malachite, azurite and chrysocolla. Chalcocite is the most important secondary copper sulfide mineral, and chalcopyrite and molybdenite are the dominant primary sulfides.

The Sierrita operation includes a 100,000 metric ton-per-day concentrator that produces copper and molybdenum concentrate. Sierrita also produces copper from a ROM oxide-leaching system. Cathode copper is plated at the Twin Buttes EW facility, which has a design capacity of approximately 50 million pounds of copper per year. The Sierrita operation also has molybdenum facilities consisting of a leaching circuit, two molybdenum roasters and a packaging facility. The molybdenum facilities process molybdenum concentrate produced by Sierrita, from our other mines and from third-party sources. The available mining fleet consists of twenty-two 235-metric ton haul trucks loaded by three shovels with bucket sizes ranging from 34 to 56 cubic meters, which are capable of moving an average of 175,000 metric tons of material per day.

Sierrita's production totaled 160 million pounds of copper and 15 million pounds of molybdenum in 2017, 162 million pounds of copper and 14 million pounds of molybdenum in 2016, and 189 million pounds of copper and 21 million pounds of molybdenum in 2015.

Sierrita is located in a desert environment with rainfall averaging 12 inches per year. The highest bench elevation is 1,160 meters above sea level, and the ultimate pit bottom is expected to be 440 meters above sea level. The Sierrita operation, including the adjacent Twin Buttes site (refer to "Smelting Facilities and Other Mining Properties" for further discussion), encompasses approximately 37,650 acres, comprising 13,300 acres of patented mining claims and 24,350 acres of split-estate lands.

Sierrita receives electrical power through long-term contracts with the Tucson Electric Power Company. Although we believe the Sierrita operation has sufficient water sources to support current operations, we are a party to litigation that may impact our water rights claims or rights to continued use of currently available water supplies, which could adversely affect our water supply for the Sierrita operation. Refer to Item 1A. "Risk Factors" and Item 3. "Legal Proceedings" for further discussion.

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### Miami

Our wholly owned Miami mine is an open-pit copper mining complex located in Gila County, Arizona, approximately 90 miles east of Phoenix and 6 miles west of the city of Globe on U.S. Highway 60. The site is accessible by a paved highway and by rail.

The Miami mine is a porphyry copper deposit that has leachable oxide and secondary sulfide mineralization. The predominant oxide copper minerals are chrysocolla, copper-bearing clays, malachite and azurite. Chalcocite and covellite are the most important secondary copper sulfide minerals.

Since about 1915, the Miami mining operation had processed copper ore using both flotation and leaching technologies. The design capacity of the SX/EW plant is 200 million pounds of copper per year. Miami is no longer mining ore, but currently produces copper through leaching material already placed on stockpiles, which is expected to continue until 2022. Miami's copper production totaled 19 million pounds in 2017, 25 million pounds in 2016 and 43 million pounds in 2015.

Miami is located in a desert environment with rainfall averaging 18 inches per year. The highest bench elevation is 1,390 meters above sea level, and the pit bottom has an elevation of 810 meters above sea level. The Miami operation encompasses approximately 9,100 acres, comprising 8,750 acres of patented mining claims and other fee lands and 350 acres of unpatented mining claims.

Miami receives electrical power through long-term contracts with the Salt River Project and natural gas through long-term contracts with El Paso Natural Gas as the transporter. We believe the Miami operation has sufficient water sources to support current operations.

### Chino and Tyrone

#### Chino

Our wholly owned Chino mine is an open-pit copper mining complex located in Grant County, New Mexico, approximately 15 miles east of the town of Silver City off of State Highway 180. The mine is accessible by paved roads and by rail. Chino has been in operation since 1910.

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The Chino mine is a porphyry copper deposit with adjacent copper skarn deposits. There is leachable oxide, secondary sulfide and millable primary sulfide mineralization. The predominant oxide copper mineral is chrysocolla. Chalcocite is the most important secondary copper sulfide mineral, and chalcopyrite and molybdenite the dominant primary sulfides.

The Chino operation consists of a 36,000 metric ton-per-day concentrator that produces copper and molybdenum concentrate, and a 150 million pound-per-year SX/EW plant that produces copper cathode from solution generated by ROM leaching. The available mining fleet consists of thirty-seven 240-metric ton haul trucks loaded by four shovels with bucket sizes ranging from 42 to 48 cubic meters, which are capable of moving an average of 235,000 metric tons of material per day.

Chino's copper production totaled 215 million pounds in 2017, 308 million pounds in 2016 and 314 million pounds in 2015.

Chino is located in a desert environment with rainfall averaging 16 inches per year. The highest bench elevation is 2,250 meters above sea level, and the ultimate pit bottom is expected to be 1,500 meters above sea level. The Chino operation encompasses approximately 118,600 acres, comprising 113,200 acres of patented mining claims and other fee lands and 5,400 acres of unpatented mining claims.

Chino receives power from the Luna Energy facility and from the open market. We believe Chino has sufficient water resources to support current operations.

### Tyrone

Our wholly owned Tyrone mine is an open-pit copper mining complex which has been in operation since 1967. It is located in Grant County, New Mexico, approximately 10 miles south of Silver City, New Mexico, along State Highway 90. The site is accessible by paved road and by rail.

The Tyrone mine is a porphyry copper deposit. Mineralization is predominantly secondary sulfide consisting of chalcocite, with leachable oxide mineralization consisting of chrysocolla.

Copper processing facilities consist of a SX/EW operation with a maximum capacity of approximately 100 million pounds of copper cathode per year. The available mining fleet consists of seven 240-metric ton haul trucks loaded by one shovel with a bucket size of 47 cubic meters, which is capable of moving an average of 49,000 metric tons of material per day.

Tyrone's copper production totaled 61 million pounds in 2017, 76 million pounds in 2016 and 84 million pounds in 2015.

Tyrone is located in a desert environment with rainfall averaging 16 inches per year. The highest bench elevation is 2,000 meters above sea level, and the ultimate pit bottom is expected to have an elevation of 1,500 meters above sea level. The Tyrone operation encompasses approximately 35,200 acres, comprising 18,750 acres of patented mining claims and other fee lands and 16,450 acres of unpatented mining claims.

Tyrone receives electrical power from the Luna Energy facility and from the open market. We believe the Tyrone operation has sufficient water resources to support current operations.



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### Henderson and Climax

#### Henderson

Our wholly owned Henderson molybdenum mine has been in operation since 1976 and is located approximately 42 miles west of Denver, Colorado, off U.S. Highway 40. Nearby communities include the towns of Empire, Georgetown and Idaho Springs. The Henderson mill site is located approximately 15 miles west of the mine and is accessible from Colorado State Highway 9. The Henderson mine and mill are connected by a 10-mile conveyor tunnel under the Continental Divide and an additional five-mile surface conveyor. The tunnel portal is located five miles east of the mill.

The Henderson mine is a porphyry molybdenum deposit, with molybdenite as the primary sulfide mineral.

The Henderson operation consists of a large block-cave underground mining complex feeding a concentrator with a current capacity of approximately 32,000 metric tons per day. Henderson has the capacity to produce approximately 35 million pounds of molybdenum per year. The majority of the molybdenum concentrate produced is shipped to our Fort Madison, Iowa, processing facility. The available underground mining equipment fleet consists of seventeen 9-metric ton load-haul-dump (LHD) units and seven 73-metric ton haul trucks, which deliver ore to a gyratory crusher feeding a series of three overland conveyors to the mill stockpiles.

In response to market conditions, the Henderson molybdenum mine operated at reduced rates during 2017 and 2016. Henderson's molybdenum production totaled 12 million pounds in 2017, 10 million pounds in 2016 and 25 million pounds in 2015.

The Henderson mine is located in a mountainous region with the main access shaft at 3,180 meters above sea level. The main production levels are currently at elevations of 2,200 and 2,350 meters above sea level. This region experiences significant snowfall during the winter months.

The Henderson mine and mill operations encompass approximately 11,900 acres, comprising 11,850 acres of patented mining claims and other fee lands and a 50-acre easement with the U.S. Forest Service for the surface portion of the conveyor corridor.

Henderson operations receive electrical power through long-term contracts with Xcel Energy and natural gas through long-term contracts with BP Energy Company (with Xcel Energy as the transporter). We believe the Henderson operation has sufficient water resources to support current operations.

#### Climax

Our wholly owned Climax mine is located 13 miles northeast of Leadville, Colorado, off Colorado State Highway 91 at the top of Fremont Pass. The mine is accessible by paved roads.

The Climax ore body is a porphyry molybdenum deposit, with molybdenite as the primary sulfide mineral.

The Climax open-pit mine includes a 25,000 metric ton-per-day mill facility. Climax has the capacity to produce approximately 30 million pounds of molybdenum per year. The available mining fleet consists of nine 177-metric ton haul trucks loaded by two hydraulic shovels with bucket sizes of 34 cubic meters, which are capable of moving an average of 90,000 metric tons of material per day.

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Molybdenum production from Climax totaled 20 million pounds in 2017, 16 million pounds in 2016 and 23 million pounds in 2015.

The Climax mine is located in a mountainous region. The highest bench elevation is approximately 4,050 meters above sea level, and the ultimate pit bottom is expected to have an elevation of approximately 3,100 meters above sea level. This region experiences significant snowfall during the winter months.

The operations encompass approximately 14,350 acres, consisting primarily of patented mining claims and other fee lands.

Climax operations receive electrical power through long-term contracts with Xcel Energy and natural gas through long-term contracts with Andarko Energy and BP Energy Company (with Xcel Energy as the transporter). We believe the Climax operation has sufficient water resources to support current operations.

### South America

At our operations in South America, mine properties and facilities are controlled through mining claims or concessions under the general mining laws of the relevant country. The claims or concessions are owned or controlled by the operating companies in which we or our subsidiaries have a controlling ownership interest. Roads, power lines and aqueducts are controlled by easements.

### Cerro Verde

We have a 53.56 percent ownership interest in Cerro Verde, with the remaining 46.44 percent held by SMM Cerro Verde Netherlands B.V. (21.0 percent), Compañía de Minas Buenaventura S.A.A. (19.58 percent) and other stockholders whose shares are publicly traded on the Lima Stock Exchange (5.86 percent).

Cerro Verde is an open-pit copper and molybdenum mining complex that has been in operation since 1976 and is located 20 miles southwest of Arequipa, Peru. The site is accessible by paved highway. Cerro Verde's copper cathode and concentrate production that is not sold locally is transported approximately 70 miles by truck and by rail to the Port of Matarani for shipment to international markets.

The Cerro Verde mine is a porphyry copper deposit that has oxide, secondary sulfide and primary sulfide mineralization. The predominant oxide copper minerals are brochantite, chrysocolla, malachite and copper "pitch." Chalcocite and covellite are the most important secondary copper sulfide minerals. Chalcopyrite and molybdenite are the dominant primary sulfides.

Cerro Verde's operation consists of an open-pit copper mine, a 360,000 metric ton-per-day concentrator and SX/EW leaching facilities. Leach copper production is derived from a 39,000 metric ton-per-day crushed leach facility and a ROM leach system. This SX/EW leaching operation has a capacity of approximately 200 million pounds of copper per year.

The Cerro Verde expansion project commenced operations in September 2015. The project expanded the concentrator facilities from 120,000 metric tons of ore per day to 360,000 metric tons of ore per day. Cerro Verde's expanded operations benefit from its large-scale, long-lived reserves and cost efficiencies.

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The available fleet consists of twenty 290-metric ton haul trucks and ninety-three 230-metric ton haul trucks loaded by ten electric shovels with bucket sizes ranging in size from 33 to 57 cubic meters and two hydraulic shovels with a bucket size of 21 cubic meters. This fleet is capable of moving an average of approximately 910,000 metric tons of material per day.

Cerro Verde's production totaled 1.1 billion pounds of copper and 27 million pounds of molybdenum in 2017, 1.1 billion pounds of copper and 21 million pounds of molybdenum in 2016, and 545 million pounds of copper and 7 million pounds of molybdenum in 2015.

Cerro Verde is located in a desert environment with rainfall averaging 1.5 inches per year and is in an active seismic zone. The highest bench elevation is 2,750 meters above sea level, and the ultimate pit bottom is expected to be 1,570 meters above sea level. The Peruvian general mining law and Cerro Verde's mining stability agreement grant the surface rights of mining concessions located on government land. Additional government land, if obtained after 1997, must be leased or purchased. Cerro Verde has a mining concession covering approximately 178,000 acres, including access to 14,500 acres granted through an easement from the Regional Government of Arequipa, plus 212 acres of owned property, and 367 acres of rights-of-way outside the mining concession area.

Cerro Verde receives electrical power, including hydro-generated power, under long-term contracts with Kallpa Generación SA, ElectroPeru and Engie Energia Peru S.A.

Water for our Cerro Verde processing operations comes from renewable sources through a series of storage reservoirs on the Rio Chili watershed that collect water primarily from seasonal precipitation. In 2015, Cerro Verde completed the construction of a wastewater treatment plant that intercepts raw sewage that would otherwise be discharged into the Rio Chili and processes it for both use at the Cerro Verde mine and for recharge of treated water into the Rio Chili. We believe the Cerro Verde operation has sufficient water resources to support current operations. For further discussion of risks associated with the availability of water, see Item 1A. "Risk Factors."

## El Abra

We own a 51 percent interest in El Abra, and the remaining 49 percent interest is held by the state-owned copper enterprise Corporación Nacional del Cobre de Chile (CODELCO).

El Abra is an open-pit copper mining complex that has been in operation since 1996 and is located 47 miles north of Calama in Chile's El Loa province, Region II. The site is accessible by paved highway and by rail.

The El Abra mine is a porphyry copper deposit that has sulfide and oxide mineralization. The predominant primary sulfide copper minerals are bornite and chalcopyrite. There is a minor amount of secondary sulfide mineralization as chalcocite. The oxide copper minerals are chrysocolla and pseudomalachite. There are lesser amounts of copper-bearing clays and tenorite.

The El Abra operation consists of an open-pit copper mine and a SX/EW facility with a capacity of 500 million pounds of copper cathode per year from a 125,000 metric ton-per-day crushed leach circuit and a similar-sized ROM leaching operation. The available fleet consists of twenty-two 266-metric ton haul trucks loaded by four shovels with buckets ranging in size from 29 to 41 cubic meters, which are capable of moving an average of 214,000 metric tons of material per day.

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El Abra's copper production totaled 173 million pounds in 2017, 220 million pounds in 2016 and 324 million pounds in 2015. Beginning in the second half of 2015, El Abra operated at reduced rates to achieve lower operating and labor costs, defer capital expenditures and extend the life of the existing operations. El Abra is expected to operate at full capacity during 2018.

We continue to evaluate a major expansion at El Abra to process additional sulfide material and to achieve higher recoveries. Exploration results in recent years at El Abra indicate a significant sulfide resource, which could potentially support a major mill project similar to facilities recently constructed at Cerro Verde. Future investments will be dependent on technical studies, which are being advanced, economic factors and market conditions.

El Abra is located in a desert environment with rainfall averaging less than one inch per year and is in an active seismic zone. The highest bench elevation is 4,180 meters above sea level, and the ultimate pit bottom is expected to be 3,430 meters above sea level. El Abra controls a total of approximately 151,300 acres of mining claims covering the ore deposit, stockpiles, process plant, and water wellfield and pipeline. In addition, El Abra has land surface rights for the road between the processing plant and the mine, the water wellfield, power transmission lines and for the water pipeline from the Salar de Ascotán aquifer.

El Abra currently receives electrical power under a long-term contract with Engie Energia Chile S.A. Water for our El Abra processing operations comes from the continued pumping of groundwater from the Salar de Ascotán aquifer pursuant to regulatory approval. We believe El Abra has sufficient water rights and regulatory approvals to support current operations. For a discussion of risks associated with the availability of water, refer to Item 1A. "Risk Factors."

## Indonesia

**Ownership.** PT-FI is a limited liability company organized under the laws of the Republic of Indonesia. We directly own 81.28 percent of the outstanding common stock of PT-FI and indirectly own 9.36 percent through our wholly owned subsidiary, PT Indocopper Investama. In late 2017, the Indonesian government transferred its 9.36 percent ownership interest in PT-FI to PT Indonesia Asahan Aluminium (Inalum), a state-owned enterprise that is owned 100 percent by the Indonesian government.

PT-FI has an unincorporated joint venture with Rio Tinto, under which Rio Tinto has a 40 percent interest in certain assets and future production exceeding specified annual amounts of copper, gold and silver through 2022 in Block A of PT-FI's Contract of Work (COW), and after 2022, a 40 percent interest in all production from Block A. The Block A area is where all of PT-FI's proven and probable mineral reserves and all of its current mining operations are located. Refer to Note 3 for further discussion of the joint venture agreement.



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Contract of Work. PT-FI conducts its current exploration and mining operations in Indonesia through a COW with the Indonesian government. The COW governs our rights and obligations relating to taxes, exchange controls, royalties, repatriation and other matters, and was concluded pursuant to the 1967 Foreign Capital Investment Law, which expresses Indonesia's foreign investment policy and provides basic guarantees of remittance rights and protection against nationalization, a framework for economic incentives and basic rules regarding other rights and obligations of foreign investors. Specifically, the COW provides that the Indonesian government will not nationalize or expropriate PT-FI's mining operations. Any disputes regarding the provisions of the COW are subject to international arbitration.

PT-FI's original COW was entered into in 1967 and was replaced by the current COW in 1991. The initial term of the current COW expires in 2021, but the COW explicitly provides that it can be extended for two 10-year periods subject to Indonesian government approval, which pursuant to the COW cannot be withheld or delayed unreasonably. The COW allows us to conduct exploration, mining and production activities in the 24,700-acre Block A area. Under the COW, PT-FI has rights to conduct exploration activities in the Block B area currently covering 502,000 acres.

Under the COW, PT-FI pays royalties on copper, gold and silver in the concentrate it sells. A large part of the mineral royalties under Indonesian government regulations is designated to the provinces from which the minerals are extracted. In connection with its fourth concentrator mill expansion completed in 1998, PT-FI agreed to pay the Indonesian government additional royalties, which were not required by the COW, to provide further support to the local governments and to the people of the Indonesian province of Papua. Additionally, under a Memorandum of Understanding (MOU) entered into with the Indonesian government in July 2014, PT-FI agreed to increase royalty rates. PT-FI's royalties totaled \$173 million in 2017, \$131 million in 2016 and \$114 million in 2015. Refer to Note 13 for further discussion of PT-FI's royalty rates.

Regulatory Matters. Following the issuance of new regulations by the Indonesian government in early 2017 (which resulted in a temporary suspension of PT-FI's concentrate exports), PT-FI entered into a MOU in April 2017 confirming that the COW would continue to be valid and honored until replaced by a mutually agreed IUPK and investment stability agreement.

Following a framework understanding reached in August 2017, the parties have been engaged in negotiation and documentation of a special mining license (IUPK) and accompanying documentation for assurances on legal and fiscal terms to replace the COW while providing PT-FI with long-term mining rights through 2041. In addition, the IUPK would provide that PT-FI construct a smelter within five years of reaching a definitive agreement and include agreement for the divestment of 51 percent of the project area interests to Indonesian participants at fair market value. The parties continue to negotiate documentation on a comprehensive agreement for PT-FI's extended operations and to reach agreement on timing, process and governance matters relating to the divestment, with a mutual objective of completing negotiations and the required documentation during the first half of 2018.

In December 2017, PT-FI was granted an extension of its temporary IUPK through June 30, 2018, to enable exports to continue while negotiations on a definitive agreement proceed. In February 2018, PT-FI received an extension of its export license through February 15, 2019.

Until a definitive agreement is reached, PT-FI has reserved all rights under its COW, including dispute resolution procedures. We cannot predict whether PT-FI will be successful in reaching a satisfactory agreement on the terms of its long-term mining rights. If PT-FI is unable to reach a definitive agreement with the Indonesian government on its long-term mining rights, we intend to reduce or defer investments significantly in underground development projects and will pursue dispute resolution procedures under the COW. Refer to Note 13 and Item 1A. "Risk Factors" for further discussion of these regulatory matters and risks associated with operations in Indonesia.

Grasberg Minerals District. PT-FI operates in the remote highlands of the Sudirman Mountain Range in the province of Papua, Indonesia, which is on the western half of the island of New Guinea. We and our predecessors have been the only operator of exploration and mining activities in Block A since 1967.

The Grasberg minerals district has three operating mines, the Grasberg open pit, the Deep Ore Zone (DOZ) underground mine and the Big Gossan underground mine. In September 2015, PT-FI initiated pre-commercial production, which represents ore extracted during the development phase for the purpose of obtaining access to the ore body, at the Deep Mill Level Zone (DMLZ) underground mine.

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As further discussed in MD&A, PT-FI also has several projects in progress in the Grasberg minerals district related to the development of the large-scale, long-lived, high-grade underground ore bodies located beneath and nearby the Grasberg open pit. In aggregate, these underground ore bodies are expected to produce large-scale quantities of copper and gold following the transition from the Grasberg open pit. Substantial progress has been made to prepare for the transition to mining of the Grasberg Block Cave underground mine. Mine development activities are sufficiently advanced to commence caving in early 2019. The ore flow system and underground rail line are expected to be installed during 2018.

PT-FI's production, including our joint venture partner's share, totaled 1.0 billion pounds of copper and 1.6 million ounces of gold in 2017, 1.1 billion pounds of copper and 1.1 million ounces of gold in 2016, and 752 million pounds of copper and 1.2 million ounces of gold in 2015.

Our principal source of power for all our Indonesian operations is a coal-fired power plant that we built in 1998. Diesel generators supply peaking and backup electrical power generating capacity. A combination of naturally occurring mountain streams and water derived from our underground operations provides water for our operations. Our Indonesian operations are in an active seismic zone and experience average annual rainfall of approximately 200 inches.

### Grasberg Open Pit

PT-FI began open-pit mining of the Grasberg ore body in 1990 and is currently mining the final phase of the Grasberg open pit, which contains high copper and gold ore grades. PT-FI expects to mine high-grade ore over the next several quarters prior to transitioning to the Grasberg Block Cave underground mine in the first half of 2019. Production from the ore stockpiles, which are located outside of the pit limits, is expected to continue through the end of 2019. Production in the open pit is currently at the 3,200- to 3,400-meter elevation level and totaled 37 million metric tons of ore in 2017, which provided 72 percent of PT-FI's 2017 mill feed.

The current open-pit equipment fleet consists of over 500 units. The larger mining equipment directly associated with production includes an available fleet of 99 haul trucks with payloads of 218 metric tons and 15 shovels with bucket sizes ranging from 17 to 42 cubic meters, which are capable of moving an average of 340,000 metric tons of material per day.

Crushing and conveying systems are integral to the Grasberg mine and provide the capacity to transport more than 250,000 metric tons of ore per day. Ore milled from the Grasberg open pit averaged 101,800 metric tons per day in 2017, 119,700 metric tons per day in 2016 and 115,900 metric tons per day in 2015.

### DOZ Underground Mine

The DOZ ore body lies vertically below the now depleted Intermediate Ore Zone. PT-FI began production from the DOZ ore body in 1989 using open-stope mining methods, but suspended production in 1991 in favor of production from the Grasberg open pit. Production resumed in September 2000 using the block-cave method and is at the 3,110-meter elevation level.

The DOZ is a mature block-cave mine that previously operated at 80,000 metric tons of ore per day. Current operating rates from the DOZ underground mine are driven by the value of the incremental DOZ ore grade compared to the ore from the Grasberg open pit and ore grade material from the development of the DMLZ and Grasberg Block Cave underground mines. Ore milled from the DOZ underground mine averaged 31,200 metric tons of ore per day in 2017, 38,000 metric tons of ore per day in 2016 and 43,700 metric tons of ore per day in 2015. Production at the DOZ underground mine is expected to continue through 2021.

The DOZ mine fleet consists of 159 pieces of mobile equipment. The primary mining equipment directly associated with production and development includes an available fleet of 45 LHD units and 22 haul trucks. Each production LHD unit typically carries approximately 11 metric tons of ore. Using ore passes and chutes, the LHD units transfer ore into 55-metric ton capacity haul trucks. The trucks dump into two gyratory crushers, and the ore is then conveyed to the surface stockpiles for processing.

The success of the development of the DOZ mine, one of the world's largest underground mines, provides confidence in the future development of PT-FI's large-scale, underground ore bodies.

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### DMLZ Underground Mine

The DMLZ ore body lies below the DOZ underground mine at the 2,590-meter elevation and represents the downward continuation of mineralization in the Ertsberg East Skarn system and neighboring Ertsberg porphyry. Ore milled from the DMLZ underground mine averaged 3,200 metric tons of ore per day in 2017, 4,400 metric tons per day in 2016, and 2,900 metric tons per day in 2015. During 2017 and late January 2018, the DMLZ underground mine was impacted by mining-induced seismic activity, which is not uncommon in block cave mining. To mitigate the impact of these events, PT-FI implemented a revised mine sequence; upgraded support systems, blasting and re-entry protocols; and improved mine monitoring and analysis processes. Development activities and mining are taking place in unaffected areas while impacted areas are being assessed, rehabilitated and prepared to be placed back into use. Targeted production rates once the DMLZ underground mine reaches full capacity are expected to approximate 80,000 metric tons of ore per day in 2021. Production at the DMLZ underground mine is expected to continue through 2041.

The DMLZ mine fleet consists of over 230 pieces of mobile equipment, which includes 27 LHD units and 15 haul trucks used in production and development activities.

### Big Gossan Underground Mine

The Big Gossan underground mine was on care-and-maintenance status during most of 2017 and production restarted in fourth-quarter 2017. The Big Gossan mine lies underground and adjacent to the current mill site. It is a tabular, near vertical ore body with approximate dimensions of 1,200 meters along strike and 800 meters down dip with varying thicknesses from 20 meters to 120 meters. The mine utilizes a blasthole stoping method with delayed paste backfill. Stopes of varying sizes are mined and the ore dropped down passes to a truck haulage level. Trucks are chute loaded and transport the ore to a jaw crusher. The crushed ore is then hoisted vertically via a two-skip production shaft to a level where it is loaded onto a conveyor belt. The belt carries the ore to one of the main underground conveyors where the ore is transferred and conveyed to the surface stockpiles for processing.

The Big Gossan mine fleet consists of over 72 pieces of mobile equipment, which includes 9 LHD units and 9 haul trucks used in development and production activities.

**Description of Ore Bodies.** Our Indonesia ore bodies are located within and around two main igneous intrusions, the Grasberg monzodiorite and the Ertsberg diorite. The host rocks of these ore bodies include both carbonate and clastic rocks that form the ridge crests and upper flanks of the Sudirman Range, and the igneous rocks of monzonitic to dioritic composition that intrude them. The igneous-hosted ore bodies (the Grasberg open pit and block cave, and portions of the DOZ block cave) occur as vein stockworks and disseminations of copper sulfides, dominated by chalcopyrite and, to a lesser extent, bornite. The sedimentary-rock hosted ore bodies (portions of the DOZ and all of the Big Gossan) occur as “magnetite-rich, calcium/magnesian skarn” replacements, whose location and orientation are strongly influenced by major faults and by the chemistry of the carbonate rocks along the margins of the intrusions.

The copper mineralization in these skarn deposits is dominated by chalcopyrite, but higher bornite concentrations are common. Moreover, gold occurs in significant concentrations in all of the district’s ore bodies, though rarely visible to the naked eye. These gold concentrations usually occur as inclusions within the copper sulfide minerals, though, in some deposits, these concentrations can also be strongly associated with pyrite.

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The following diagram indicates the relative elevations (in meters) of our reported Indonesia ore bodies.

The following map, which encompasses an area of approximately 42 square kilometers (approximately 16 square miles), indicates the relative positions and sizes of our reported Indonesia ore bodies and their locations.

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## Smelting Facilities and Other Mining Properties

Atlantic Copper. Our wholly owned Atlantic Copper smelter and refinery is located on land concessions from the Huelva, Spain, port authorities, which are scheduled to expire in 2027.

The design capacity of the smelter is approximately 295,000 metric tons of copper per year, and the refinery has a capacity of 285,000 metric tons of copper per year. Atlantic Copper produced 283,100 metric tons of copper anode from its smelter and 271,400 metric tons of copper cathode from its refinery in 2017; 296,900 metric tons of copper anode from its smelter and 285,800 metric tons of copper cathode from its refinery in 2016; and 293,100 metric tons of copper anode from its smelter and 284,800 metric tons of copper cathode from its refinery in 2015.

Following is a summary of Atlantic Copper's concentrate purchases from third parties and our copper mining operations for the years ended December 31:

	2017	2016	2015
Third parties	67 %	77 %	71 %
North America copper mines	18	13	23
South America mining	15	7	3
Indonesia mining	—	3	3
	100 %	100 %	100 %

Atlantic Copper's major maintenance turnarounds typically occur approximately every eight years, with shorter-term maintenance turnarounds in the interim. Atlantic Copper completed a 68-day major maintenance turnaround in 2013 and a 27-day maintenance turnaround in 2017. The next 14-day maintenance turnaround is scheduled for 2019.

PT Smelting. PT-FI's COW required us to construct, or cause to be constructed, a smelter in Indonesia if we and the Indonesian government determined that such a project would be economically viable. In 1995, following the completion of a feasibility study, we entered into agreements relating to the formation of PT Smelting, an Indonesian company, and the construction of the copper smelter and refinery in Gresik, Indonesia. PT Smelting owns and operates the smelter and refinery. PT-FI owns 25 percent of PT Smelting, with the remainder owned by Mitsubishi Materials Corporation (60.5 percent), Mitsubishi Corporation RtM Japan Ltd. (9.5 percent) and JX Nippon Mining & Metals Corporation (5 percent).

PT-FI's contract with PT Smelting requires PT-FI to supply 100 percent of the copper concentrate requirements (at market rates subject to a minimum or maximum treatment charge rate) necessary for PT Smelting to produce 205,000 metric tons of copper annually on a priority basis. PT-FI may also sell copper concentrate to PT Smelting at market rates for quantities in excess of 205,000 metric tons of copper annually. PT-FI supplied 93 percent of PT Smelting's concentrate requirements in 2017, 88 percent in 2016 and 80 percent in 2015.

In early 2017, the Indonesian government issued new regulations to address exports of unrefined metals, including copper concentrate and anode slimes, and other matters related to the mining sector. These regulations permit the export of anode slimes, which is necessary for PT Smelting to continue operating. As a result of labor disturbances and a delay in the renewal of its export license for anode slimes, PT Smelting's operations were shut down from mid-January 2017 until early March 2017. In March 2017, PT Smelting's anode slimes export license was renewed through March 1, 2018. On February 15, 2018, PT Smelting submitted an application to renew its export license.

PT Smelting produced 245,800 metric tons of copper anode from its smelter and 247,800 metric tons of copper cathode from its refinery in 2017; 255,700 metric tons of copper anode from its smelter and 241,700 metric tons of copper cathode from its refinery in 2016; and 199,700 metric tons of copper anode from its smelter and 198,400 metric tons of copper cathode from its refinery in 2015. Following a temporary suspension in July 2015, PT Smelting operated at approximately 80 percent capacity from September 2015 to November 2015 when required repairs of an

acid plant cooling tower that was damaged during the suspension were completed.

PT Smelting's maintenance turnarounds (which range from two weeks to a month to complete) typically are expected to occur approximately every two years, with short-term maintenance turnarounds in the interim. PT Smelting completed a 25-day maintenance turnaround during 2016, and the next major maintenance turnaround is scheduled for third-quarter 2018.

Miami Smelter. We own and operate a smelter at our Miami mining operation in Arizona. The smelter has been operating for approximately 100 years and has been upgraded numerous times during that period to implement new



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technologies, improve production and comply with air quality requirements. The Miami smelter has completed the installation of emission control equipment that will allow it to operate in compliance with air quality standards effective in 2018 (refer to Item 1A. “Risk Factors” for further discussion).

The Miami smelter processes copper concentrate primarily from our North America copper mines. Concentrate processed through the smelter totaled 612,600 metric tons in 2017, 673,300 metric tons in 2016 and 686,700 metric tons in 2015. In addition, because sulphuric acid is a by-product of smelting concentrate, the Miami smelter is also the most significant source of sulphuric acid for our North America leaching operations.

Major maintenance turnarounds (which take approximately three weeks to complete) are anticipated to occur approximately every three years for the Miami smelter, with short-term maintenance turnarounds in the interim. The Miami smelter completed a major maintenance turnaround in second-quarter 2017, and the next major maintenance turnaround is scheduled for 2020.

**Rod & Refining Operations.** Our Rod & Refining operations consist of conversion facilities located in North America, including a refinery in El Paso, Texas; rod mills in El Paso, Texas, Norwich, Connecticut, and Miami, Arizona; and a specialty copper products facility in Bayway, New Jersey. We refine our copper anode production from our Miami smelter at our El Paso refinery. The El Paso refinery has the potential to operate at an annual production capacity of about 900 million pounds of copper cathode, which is sufficient to refine all of the copper anode we produce at our Miami smelter. Our El Paso refinery also produces nickel carbonate, copper telluride and autoclaved slimes material containing gold, silver, platinum and palladium.

**Molybdenum Conversion Facilities.** We process molybdenum concentrate at our conversion plants in the U.S. and Europe into such products as technical-grade molybdic oxide, ferromolybdenum, pure molybdic oxide, ammonium molybdates and molybdenum disulfide. We operate molybdenum roasters in Sierrita, Arizona; Fort Madison, Iowa; and Rotterdam, the Netherlands, and we operate a molybdenum pressure-leach plant in Bagdad, Arizona. We also produce ferromolybdenum for customers worldwide at our conversion plant located in Stowmarket, United Kingdom.

**Freeport Cobalt.** In March 2013, we acquired a cobalt chemical refinery in Kokkola, Finland, and the related sales and marketing business which provided direct end-market access for the cobalt hydroxide production at the Tenke mine. The joint venture operates under the name Freeport Cobalt, and we are the operator with an effective 56 percent ownership interest. The remaining effective ownership interest is held by Lundin Mining Corporation (24 percent) and La Générale des Carrières et des Mines (20 percent). The Kokkola refinery has an annual refining capacity of approximately 15,000 metric tons of cobalt.

As further discussed in Note 2, FCX expects to sell its interest in Freeport Cobalt, which is classified as held for sale at December 31, 2017.

**Other North America Copper Mines.** We also have five non-operating copper mines – Ajo, Bisbee, Tohono, Twin Buttes and Christmas, which are located in Arizona – that have been on care-and-maintenance status for several years and would require new or updated environmental studies, new permits, and additional capital investment, which could be significant, to return them to operating status.

## **Mining Development Projects and Exploration**

Capital expenditures for mining operations totaled \$1.4 billion (including \$0.9 billion for major projects) in 2017, \$1.6 billion (including \$1.2 billion for major projects) in 2016 and \$3.3 billion (including \$2.4 billion for major projects) in 2015. Capital expenditures for major projects during the three years ended December 31, 2017, were primarily associated with the Cerro Verde expansion project and ongoing underground development activities at Grasberg. Refer to MD&A for projected capital expenditures for the year 2018. If PT-FI is unable to reach a definitive

agreement with the Indonesian government on its long-term mining rights, we intend to reduce or defer investments significantly in underground development projects and will pursue dispute resolution procedures under PT-FI's COW.

We have several projects and potential opportunities to expand production volumes, extend mine lives and develop large-scale underground ore bodies. As further discussed in MD&A, our near-term major development projects primarily include the underground development activities in the Grasberg minerals district and development of the Lone Star oxide project. Considering the long-term nature and large size of our development projects, actual costs and timing could vary from estimates. Additionally, in response to market conditions and Indonesian regulatory

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uncertainty, the timing of our expenditures will continue to be reviewed. As further discussed in “Mining Operations - Indonesia,” PT-FI also committed to commence construction of a new smelter during a five year timeframe after obtaining an investment stability agreement providing equivalent rights with the same level of legal and fiscal certainty provided under PT-FI’s COW. Refer to Item 1A. “Risk Factors” for further discussion of Indonesia regulatory matters. We continue to review our mine development and processing plans to maximize the value of our mineral reserves.

We also have an additional long-term underground mine development project in the Grasberg minerals district for the Kucing Liar ore body, which lies on the southern flank of and underneath the southern portion of the Grasberg open pit at the 2,605-meter elevation level. We expect to mine the Kucing Liar ore body using the block-cave method; aggregate capital cost estimates for development of the Kucing Liar ore body are projected to approximate \$2.6 billion (which are expected to be made between 2019 and 2031). Additionally, our current mine development plans include approximately \$5.7 billion of capital expenditures at our processing facilities to optimize the handling of underground ore types once the Grasberg open-pit operations cease. We expect substantially all of these expenditures to be made between 2019 and 2034. The timing and development of this project is currently being reviewed.

Our mining exploration activities are generally associated with our existing mines focusing on opportunities to expand reserves and resources to support development of additional future production capacity. Exploration results continue to indicate opportunities for significant future potential reserve additions in North America and South America. Exploration spending associated with mining operations totaled \$72 million in 2017, \$44 million in 2016 and \$82 million in 2015. Exploration spending is expected to approximate \$65 million for the year 2018.

### Sources and Availability of Energy, Natural Resources and Raw Materials

Our copper mining operations require significant energy, principally diesel, electricity, coal and natural gas, most of which is obtained from third parties under long-term contracts. Energy represented 18 percent of our copper mine site operating costs in 2017, including purchases of approximately 196 million gallons of diesel fuel; 7,900 gigawatt hours of electricity at our North America and South America copper mining operations (we generate all of our power at our Indonesia mining operation); 700 thousand metric tons of coal for our coal power plant in Indonesia; and 1 million MMBtu (million British thermal units) of natural gas at certain of our North America mines. Based on current cost estimates, energy will approximate 20 percent of our copper mine site operating costs in 2018.

Our mining operations also require significant quantities of water for mining, ore processing and related support facilities. The loss of water rights for any of our mines, in whole or in part, or shortages of water to which we have rights, could require us to curtail or shut down mining operations. For a further discussion of risks and legal proceedings associated with the availability of water, refer to Item 1A. “Risk Factors” and Item 3. “Legal Proceedings.”

Sulphuric acid is used in the SX/EW process and is produced as a by-product of the smelting process at our smelters and from our sulfur burners at the Safford mine. Sulphuric acid needs in excess of the sulphuric acid produced by our operations are purchased from third parties.

### Community and Human Rights

We have adopted policies that govern our working relationships with the communities where we operate and are designed to guide our practices and programs in a manner that respects human rights and the culture of the local people impacted by our operations. We continue to make significant expenditures on community development, education, training and cultural programs, which include:

- comprehensive job training programs
- clean water and sanitation projects
-

public health programs, including malaria control and human immunodeficiency

virus

agricultural assistance programs

small and medium enterprise development programs

- basic education  
programs

cultural promotion and preservation programs

community infrastructure development

charitable donations

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In December 2000, we endorsed the joint U.S. State Department-British Foreign Office Voluntary Principles on Human Rights and Security (Voluntary Principles). We participated in developing these Voluntary Principles with other major natural resource companies and international human rights organizations and they are incorporated into our human rights policy. The Voluntary Principles provide guidelines for our security programs, including interaction with host-government security personnel, private security contractors and our internal security employees.

In February 2015, we updated our human rights policy to align our due diligence practices with the United Nations Guiding Principles on Business and Human Rights (UN Guiding Principles), and in August 2017, we updated our human rights policy to reflect our full commitment to the UN Guiding Principles. We have embarked on a program to plan and conduct site-level human rights impact assessments (HRIA) at operations with higher potential risks. HRIAs help us to embed human rights considerations into our business practices, including site-level sustainable development risk registers. In 2017, we completed a HRIA at our Cerro Verde operation in Peru. We also participate in a multi-industry human rights working group to gain insight from peer companies.

We believe that our social and economic development programs are responsive to the issues raised by the local communities near our areas of operation and help us maintain good relations with the surrounding communities and avoid disruptions of mining operations. As part of our ongoing commitment to sustainable community development, we make significant investments in social programs, including in-kind support and administration, across our global operations. Over the last five years, these investments have averaged \$166 million per year. Nevertheless, social and political instability in the areas of our operations may adversely impact our mining operations. Refer to Item 1A. "Risk Factors" for further discussion.

South America. Cerro Verde has provided a variety of community support projects over the years. Following engagements with regional and local governments, civic leaders and development agencies, in 2006, Cerro Verde committed to support the costs for a new potable water treatment plant to serve Arequipa. In addition, an agreement was reached with the Peruvian government for development of a water storage network that was financed by Cerro Verde and a distribution network that was financed by the Cerro Verde Civil Association.

Cerro Verde reached an agreement with the Regional Government of Arequipa, the National Government, SEDAPAR and other local institutions to allow it to finance, engineer and construct a wastewater treatment plant for the city of Arequipa, which was completed in 2015. The wastewater treatment plant supplements existing water supplies to support Cerro Verde's concentrator expansion and also improves the local water quality, enhances agriculture products grown in the area and reduces the risk of waterborne illnesses. In addition to these projects, Cerro Verde annually makes significant community development investments in the Arequipa region.

Security Matters. Consistent with our operating permits in Peru and our commitment to protect our employees and property, we have taken steps to provide a safe and secure working environment. As part of its security program, Cerro Verde maintains its own internal security department. Both employees and contractors perform functions such as protecting company facilities, monitoring shipments of supplies and products, assisting in traffic control and aiding in emergency response operations. The security department receives human rights and Voluntary Principles training annually. Some contractors assigned to protection of expatriate personnel are armed. These contractors also receive training in defensive driving and firearms handling. Cerro Verde's costs for its internal civilian security department totaled \$8 million in 2017 and \$6 million in both 2016 and 2015.

Cerro Verde, like all businesses and residents of Peru, relies on the Peruvian government for the maintenance of public order, upholding the rule of law and the protection of personnel and property. The Peruvian government is responsible for employing police personnel and directing their operations. Cerro Verde has limited public security forces in support of its operation, with the arrangement defined through an MOU with the Peruvian National Police. Cerro Verde's share of support costs for government-provided security approximated \$1 million in each of the years

2017, 2016 and 2015.

Indonesia. In 1996, PT-FI established the Freeport Partnership Fund for Community Development (the Partnership Fund) through which PT-FI has made available funding and technical assistance to support community development initiatives in the areas of health, education and economic development. PT-FI has committed through 2018 to provide one percent of its annual revenue for the development of the local people in its area of operations through the Partnership Fund. PT-FI recognized \$44 million in 2017, \$33 million in 2016 and \$27 million in 2015 for this commitment.

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The Amungme and Kamoro Community Development Organization (Lembaga Pengembangan Masyarakat Amungme dan Kamoro or LPMAM) oversees disbursement of the program funds we contribute to the Partnership Fund. LPMAM is governed by a board of commissioners and a board of directors, which are comprised of representatives from the local Amungme and Kamoro tribal communities, government leaders, church leaders, and one representative of PT-FI on each board. The Amungme and Kamoro people are original inhabitants of the land in our area of operations. In addition to the Partnership Fund, PT-FI annually makes significant investments in public health, education, community infrastructure and economic development.

Security Matters. Consistent with our COW in Indonesia and our commitment to protect our employees and property, we have taken steps to provide a safe and secure working environment. As part of its security program, PT-FI maintains its own internal security department. Both employees and contractors are unarmed and perform functions such as protecting company facilities, monitoring shipments of supplies and products, assisting in traffic control and aiding in emergency response operations. The security department receives human rights training annually.

PT-FI's share of costs for its internal civilian security department totaled \$54 million in 2017 and \$58 million for both 2016 and 2015.

PT-FI, and all businesses and residents of Indonesia, rely on the Indonesian government for the maintenance of public order, upholding the rule of law and the protection of personnel and property. The Grasberg minerals district has been designated by the Indonesian government as one of Indonesia's vital national assets. This designation results in the police, and to a lesser extent, the military, playing a significant role in protecting the area of our operations. The Indonesian government is responsible for employing police and military personnel and directing their operations.

From the outset of PT-FI's operations, the Indonesian government has looked to PT-FI to provide logistical and infrastructure support and assistance for these necessary services because of the limited resources of the Indonesian government and the remote location of and lack of development in Papua. PT-FI's financial support for the Indonesian government security institutions assigned to the operations area represents a prudent response to its requirements to protect its workforce and property, better ensuring that personnel are properly fed and lodged, and have the logistical resources to patrol PT-FI's roads and secure its operating area. In addition, the provision of such support is consistent with PT-FI's obligations under the COW, reflects our philosophy of responsible corporate citizenship, and is in keeping with our commitment to pursue practices that will promote human rights.

PT-FI's share of support costs for the government-provided security was \$23 million in 2017, \$20 million in 2016 and \$21 million in 2015. This supplemental support consists of various infrastructure and other costs, such as food, housing, fuel, travel, vehicle repairs, allowances to cover incidental and administrative costs, and community assistance programs conducted by the military and police.

Refer to Item 1A. "Risk Factors" for further discussion of security risks in Indonesia.

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## Mining Production and Sales Data

	Years Ended December 31,					
	Production			Sales		
	2017	2016	2015	2017	2016	2015
COPPER (millions of recoverable pounds)						
(FCX's net interest in %)						
North America						
Morenci (72%) <sup>a</sup>	737	848	902	713	855	915
Bagdad (100%)	173	177	210	164	180	222
Safford (100%)	150	230	202	154	229	198
Sierrita (100%)	160	162	189	154	162	196
Miami (100%)	19	25	43	18	27	46
Chino (100%)	215	308	314	217	308	319
Tyrone (100%)	61	76	84	61	75	89
Other (100%)	3	5	3	3	5	3
Total North America	1,518	1,831	1,947	1,484	1,841	1,988
South America						
Cerro Verde (53.56%)	1,062	1,108	545	1,062	1,105	544
El Abra (51%)	173	220	324	173	227	327
Total South America	1,235	1,328	869	1,235	1,332	871
Indonesia						
Grasberg (90.64%) <sup>b</sup>	984	1,063	752	981	1,054	744
Consolidated - continuing operations	3,737	4,222	3,568	3,700	4,227	3,603
Discontinued operations <sup>d</sup>	—	425	449	—	424	467
Total	3,737	4,647	4,017	3,700	4,651	4,070
Less noncontrolling interests	670	909	680	670	910	688
Net	3,067	3,738	3,337	3,030	3,741	3,382
Average realized price per pound (continuing operations)				\$2.93	\$2.28	\$2.42
GOLD (thousands of recoverable ounces)						
North America (100%) <sup>a</sup>	23	27	25	22	25	23
Indonesia (90.64%) <sup>b</sup>	1,554	1,061	1,232	1,540	1,054	1,224
Consolidated	1,577	1,088	1,257	1,562	1,079	1,247
Less noncontrolling interests	145	99	115	144	99	115
Net	1,432	989	1,142	1,418	980	1,132
Average realized price per ounce				\$1,268	\$1,238	\$1,129
MOLYBDENUM (millions of recoverable pounds)						
Henderson (100%)	12	10	25	N/A	N/A	N/A
Climax (100%)	20	16	23	N/A	N/A	N/A
North America copper mines (100%) <sup>a</sup>	33	33	37	N/A	N/A	N/A
Cerro Verde (53.56%)	27	21	7	N/A	N/A	N/A
Consolidated	92	80	92	95	74	89
Less noncontrolling interest	13	9	3	12	6	4
Net	79	71	89	83	68	85
Average realized price per pound				\$9.33	\$8.33	\$8.70

<sup>a</sup> Amounts are net of Morenci's undivided joint venture partners' interest; effective May 31, 2016, FCX's undivided interest in Morenci was prospectively reduced from 85 percent to 72 percent (refer to Note 2 for further discussion).

<sup>b</sup> Amounts are net of Grasberg's joint venture partner interest, which varies in accordance with terms of the joint venture agreement (refer to Note 3). Under the joint venture agreement, PT-FI's share of copper production and sales was 99 percent in 2017 and 100 percent in both 2016 and 2015. PT-FI's share of gold production and sales was 100 percent in 2017, 2016, and 2015.



c. Consolidated sales volumes exclude purchased copper of 273 million pounds in 2017, 188 million pounds in 2016 and 121 million pounds in 2015.

d. In November 2016, we completed the sale of our interest in TFHL, through which we held an interest in the Tenke mine, which is reported as a discontinued operation for all periods presented (refer to Note 2 for further discussion).

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## Mineral Reserves

Recoverable proven and probable reserves have been calculated in accordance with Industry Guide 7 as required by the Securities Exchange Act of 1934. Proven and probable reserves may not be comparable to similar information regarding mineral reserves disclosed in accordance with the guidance in other countries. Proven and probable reserves were determined by the use of mapping, drilling, sampling, assaying and evaluation methods generally applied in the mining industry, as more fully discussed below. The term “reserve,” as used in the reserve data presented here, means that part of a mineral deposit that can be economically and legally extracted or produced at the time of the reserve determination. The term “proven reserves” means reserves for which (i) quantity is computed from dimensions revealed in outcrops, trenches, workings or drill holes; (ii) grade and/or quality are computed from the results of detailed sampling; and (iii) the sites for inspection, sampling and measurements are spaced so closely and the geologic character is sufficiently defined that size, shape, depth and mineral content of reserves are well established. The term “probable reserves” means reserves for which quantity and grade are computed from information similar to that used for proven reserves but the sites for sampling are farther apart or are otherwise less adequately spaced. The degree of assurance, although lower than that for proven reserves, is high enough to assume continuity between points of observation.

Our mineral reserve estimates are based on the latest available geological and geotechnical studies. We conduct ongoing studies of our ore bodies to optimize economic values and to manage risk. We revise our mine plans and estimates of recoverable proven and probable mineral reserves as required in accordance with the latest available studies.

Estimated recoverable proven and probable reserves at December 31, 2017, were determined using \$2.00 per pound for copper, \$1,000 per ounce for gold and \$10 per pound for molybdenum. For the three-year period ended December 31, 2017, LME spot copper prices averaged \$2.50 per pound, London PM gold prices averaged \$1,223 per ounce and the weekly average price for molybdenum quoted by Metals Week averaged \$7.12 per pound. In late 2015, we incorporated changes in the commercial pricing structure for our molybdenum-based chemical products to enable continuation of chemical-grade production.

The recoverable proven and probable reserves presented in the table below represent the estimated metal quantities from which we expect to be paid after application of estimated metallurgical recovery rates and smelter recovery rates, where applicable. Recoverable reserves are that part of a mineral deposit that we estimate can be economically and legally extracted or produced at the time of the reserve determination.

	Recoverable Proven and Probable Mineral Reserves Estimated at December 31, 2017		
	Copper (billion pounds)	Gold (million ounces)	Molybdenum (billion pounds)
North America	33.5	0.3	2.22
South America	28.1	—	0.62
Indonesia <sup>b</sup>	25.1	23.2	—
Consolidated basis <sup>c</sup>	86.7	23.5	2.84
Net equity interest <sup>d</sup>	71.3	21.3	2.56

Consolidated recoverable copper reserves include 2.1 billion pounds in leach stockpiles and 0.7 billion pounds in mill stockpiles (refer to “Mill and Leach Stockpiles” for further discussion).

Recoverable proven and probable reserves from Indonesia reflect estimates of minerals that can be recovered through the end of 2041. Refer to Note 13 and to Item 1A. “Risk Factors” for discussion of PT-FI’s COW and Indonesian regulatory matters.

Consolidated reserves represent estimated metal quantities after reduction for joint venture partner interests at the Morenci mine in North America and the Grasberg minerals district in Indonesia (refer to Note 3 for further discussion of our joint ventures). Excluded from the table above were our estimated recoverable proven and probable reserves of 273.4 million ounces of silver in North America, South America and Indonesia, which were determined using \$15 per ounce.

Net equity interest reserves represent estimated consolidated metal quantities further reduced for noncontrolling interest ownership (refer to Note 3 for further discussion of our ownership in subsidiaries). Excluded from the table above were our estimated recoverable proven and probable reserves of 218.2 million ounces of silver in North America, South America and Indonesia.

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		Recoverable Proven and Probable Mineral Reserves Estimated at December 31, 2017									
		Proven Reserves					Probable Reserves				
	Processing	Million	Copper	Gold	Moly	Silver	Million	Copper	Gold	Moly	Silver
	Method	metric tons	%	g/t	%	g/t	metric tons	%	g/t	%	g/t
North America											
Morenci	Mill	572	0.40	—	0.02	—	115	0.37	—	0.02	—
	Crushed leach	290	0.46	—	—	—	80	0.36	—	—	—
	ROM leach	1,603	0.19	—	—	—	474	0.17	—	—	—
Bagdad	Mill	1,001	0.34	— <sup>a</sup>	0.02	1.42	132	0.31	— <sup>a</sup>	0.02	1.31
	ROM leach	190	0.19	—	—	—	82	0.18	—	—	—
Safford, including Lone Star	Crushed leach	555	0.46	—	—	—	107	0.42	—	—	—
Sierrita	Mill	2,064	0.24	— <sup>a</sup>	0.03	1.42	181	0.19	— <sup>a</sup>	0.02	1.13
Chino, including Cobre	Mill	107	0.55	0.04	0.01	0.47	62	0.55	0.03	— <sup>a</sup>	0.46
	ROM leach	99	0.33	—	—	—	8	0.31	—	—	—
Tyrone	ROM leach	6	0.44	—	—	—	3	0.37	—	—	—
Henderson	Mill	60	—	—	0.18	—	14	—	—	0.14	—
Climax	Mill	147	—	—	0.16	—	13	—	—	0.09	—
		6,694					1,271				
South America											
Cerro Verde	Mill	885	0.37	—	0.01	1.94	2,586	0.37	—	0.01	1.94
	Crushed leach	31	0.41	—	—	—	44	0.28	—	—	—
	ROM leach	14	0.22	—	—	—	17	0.20	—	—	—
El Abra	Crushed leach	270	0.48	—	—	—	74	0.47	—	—	—
	ROM leach	37	0.19	—	—	—	13	0.20	—	—	—
		1,237					2,734				
Indonesia											
DMLZ	Mill	76	1.00	0.83	—	4.70	361	0.90	0.74	—	4.33
Grasberg open pit	Mill	12	1.93	4.69	—	5.58	22	0.95	1.53	—	2.58
DOZ	Mill	25	0.56	0.75	—	2.15	54	0.54	0.76	—	2.01
Big Gossan	Mill	18	2.32	0.98	—	14.40	40	2.18	0.91	—	12.64
Grasberg Block Cave <sup>b</sup>	Mill	335	1.17	0.90	—	3.83	628	0.93	0.63	—	3.36
Kucing Liar <sup>b</sup>	Mill	136	1.33	1.13	—	7.14	224	1.20	1.03	—	6.08
		602					1,329				
Total FCX - 100% Basis		8,533					5,334				

a. Grade not shown because of rounding.

b. Would require additional capital investment, which could be significant, to bring into production.

The reserve table above and the tables on the following pages utilize the abbreviations described below:

g/t – grams per metric ton

Moly – Molybdenum

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		Recoverable Proven and Probable Mineral Reserves Estimated at December 31, 2017 (continued)								
		Proven and Probable	Average Ore Grade				Recoveries <sup>a</sup>			
	Processing Method	Million metric tons	Copper %	Gold g/t	Moly %	Silver g/t	Copper %	Gold %	Moly %	Silver %
North America										
Morenci	Mill	687	0.39	—	0.02	—	80.6	—	49.2	—
	Crushed leach	370	0.44	—	—	—	79.4	—	—	—
	ROM leach	2,077	0.18	—	—	—	41.1	—	—	—
Bagdad	Mill	1,133	0.34	— <sup>b</sup>	0.02	1.41	85.8	59.1	68.5	49.3
	ROM leach	272	0.19	—	—	—	22.1	—	—	—
Safford, including Lone Star	Crushed leach	662	0.45	—	—	—	72.7	—	—	—
Sierrita	Mill	2,245	0.23	— <sup>b</sup>	0.03	1.40	83.2	59.2	80.0	49.3
Chino, including Cobre	Mill	169	0.55	0.04	0.01	0.47	78.9	77.9	40.0	78.5
	ROM leach	107	0.33	—	—	—	47.4	—	—	—
Tyrone	ROM leach	9	0.42	—	—	—	58.9	—	—	—
Henderson	Mill	74	—	—	0.17	—	—	—	88.4	—
Climax	Mill	160	—	—	0.15	—	—	—	89.6	—
		7,965								
South America										
Cerro Verde	Mill	3,471	0.37	—	0.01	1.94	86.4	—	54.4	44.8
	Crushed leach	75	0.33	—	—	—	81.1	—	—	—
	ROM leach	31	0.21	—	—	—	53.3	—	—	—
El Abra	Crushed leach	344	0.48	—	—	—	58.2	—	—	—
	ROM leach	50	0.19	—	—	—	47.3	—	—	—
		3,971								
Indonesia										
DMLZ	Mill	437	0.91	0.76	—	4.39	86.9	79.5	—	64.4
Grasberg open pit	Mill	34	1.29	2.64	—	3.63	94.0	90.8	—	47.6
DOZ	Mill	79	0.54	0.76	—	2.05	90.1	81.9	—	68.7
Big Gossan	Mill	58	2.22	0.93	—	13.18	91.4	66.4	—	63.7
Grasberg Block Cave <sup>c</sup>	Mill	963	1.01	0.72	—	3.52	84.4	64.6	—	57.3
Kucing Liar <sup>c</sup>	Mill	360	1.25	1.07	—	6.48	84.5	44.3	—	39.1
		1,931								
Total FCX - 100% Basis		13,867								

a. Recoveries are net of estimated mill and smelter losses.

b. Grade not shown because of rounding.

c. Would require additional capital investment, which could be significant, to bring into production.

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## Recoverable Proven and Probable Mineral Reserves

Estimated at December 31, 2017

(continued)

			Recoverable Reserves			
	FCX's	Processing	Copper	Gold	Moly	Silver
	Interest	Method	billion	million	billion	million
			lbs.	ozs.	lbs.	ozs.
North America						
Morenci	72%	Mill	4.8	—	0.14	—
		Crushed leach	2.8	—	—	—
		ROM leach	3.5	—	—	—
Bagdad	100%	Mill	7.2	0.1	0.36	25.3
		ROM leach	0.3	—	—	—
Safford, including Lone Star	100%	Crushed leach	4.8	—	—	—
Sierrita	100%	Mill	9.7	0.1	1.01	49.8
Chino, including Cobre	100%	Mill	1.6	0.1	0.01	2.0
		ROM leach	0.4	—	—	—
Tyrone	100%	ROM leach	—	<sup>a</sup> —	—	—
Henderson	100%	Mill	—	—	0.24	—
Climax	100%	Mill	—	—	0.48	—
			35.1	0.3	2.24	77.1
Recoverable metal in stockpiles <sup>b</sup>			1.7	—	0.02	—
100% operations			36.8	0.3	2.26	77.1
Consolidated <sup>c</sup>			33.5	0.3	2.22	77.1
Net equity interest <sup>d</sup>			33.5	0.3	2.22	77.1
South America						
Cerro Verde	53.56%	Mill	24.3	—	0.61	97.2
		Crushed leach	0.4	—	—	—
		ROM leach	0.1	—	—	—
El Abra	51%	Crushed leach	2.1	—	—	—
		ROM leach	0.1	—	—	—
			27.0	—	0.61	97.2
Recoverable metal in stockpiles <sup>b</sup>			1.1	—	0.01	2.1
100% operations			28.1	—	0.62	99.3
Consolidated <sup>c</sup>			28.1	—	0.62	99.3
Net equity interest <sup>d</sup>			15.0	—	0.34	53.2
Indonesia						
DMLZ	e	Mill	7.7	8.5	—	39.8
Grasberg open pit	e	Mill	0.9	2.6	—	1.8
DOZ	e	Mill	0.9	1.6	—	3.6
Big Gossan	e	Mill	2.6	1.2	—	15.6
Grasberg Block Cave	e	Mill	18.1	14.5	—	62.5
Kucing Liar	e	Mill	8.4	5.4	—	29.3
			38.6	33.8	—	152.6
Recoverable metal in stockpiles <sup>b</sup>			0.2	0.1	—	0.5
100% operations			38.8	33.9	—	153.1
Consolidated <sup>c</sup>			25.1	23.2	—	97.0

Net equity interest <sup>d</sup>	22.8	21.0	—	87.9
Total FCX – 100% basis	103.7	34.2	2.88	329.5
Total FCX – Consolidated basis	86.7	23.5	2.84	273.4
Total FCX – Net equity interest	71.3	21.3	2.56	218.2

a. Pounds not shown because of rounding.

b. Refer to “Mill and Leach Stockpiles” for additional information.

Consolidated reserves represent estimated metal quantities after reduction for joint venture partner interests at the c. Morenci mine in North America and the Grasberg minerals district in Indonesia. Refer to Note 3 for further discussion of our joint ventures.

d. Net equity interest represents estimated consolidated metal quantities further reduced for noncontrolling interest ownership. Refer to Note 3 for further discussion of our ownership in subsidiaries.

Our joint venture agreement with Rio Tinto provides that PT-FI will receive cash flow from specified annual e. amounts of copper, gold and silver through 2022, calculated by reference to its proven and probable reserves as of December 31, 1994, and 60 percent of all remaining cash flow.

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In defining our open-pit reserves, we apply a “variable cutoff grade” strategy. The objective of this strategy is to maximize the net present value of our operations. We use a “break-even cutoff grade” to define the in-situ reserves for our underground ore bodies. The break-even cutoff grade is defined for a metric ton of ore as that equivalent copper grade, once produced and sold, that generates sufficient revenue to cover all operating and administrative costs associated with our production.

Our copper mines may contain other commercially recoverable metals, such as gold, molybdenum and silver. We value all commercially recoverable metals in terms of a copper equivalent percentage to determine a single cutoff grade. Copper equivalent percentage is used to express the relative value of multi-metal ores in terms of one metal. The calculation expresses the relative value of the ore using estimates of contained metal quantities, metals prices as used for reserve determination, recovery rates, treatment charges and royalties. Our molybdenum properties use a molybdenum cutoff grade.

The table below shows the minimum cutoff grade by process for each of our existing ore bodies as of December 31, 2017:

	Copper Equivalent Cutoff Grade (Percent)			Molybdenum Cutoff Grade (Percent)
	Mill	Crushed Leach	ROM Leach	Mill
North America				
Morenci	0.22	0.12	0.03	—
Bagdad	0.12	—	0.06	—
Safford, including Lone Star	—	0.12	—	—
Sierrita	0.17	—	—	—
Chino, including Cobre	0.23	—	0.06	—
Tyrone	—	—	0.06	—
Henderson	—	—	—	0.12
Climax	—	—	—	0.05
South America				
Cerro Verde	0.17	0.14	0.11	—
El Abra	—	0.10	0.06	—
Indonesia				
DMLZ	0.90	—	—	—
Grasberg open pit	0.25	—	—	—
DOZ	1.02	—	—	—
Big Gossan	1.69	—	—	—
Grasberg Block Cave	0.77	—	—	—
Kucing Liar	0.97	—	—	—



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Drill hole spacing data is used by mining professionals, such as geologists and geological engineers, in determining the suitability of data coverage (on a relative basis) in a given deposit type and mining method scenario so as to achieve a given level of confidence in the resource estimate. Drill hole spacing is only one of several criteria necessary to establish resource classification. Drilling programs are typically designed to achieve an optimum sample spacing to support the level of confidence in results that apply to a particular stage of development of a mineral deposit.

The following table sets forth the average drill hole spacing based on average sample distance or drill pattern spacing for proven and probable ore reserves by process type:

		Average Drill Hole Spacing (in Meters)			
		Proven		Probable	
	Mining Unit	Mill	Leach	Mill	Leach
North America					
Morenci	Open Pit	86	86	122	122
Bagdad	Open Pit	86	86	122	122
Safford, including Lone Star	Open Pit	—	86	—	122
Sierrita	Open Pit	73	—	104	—
Chino	Open Pit	43	86	86	122
Cobre	Open Pit	61	61	91	91
Tyrone	Open Pit	—	86	—	86
Henderson	Block Cave	47	—	96	—
Climax	Open Pit	61	—	91	—
South America					
Cerro Verde	Open Pit	55	55	110	110
El Abra	Open Pit	—	75	—	120
Indonesia					
DMLZ	Block Cave	22	—	64	—
Grasberg open pit	Open Pit	26	—	55	—
DOZ	Block Cave	23	—	57	—
Big Gossan	Open Stope	12	—	36	—
Grasberg Block Cave	Block Cave	28	—	68	—
Kucing Liar		39	—	96	—

Block  
Cave

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Production Sequencing

The following chart illustrates our current plans for sequencing and producing our proven and probable reserves at each of our ore bodies and the years in which we currently expect production from each ore body and from related stockpiles. The chart also shows the term of PT-FI's COW. Production volumes are typically lower in the first few years for each ore body as development activities are ongoing and as the mine ramps up to full production and production volumes may also be lower as the mine reaches the end of its life. The sequencing dates shown in the chart below include development activity that results in metal production. The ultimate timing of the start of production from our undeveloped mines is dependent upon a number of factors, including the results of our exploration and development efforts, and may vary from the dates shown below. In addition, we develop our mine plans based on maximizing the net present value from the ore bodies. Significant additional capital expenditures will be required at many of these mines in order to achieve the life-of-mine plans reflected below.

Mill and Leach Stockpiles

Mill and leach stockpiles generally contain lower grade ores that have been extracted from an ore body and are available for copper recovery. Mill stockpiles contain sulfide ores and recovery of metal is through milling, concentrating, smelting and refining or, alternatively, by concentrate leaching. Leach stockpiles contain oxide ores and certain secondary sulfide ores and recovery of metal is through exposure to acidic solutions that dissolve contained copper and deliver it in solution to extraction processing facilities.

Because it is impracticable to determine copper contained in mill and leach stockpiles by physical count, reasonable estimation methods are employed. The quantity of material delivered to mill and leach stockpiles is based on surveyed volumes of mined material and daily production records. Sampling and assaying of blasthole cuttings determine the estimated copper grades of material delivered to mill and leach stockpiles.

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Expected copper recovery rates for mill stockpiles are determined by metallurgical testing. The recoverable copper in mill stockpiles, once entered into the production process, can be produced into copper concentrate almost immediately.

Expected copper recovery rates for leach stockpiles are determined using small-scale laboratory tests, small- to large-scale column testing (which simulates the production process), historical trends and other factors, including mineralogy of the ore and rock type. Total copper recovery in leach stockpiles can vary significantly from a low percentage to more than 90 percent depending on several variables, including processing methodology, processing variables, mineralogy and particle size of the rock. For newly placed material on active stockpiles, as much as 80 percent of total copper recovery may be extracted during the first year, and the remaining copper may be recovered over many years. Processes and recovery rates are monitored regularly, and recovery rate estimates are adjusted periodically as additional information becomes available and as related technology changes.

Following are our stockpiles and the estimated recoverable copper contained within those stockpiles as of December 31, 2017:

	Million Metric Tons	Average Ore Grade (%)	Recovery Rate (%)	Recoverable Copper (billion pounds)	
Mill stockpiles					
Cerro Verde	112	0.29	73.7	0.6	
Grasberg minerals district	26	0.58	62.7	0.2	
	138			0.8	
Leach stockpiles					
Morenci	6,398	0.24	2.0	0.7	
Bagdad	499	0.25	0.4	—	a
Safford, including Lone Star	262	0.45	9.1	0.2	
Sierrita	650	0.15	10.3	0.2	
Miami	498	0.39	1.9	0.1	
Chino, including Cobre	1,728	0.25	4.1	0.4	
Tyrone	1,138	0.28	1.6	0.1	
Cerro Verde	560	0.49	4.1	0.2	
El Abra	698	0.44	4.6	0.3	
	12,431			2.2	
Total FCX - 100% basis				3.0	
Total FCX - Consolidated basis <sup>b</sup>				2.8	
Total FCX - Net equity interest <sup>c</sup>				2.3	

a. Amounts not shown because of rounding.

Consolidated stockpiles represent estimated metal quantities after reduction for joint venture partner interests at the b. Morenci mine in North America and the Grasberg minerals district in Indonesia. Refer to Note 3 for further discussion of our joint ventures.

Net equity interest represents estimated consolidated metal quantities further reduced for noncontrolling interest

c. ownership. Refer to Note 3 for further discussion of our ownership in subsidiaries.

## Mineralized Material

We hold various properties containing mineralized material that we believe could be brought into production should market conditions warrant. However, permitting and significant capital expenditures would be required before operations could commence at these properties. Mineralized material is a mineralized body that has been delineated by appropriately spaced drilling and/or underground sampling to support the reported tonnage and average metal grades. Such a deposit cannot qualify as recoverable proven and probable reserves until legal and economic feasibility are confirmed based upon a comprehensive evaluation of development costs, unit costs, grades, recoveries and other material factors. Estimated mineralized materials as presented on the following page were assessed using prices of \$2.20 per pound for copper, \$1,000 per ounce for gold, \$12 per pound for molybdenum and \$20 per ounce for silver.

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## Mineralized Material

Estimated at December 31, 2017

		Milling Material					Leaching Material		Total Mineralized Material
	FCX's Interest	Million metric tons	Copper %	Gold g/t	Moly %	Silver g/t	Million metric tons	Copper %	Million metric tons
North America									
Morenci	72%	260	0.31	—	0.02	—	639	0.24	899
Bagdad	100%	986	0.27	— <sup>a</sup>	0.02	1.2	7	0.20	993
Safford, including Lone Star	100%	274	0.61	0.10	—	1.9	195	0.34	469
Sierrita	100%	1,597	0.18	— <sup>a</sup>	0.02	1.1	—	—	1,597
Chino, including Cobre	100%	122	0.52	0.03	0.01	0.5	15	0.30	137
Tyrone	100%	—	—	—	—	—	56	0.32	56
Henderson	100%	104	—	—	0.14	—	—	—	104
Climax	100%	378	—	—	0.16	—	—	—	378
Ajo	100%	438	0.40	0.06	0.01	0.9	—	—	438
Cochise/Bisbee	100%	255	0.46	—	—	—	—	—	255
Sanchez	100%	—	—	—	—	—	144	0.30	144
Tohono	100%	230	0.71	—	—	—	271	0.66	501
Twin Buttes	100%	75	0.61	—	0.04	6.3	46	0.22	121
Christmas	100%	202	0.40	0.05	— <sup>a</sup>	1.0	—	—	202
South America									
Cerro Verde	53.56%	969	0.36	—	0.02	1.9	6	0.24	975
El Abra	51%	1,898	0.44	0.02	0.01	1.4	202	0.28	2,100
Indonesia									
Grasberg minerals district	54.38% <sup>b</sup>	1,887	0.74	0.65	—	3.7	—	—	1,887
Total FCX - 100% basis		9,675					1,581		11,256 <sup>c</sup>
Total FCX - Consolidated basis <sup>d</sup>		8,847					1,402		10,249
Total FCX - Net equity interest <sup>e</sup>		7,361					1,300		8,661

a. Amounts not shown because of rounding.

b. FCX's interest in the Grasberg minerals district reflects our 60 percent joint venture ownership further reduced by noncontrolling interest ownership.

c. Excludes mineralized material of 72 million metric tons associated with Kisanfu, which in accordance with accounting guidelines is included in assets held for sale (refer to Note 2).

d. Consolidated basis represents estimated mineralized materials after reduction for joint venture partner interests in the Morenci mine in North America and the Grasberg minerals district in Indonesia. Refer to Note 3 for further discussion of our joint ventures.

e. Net equity interest represents estimated consolidated mineralized material further reduced for noncontrolling interest ownership. Refer to Note 3 for further discussion of our ownership in subsidiaries.

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## OIL AND GAS OPERATIONS

As further discussed in Note 2, during 2016 and 2017, we completed the sales of substantially all of our oil and gas properties, including our Deepwater Gulf of Mexico (GOM), onshore California and Haynesville oil and gas properties, and property interests in the GOM Shelf and the Madden area in central Wyoming. As a result, our portfolio of oil and gas assets includes oil and natural gas production onshore in South Louisiana and on the GOM Shelf and oil production offshore California, which had estimated proved developed reserves of 10.1 million barrels of oil equivalents (MMBOE) at December 31, 2017.

## Exploration and Development Activities

During 2017, capital expenditures associated with oil and gas properties totaled \$34 million, primarily associated with changes in capital expenditure accruals. We have no plans to incur significant capital expenditures associated with oil and gas properties in future periods. Capital expenditures for our oil and gas operations totaled \$1.2 billion in 2016 (including \$0.6 billion incurred for GOM and \$0.5 billion for changes in capital expenditure accruals) and \$3.0 billion in 2015 (including \$2.6 billion incurred for GOM).

## Production and Sales Data

For the year 2017, oil and gas sales were not material and totaled 4.6 MMBOE. The following table presents oil and gas production and sales data for the years ended December 31, 2016 and 2015:

	2016	2015
<b>GOM</b>		
Oil (million barrels, or MMBbls)	22.9	22.2
Natural gas (billion cubic feet, or Bcf)	39.0 <sup>a</sup>	35.9 <sup>a</sup>
NGLs (MMBbls)	1.7	2.2
MMBOE	31.1	30.3
<b>California</b>		
Oil (MMBbls)	11.4	12.9
Natural gas (Bcf)	1.8 <sup>b</sup>	2.2 <sup>b</sup>
NGLs (MMBbls)	0.1	0.2
MMBOE	11.8	13.5
<b>Haynesville/Madden/Other</b>		
Oil (MMBbls)	0.1	0.2
Natural gas (Bcf)	24.3	51.6
MMBOE	4.2	8.8
<b>Total U.S. oil and gas operations</b>		
Oil (MMBbls)	34.4	35.3
Natural gas (Bcf)	65.1	89.7
NGLs (MMBbls)	1.8	2.4
MMBOE	47.1	52.6

a. Net of fuel used in operations totaling 3.8 Bcf in 2016 and 1.1 Bcf in 2015.

b. Net of fuel used in operations totaling 0.1 Bcf in 2016 and 0.6 Bcf in 2015.

## Productive Wells

At December 31, 2017, the total number of active producing oil and gas wells was not significant. At December 31, 2016, we had working interests in 120 gross (94 net) active producing oil wells and 640 gross (100 net) active producing natural gas wells. At December 31, 2015, we had working interests in 3,060 gross (2,976 net) active

producing oil wells and 1,759 gross (213 net) active producing natural gas wells.



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## Drilling Activities

There were no exploratory or development wells drilled during 2017 or in progress at December 31, 2017. The following table provides the total number of wells that we drilled during the years ended December 31, 2016 and 2015:

	2016		2015	
	Gross	Net	Gross	Net
Exploratory				
Productive:				
Oil	2	2	2	1
Gas	1	—	31	5
Dry	—	—	4	3
	3	2	37	9
Development				
Productive:				
Oil	8	5	7	3
Gas	1	—	17	2
Dry	—	—	2	2
	9	5	26	7
	12	7	63	16

## Item 1A. Risk Factors.

This report contains “forward-looking statements” within the meaning of United States (U.S.) federal securities laws. Forward-looking statements are all statements other than statements of historical facts, such as projections or expectations relating to ore grades and milling rates; production and sales volumes; unit net cash costs; operating cash flows; anticipated tax refunds resulting from U.S. tax reform; capital expenditures; exploration efforts and results; development and production activities and costs; liquidity; tax rates; the impact of copper, gold and molybdenum price changes; the impact of deferred intercompany profits on earnings; reserve estimates; future dividend payments; and share purchases and sales.

We undertake no obligation to update any forward-looking statements. We caution readers that forward-looking statements are not guarantees of future performance and our actual results may differ materially from those anticipated, projected or assumed in the forward-looking statements. Important factors that can cause our actual results to differ materially from those anticipated in the forward-looking statements include the following:

## Financial risks

Fluctuations in the market prices of copper, gold and molybdenum have caused and may continue to cause significant volatility in our financial performance and in the trading prices of our debt and common stock. Extended declines in the market prices of copper, gold and, to a lesser extent, molybdenum could adversely affect our earnings, cash flows and asset values and, if sustained, may adversely affect our ability to repay debt.

Our financial results will vary with fluctuations in the market prices of the commodities we produce, primarily copper and gold, and to a lesser extent molybdenum. An extended decline in market prices of these commodities could have a material adverse effect on our financial results, the value of our assets and/or our ability to repay our debt and meet our other fixed obligations; and may depress the trading prices of our common stock and of our publicly traded debt securities.

Additionally, if market prices for our primary commodities decline for a sustained period of time, we may have to revise our operating plans, including curtailing production, reducing operating costs and capital expenditures and discontinuing certain exploration and development programs. We may be unable to decrease our costs in an amount sufficient to offset reductions in revenues, in which case we may incur losses, and those losses may be material.

Fluctuations in commodities prices are caused by varied and complex factors beyond our control, including global supply and demand balances and inventory levels; global economic and political conditions; international regulatory,

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trade and tax policies; commodities investment activity and speculation; the price and availability of substitute products; and changes in technology.

Copper prices may be affected by demand from China, which has become the largest consumer of refined copper in the world, and by changes in demand for industrial, commercial and residential products containing copper. Copper prices have fluctuated historically, with London Metal Exchange (LME) spot copper prices ranging from \$1.96 per pound to \$3.27 per pound during the three years ended December 31, 2017. LME spot copper prices averaged \$2.80 per pound in 2017, \$2.21 per pound in 2016 and \$2.49 per pound in 2015. The LME spot copper price was \$3.25 per pound on December 31, 2017, and \$3.22 per pound on January 31, 2018.

Factors affecting gold prices may include the relative strength of the U.S. dollar to other currencies, inflation and interest rate expectations, purchases and sales of gold by governments and central banks, demand from China and India, two of the world's largest consumers of gold, and global demand for jewelry containing gold. The London PM gold price averaged \$1,257 per ounce in 2017, \$1,250 per ounce in 2016 and \$1,160 per ounce in 2015. The London PM gold price was \$1,297 per ounce on December 31, 2017, and \$1,345 per ounce on January 31, 2018.

The Metals Week Molybdenum Dealer Oxide weekly average price averaged \$8.21 per pound in 2017, \$6.47 per pound in 2016 and \$6.66 per pound in 2015. The Metals Week Molybdenum Dealer Oxide weekly average price was \$10.15 per pound on December 31, 2017, and \$11.87 per pound on January 31, 2018.

As further discussed in Notes 4 and 5, non-cash charges for inventory adjustments totaled \$8 million in 2017 and \$36 million in 2016 primarily for molybdenum, and \$338 million in 2015 for copper and molybdenum, and long-lived mining asset impairments totaled \$37 million in 2015. Declines in copper, gold and/or molybdenum prices could result in additional metals inventory adjustments and impairment charges for our long-lived assets. Other events that could result in impairment of our long-lived assets include, but are not limited to, decreases in estimated proven and probable mineral reserves and any event that might have a material adverse effect on mine production costs.

Our debt and other financial commitments may limit our financial and operating flexibility.

At December 31, 2017, our total consolidated debt was \$13.1 billion (see Note 8) and our total consolidated cash was \$4.4 billion. We also have various other financial commitments, including reclamation and environmental obligations, take-or-pay contracts and leases. For further information, refer to the risk factor below relating to mine closure and reclamation regulations and plugging and abandonment obligations related to our remaining oil and gas properties. Our level of indebtedness and other financial commitments could have important consequences to our business, including the following:

- Limiting our flexibility in planning for, or reacting to, changes in the industry in which we operate;

- Increasing our vulnerability to general adverse economic and industry conditions;

- Limiting our ability to fund future working capital, capital expenditures and/or material contingencies, to engage in future development activities, or to otherwise realize the value of our assets and opportunities fully because of the need to dedicate a substantial portion of our cash flows from operations to payments on our debt;

- Requiring us to sell assets to reduce debt; or

- Placing us at a competitive disadvantage compared to our competitors that have less debt and/or fewer financial commitments.

Any failure to comply with the financial and other covenants in our debt agreements may result in an event of default that would allow the creditors to accelerate maturities of the related debt, which in turn may trigger cross-acceleration or cross-default provisions in other debt agreements. Our available cash and liquidity may not be sufficient to fully repay borrowings under our debt instruments that are accelerated upon an event of default.

From August 2015 through November 2016, we sold 326.5 million shares of our common stock under registered at-the-market equity programs, which generated \$3.5 billion in gross proceeds (refer to Note 10). In addition, during 2016, we issued 48.1 million shares of our common stock in connection with the settlement of two drilling rig

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contracts (refer to Note 13) and 27.7 million shares of our common stock in exchange for \$369 million of FCX senior notes (refer to Note 10). Any additional issuance of equity capital to fund operations, reduce debt, improve our financial position or for other purposes, may have a negative impact on our stock price.

As of January 31, 2018, our senior unsecured debt was rated “BB-“ with a stable outlook by Standard & Poor’s (S&P), “BB+” with a negative outlook by Fitch Ratings (Fitch), and “Ba2” with a stable outlook by Moody’s Investors Service (Moody’s). There is no assurance that our credit ratings will not be downgraded in the future.

Mine closure and reclamation regulations impose substantial costs on our operations and include requirements that we provide financial assurance supporting those obligations. We also have plugging and abandonment obligations related to our remaining oil and gas properties, and are required to provide bonds or other forms of financial assurance in connection with those properties. Changes in or the failure to comply with these requirements could have a material adverse effect on us.

We are required by U.S. federal and state laws and regulations to provide financial assurance sufficient to allow a third party to implement approved closure and reclamation plans for our mining properties if we are unable to do so. The U.S. Environmental Protection Agency (EPA) and state agencies may also require financial assurance for investigation and remediation actions that are required under settlements of enforcement actions under the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA) or similar state laws. Refer to Note 12 for additional information regarding our financial assurance obligations.

With respect to our mining operations, most of our financial assurance obligations are imposed by state laws that vary significantly by jurisdiction, depending on how each state regulates land use and groundwater quality. Although Section 108(b) of CERCLA has required EPA to identify classes of facilities that must establish evidence of financial responsibility since it was adopted in 1980, currently there are no financial assurance requirements for active mining operations under CERCLA. In August 2014, several environmental organizations initiated litigation against EPA to require it to set a schedule for adopting financial assurance regulations under CERCLA governing the hard rock mining industry. EPA and the environmental organizations reached a joint agreement and submitted it to the U.S. Court of Appeals for the District of Columbia Circuit for approval. Notwithstanding industry objections, the court approved the agreement on January 29, 2016, thereby requiring EPA to propose financial assurance regulations for the hard rock mining industry by December 1, 2016, and to provide notice of its final action by December 1, 2017. The proposed regulations were published on January 11, 2017, and the public comment period closed on July 11, 2017. The proposed rules were vigorously opposed by the mining industry, other industry commenters, and states and other federal agencies that have mine closure and reclamation programs. We and others in the industry submitted comments to inform EPA that, if adopted without material modification, the rules would impose financial responsibility obligations on U.S. hard rock mining operations that are unnecessary, duplicative of existing state and other federal requirements, and unreasonable. Our initial calculations also suggested that the financial responsibility amounts would be difficult, if not impossible, for us and others to meet with corporate resources, and would be extremely expensive, if not impossible, to finance with third-party financial instruments such as letters of credit, bonds or insurance. On December 1, 2017, EPA announced that it was withdrawing its proposed rules and would not issue any final financial assurance regulations for the hard rock mining industry. EPA indicated that its decision was based on its interpretation of the statute and analysis of its record developed for this rule making, including comments on federal and state regulatory controls governing the hard rock mining sector, and federal and state financial responsibility requirements. Environmental organizations have announced that they will file suit challenging EPA’s decision after the final decision has been published in the Federal Register. We and others in the industry will continue to participate in the legal process and oppose any re-proposal of rules similar to what EPA proposed on December 1, 2016, as a re-proposal of similar rules would severely harm the international competitiveness of the U.S. hard rock mining industry and would materially and adversely affect our cash flows, results of operations and financial condition.

We are also subject to financial assurance requirements in connection with our remaining oil and gas properties under both state and federal laws, including financial responsibility required under the Oil Pollution Act of 1990 to cover containment and cleanup costs resulting from an oil spill. In 2016, the U.S. Bureau of Ocean Energy Management (BOEM) issued revised requirements for lessees operating in federal waters to secure the cost of plugging, abandoning, decommissioning and/or removing wells, platforms and pipelines at the end of production. The revised requirements eliminate previously provided waivers from requirements to post security. In early 2017, the BOEM announced a delay in the implementation of certain aspects of the rules pending further review. The BOEM has been discussing the rules with industry representatives, and implementation remains on hold at this time. If implemented, the new requirements could require us to post security in the form of bonds or similar

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assurances. The cost for bonds or other forms of assurances can be substantial, and there is no assurance that they can be obtained in all cases.

As of December 31, 2017, our financial assurance obligations totaled \$1.2 billion for closure and reclamation/restoration costs of U.S. mining sites, and \$0.6 billion for plugging and abandonment obligations of our remaining oil and gas properties (refer to Note 12). A substantial portion of our financial assurance obligations are satisfied by FCX and subsidiary guarantees and financial capability demonstrations. Our ability to continue to provide guarantees and financial capability demonstrations depends on state and other regulatory requirements, our financial performance and our financial condition. Other forms of assurance, such as letters of credit and surety bonds, are costly to provide and, depending on our financial condition and market conditions, may be difficult or impossible to obtain. Failure to provide the required financial assurance could result in the closure of the affected properties.

Refer to Notes 1 and 12, for further discussion of our environmental and asset retirement obligations.

Unanticipated litigation or negative developments in pending litigation or with respect to other contingencies could have a material adverse effect on our cash flows, results of operations and financial condition.

We are involved in numerous legal proceedings and subject to other contingencies that have arisen or may arise in the ordinary course of our business or are associated with environmental issues arising from legacy operations conducted over the years by Freeport Minerals Corporation (FMC) and its affiliates, including those described in Note 12 and in Item 3. "Legal Proceedings" involving matters such as remediation, restoration and reclamation of environmental contamination, claims of personal injury or property damage arising from such contamination or from exposure to substances such as lead, arsenic, asbestos, talc and other allegedly toxic substances, disputes over water rights, and disputes with foreign governments or regulatory authorities over royalties, taxes, rights and obligations under concession or other agreements, or other matters. We are also involved periodically in other reviews, inquiries, investigations and other proceedings initiated by or involving government agencies, some of which may result in adverse judgments, settlements, fines, penalties, injunctions or other relief. In addition, from time to time we are involved in disputes over the allocation of environmental remediation obligations at Superfund and other sites. The outcome of litigation is inherently uncertain and adverse developments or outcomes can result in significant monetary damages, penalties, other sanctions or injunctive relief against us, limitations on our property rights, or regulatory interpretations that increase our operating costs. Management does not believe, based on currently available information, that the outcome of any individual legal proceeding will have a material adverse effect on our financial condition, although individual or cumulative outcomes could be material to our operating results for a particular period, depending on the nature and magnitude of the outcome and the operating results for the period.

With respect to the asbestos exposure cases described in Note 12, there has been an increase in the number of cases against FMC and certain affiliates alleging exposure to talc contaminated with asbestos and to talc that is not alleged to be contaminated with asbestos. There have been a number of large jury awards in single plaintiff cases primarily brought by consumers against makers of common consumer products containing talc and alleging serious health risks, including mesothelioma and ovarian cancer allegedly associated with long-term use of such products. Prior affiliates were involved in talc mining, and some of those affiliates have been named as defendants in some of those cases. We have indemnification rights against a successor to those businesses, and the successor has acknowledged those indemnification obligations, subject to certain reservations, and has taken responsibility for all cases we have tendered to it. However, the indemnitor may have limited financial resources and limited amounts of insurance available to meet those obligations.

International risks

Our international operations are subject to political, social and geographic risks of doing business in countries outside the U.S.

We are a U.S.-based mining company with substantial assets located outside of the U.S. We conduct international mining operations in Indonesia, Peru and Chile. Accordingly, in addition to the usual risks associated with conducting business in countries outside the U.S., our business may be adversely affected by political, economic and social uncertainties in each of these countries.



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Risks of conducting business in countries outside of the U.S. include:

Renegotiation, cancellation or forced modification of existing contracts;

Expropriation or nationalization of property;

Changes in the host country's laws, regulations and policies, including those relating to labor, taxation, royalties, divestment, imports, exports, trade regulations, currency and environmental matters, which because of rising "resource nationalism" in countries around the world, may impose increasingly onerous requirements on foreign operations and investment;

Political instability, bribery, extortion, corruption, civil strife, acts of war, guerrilla activities, insurrection and terrorism;

Changes in the aspirations and expectations of local communities in which we operate with respect to our contributions to employee health and safety, infrastructure and community development and other factors that may affect our social license to operate, all of which lead to increased costs;

Changes in U.S. trade, tax, immigration or other policies that may harm relations with foreign countries or result in retaliatory policies;

Foreign exchange controls and movements in foreign currency exchange rates; and

The risk of having to submit to the jurisdiction of an international court or arbitration panel or having to enforce the judgment of an international court or arbitration panel against a sovereign nation within its own territory.

Our insurance does not cover most losses caused by the above described risks. Accordingly, our exploration, development and production activities outside of the U.S. may be substantially affected by many unpredictable factors beyond our control, some of which could have a material adverse effect on our cash flows, results of operations and financial condition.

Our international operations must comply with the U.S. Foreign Corrupt Practices Act and similar anti-corruption and anti-bribery laws of the other jurisdictions in which we operate. There has been a substantial increase in the global enforcement of these laws in recent years. Any violation of those laws could result in significant criminal or civil fines and penalties, litigation, and loss of operating licenses or permits, and may damage our reputation, which could have a material adverse effect on our cash flows, results of operations and financial condition.

We are involved in several significant tax proceedings and other tax disputes with the Indonesian and Peruvian tax authorities (refer to Note 12 for further discussion of these matters). Other risks specific to certain countries in which we operate are discussed in more detail below.

Because our Grasberg mining operation in Indonesia is a significant operating asset, our business may continue to be adversely affected by political, economic and social uncertainties in Indonesia.

Our mining operations in Indonesia are conducted by our subsidiary PT Freeport Indonesia (PT-FI) pursuant to a Contract of Work (COW) with the Indonesian government. Maintaining a good working relationship with the Indonesian government is important to us because of the significance of our Indonesia operations to our business, and because our mining operations there are among Indonesia's most significant business enterprises. Partially because of their significance to Indonesia's economy, the environmentally sensitive area in which they are located, and the

number of people employed, our Indonesia operations have been the subject of political debates and of criticism in the Indonesian press, and have been the target of protests and occasional violence. For further discussion of the history of PT-FI's COW, refer to Note 13.

The initial term of PT-FI's COW expires in 2021, but the COW explicitly provides that it can be extended for two 10-year periods subject to Indonesian government approval, which cannot be withheld or delayed unreasonably. PT-FI has been engaged in discussions with officials of the Indonesian government since 2012 regarding various provisions of its COW, including extending its term. Notwithstanding provisions in the COW prohibiting it from doing so, the Indonesian government has sought to modify existing mining contracts, including PT-FI's COW, to address

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provisions contained in the mining law enacted in 2009 and mining regulations adopted thereunder, including provisions that conflict with the COW, such as the size of contract concessions, government revenues, domestic processing of minerals, divestment, provision of local goods and services, conversion from a COW to a licensing framework for extension periods, and a requirement that extensions may be applied for only within two years prior to a COW's expiration.

Regulations published pursuant to the 2009 mining law in January 2014 imposed, among other things, a progressive export duty on copper concentrate and restricted exports of copper concentrate and anode slimes (a by-product of the copper refining process containing metals, including gold) after January 12, 2017. Despite PT-FI's rights under its COW to export concentrate without the payment of duties, PT-FI was unable to obtain administrative approval for exports and operated at approximately half of its capacity from mid-January 2014 through July 2014.

In July 2014, PT-FI entered into a Memorandum of Understanding (MOU) with the Indonesian government, in which, subject to concluding an agreement to extend PT-FI's operations beyond 2021 on acceptable terms, PT-FI agreed to construct new smelter capacity in Indonesia and to divest an additional 20.64 percent interest at fair value. Under the MOU, PT-FI provided a \$115 million assurance bond to support its commitment for smelter development, agreed to pay higher royalty rates and agreed to pay export duties until certain smelter development milestones were met. The MOU also anticipated an amendment of the COW within six months to address other matters. In January 2015, the MOU was extended to July 25, 2015, and it expired on that date. The Indonesian government has continued to impose the increased royalty rates, export duties and smelter assurance bond.

In October 2015, the Indonesian government provided a letter of assurance to PT-FI indicating that it would revise regulations allowing it to approve the extension of PT-FI's operations beyond 2021, and provide the same rights and the same level of legal and fiscal certainty provided under the current COW.

In January and February 2017, the Indonesian government issued new regulations pursuant to the 2009 mining law to address exports of unrefined metals, including copper concentrate and anode slimes, and other matters related to the mining sector. The new regulations permit the continuation of copper concentrate exports for a five-year period through January 2022, subject to various conditions, including conversion from a contract of work to a special mining license (known as an IUPK, which does not provide the same level of fiscal and legal protections as PT-FI's COW, which remains in effect), a commitment to the completion of smelter construction in five years and payment of export duties to be determined by the Ministry of Finance. In addition, the new regulations enable application for extension of mining rights five years before expiration of the IUPK and require foreign IUPK holders to divest 51 percent to Indonesian interests no later than the tenth year of production. Export licenses would be valid for one-year periods, subject to review every six months, depending on smelter construction progress.

Following the issuance of the January and February 2017 regulations and discussions with the Indonesian government, PT-FI advised the government that it was prepared to convert its COW to an IUPK, subject to extension of its long-term mining rights to 2041 and obtaining an investment stability agreement providing contractual rights with the same level of legal and fiscal certainty provided under its COW, and provided that the COW would remain in effect until it is replaced by a mutually satisfactory alternative. PT-FI also committed to commence construction of a new smelter during a five-year time frame after approval of the extension of its long-term mining rights.

On January 12, 2017, PT-FI suspended exports in response to Indonesian regulations in effect at the time. In addition, as a result of labor disturbances and a delay in the renewal of its export license for anode slimes, PT Smelting's (PT-FI's 25-percent-owned copper smelter and refinery located in Gresik, Indonesia) operations were shut down from mid-January 2017 until early March 2017. On February 10, 2017, PT-FI was forced to suspend production as a result of limited storage capacity at PT-FI and PT Smelting. On April 21, 2017, the Indonesian government issued a permit to PT-FI that allowed exports to resume for a six-month period, and PT-FI commenced export shipments.

In mid-February 2017, pursuant to the COW's dispute resolution provisions, PT-FI provided formal notice to the Indonesian government of an impending dispute listing the government's breaches and violations of the COW as described in the risk factor below "PT-FI's COW may be subject to termination if we do not comply with our contractual obligations, and if a dispute arises, we may have to submit to the jurisdiction of an international arbitration panel."

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As a result of the 2017 regulatory restrictions and uncertainties regarding long-term investment stability, PT-FI took actions to adjust its cost structure, slow investments in its underground development projects and new smelter, and place certain of its workforce on furlough programs.

In late March 2017, the Indonesian government amended the regulations to enable PT-FI to retain its COW until replaced with an IUPK accompanied by an investment stability agreement, and to grant PT-FI a temporary IUPK. In April 2017, PT-FI entered into a MOU with the Indonesian government confirming that the COW would continue to be valid and honored until replaced by a mutually agreed IUPK and investment stability agreement. In the MOU, PT-FI agreed to continue to pay a 5.0 percent export duty during this period. Subsequently, the Customs Office of the Minister of Finance refused to recognize the 5.0 percent export duty under the MOU and imposed a 7.5 percent export duty under the Ministry of Finance regulations. Since resuming exports on April 21, 2017, PT-FI has paid the 7.5 percent export duty under protest while the matter is pending in Indonesia Tax Court proceedings.

Following a framework understanding reached in August 2017, the parties have engaged in negotiation and documentation of a special mining license and accompanying documentation for assurances on legal and fiscal terms to replace the COW while providing PT-FI with long-term mining rights through 2041. In addition, the IUPK would provide that PT-FI would construct a new smelter in Indonesia within five years of reaching a definitive agreement and include agreement for the divestment of 51 percent of the project area interests to Indonesian participants at fair market value. Execution of a definitive agreement will require approval by our Board of Directors (the Board) and our joint venture partner, Rio Tinto plc (Rio Tinto), as well as the modification or revocation of current regulations and the implementation of new regulations by the Indonesian government.

In late 2017, the Indonesian government (including the regional government of Papua Province and Mimika Regency) and PT Indonesia Asahan Aluminium (Inalum), a state-owned enterprise, which will lead the government's consortium of investors, agreed to form a special purpose company to acquire Grasberg project area interests. Inalum is wholly owned by the Indonesian government and currently holds 9.36 percent of PT-FI's outstanding common stock. We are engaged in discussions with Inalum and Rio Tinto regarding potential arrangements that would result in the Inalum consortium acquiring interests that would meet the Indonesian government's 51 percent ownership objective in a manner satisfactory to all parties, and in a structure that would provide for continuity of our management of PT-FI's operations and governance of the business. The parties continue to negotiate documentation on a comprehensive agreement for PT-FI's extended operations and to reach agreement on timing, process and governance matters relating to the divestment. The parties have a mutual objective of completing negotiations and the required documentation during the first half of 2018.

In December 2017, PT-FI was granted an extension of its temporary IUPK through June 30, 2018, to enable exports to continue while negotiations on a definitive agreement proceed. In February 2018, PT-FI received an extension of its export license through February 15, 2019. On February 15, 2018, PT Smelting submitted an application to renew its anode slimes export license, which expires March 1, 2018.

Until a definitive agreement is reached, PT-FI has reserved all rights under its COW, including dispute resolution procedures. We cannot predict whether PT-FI will be successful in reaching a satisfactory agreement on the terms of its long-term mining rights. If PT-FI is unable to reach a definitive agreement with the Indonesian government on its long-term rights, we intend to reduce or defer investments significantly in underground development projects, which would have a material adverse effect on our future production, cash flow, results of operations and financial position, and could result in asset impairments, inventory write downs, difficulty in meeting covenants under our credit facilities, and a significant reduction in our reported mineral reserves.

In 2018, Indonesia will hold elections for legislators at the provincial and district levels, including the Province of Papua and Mimika Regency, and national legislative elections will be held in 2019. The presidential election will be

held in April 2019, with a run-off in August 2019, if required. Political considerations leading up to these elections could impact our progress in reaching a definitive agreement with the Indonesian government on our long-term rights and the outcome of these elections could affect the country's policies pertaining to foreign investment.

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PT-FI's COW may be subject to termination if we do not comply with our contractual obligations, and if a dispute arises, we may have to submit to the jurisdiction of an international arbitration panel.

PT-FI's COW was entered into under Indonesia's 1967 Foreign Capital Investment Law, which provides guarantees of remittance rights and protection against nationalization. The COW may be subject to termination by the Indonesian government if we do not satisfy our contractual obligations, which include the payment of royalties and taxes to the government and the satisfaction of certain mining, environmental, safety and health requirements.

Recently adopted Indonesian laws and regulations conflict with the mining rights established under the COW. Although the COW grants to PT-FI the unencumbered right to operate in accordance with the COW, government agencies have sought and continue to seek to impose additional restrictions on PT-FI that could affect exploration and operating requirements. For further discussion, refer to the above risk factor "Because our Grasberg mining operation in Indonesia is a significant operating asset, our business may continue to be adversely affected by political, economic and social uncertainties in Indonesia."

PT-FI's COW requires that disputes with the Indonesian government be submitted to international arbitration. In mid-February 2017, pursuant to the COW's formal dispute resolution provisions, PT-FI provided formal notice to the Indonesian government of an impending dispute listing the government's breaches and violations of the COW, including, but not limited to, the following:

- Restrictions on PT-FI's basic right to export mining products in violation of the COW;
- Imposition of export duties other than those taxes and other charges expressly provided for in the COW;
- Imposition of surface water taxes in excess of the restrictions imposed by the COW (refer to Note 12 for further discussion of these assessments);
- Requirement for PT-FI to build a smelter, while such requirements are not contained in the COW;
- Unreasonable withholding and delay in granting approval of two successive ten-year extensions of the term of the COW; and
- Imposition of divestment requirements that are not provided for in the COW.

If the dispute is not resolved, PT-FI may commence arbitration under the United Nations Commission on International Trade Law Arbitration Rules to enforce all provisions of the COW and seek damages, specifically in respect of the issuance of the January 11, 2017, regulations which are not in accordance with honoring the contractual commitments of the Indonesian government and PT-FI under the COW. The arbitration proceedings would take place in Jakarta, Indonesia, and for limited purposes, would be overseen by the Indonesian courts under the Indonesian Arbitration Act. The international arbitration process is complex and could take considerable time to complete, and there is no assurance that we will prevail. If we prevail, we will face the additional risk of having to enforce the judgment of an international arbitration panel against Indonesia within its own territory. Additionally, our operations may be materially and adversely affected while resolution of a dispute is pending.

At times, certain government officials and others in Indonesia have questioned the validity of contracts entered into by the Indonesian government prior to May 1998 (i.e., during the Suharto regime, which lasted over 30 years), including PT-FI's COW, which was signed in December 1991. We cannot provide assurance that the validity of, or our compliance with, the COW will not be challenged for political or other reasons.

We will not mine all of our ore reserves in Indonesia before the initial term of our COW expires.

Our proven and probable ore reserves in Indonesia reflect estimates of minerals that can be recovered through the end of 2041, and our current mine plan and planned operations are based on the assumption that we will receive the two 10-year extensions. As a result, we will not mine all of these ore reserves during the initial term of the current COW. Prior to the end of 2021, we expect to mine 12 percent of aggregate proven and probable recoverable ore at December 31, 2017, representing 18 percent of PT-FI's share of recoverable copper reserves and 29 percent of its share of recoverable gold reserves. There can be no assurance that the Indonesian government will approve our COW extensions. For further discussion, refer to the above risk factors "Because our



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Grasberg mining operation in Indonesia is a significant operating asset, our business may continue to be adversely affected by political, economic and social uncertainties in Indonesia” and “PT-FI’s COW may be subject to termination if we do not comply with our contractual obligations, and if a dispute arises, we may have to submit to the jurisdiction of an international arbitration panel.”

### Operational risks

Our mining operations are subject to operational risks that could adversely affect our business.

Our mines are very large in scale and, by their nature are subject to significant operational risks, some of which are outside of our control, and many of which are not covered fully, or in some cases even partially, by insurance. These operational risks, which could materially and adversely affect our business, operating results and cash flow, include earthquakes, rainstorms, floods, and other natural disasters; equipment failures; accidents; wall failures and rock slides in our open-pit mines, and structural collapses of our underground mines or tailings impoundments; and lower than expected ore grades or recovery rates.

The waste rock (including overburden) and tailings produced in our mining operations represent our largest volume of waste material. Managing the volume of waste rock and tailings presents significant environmental, safety and engineering challenges and risks. We maintain large leach pads and tailings impoundments containing viscous material, which are effectively large dams that must be engineered, constructed and monitored to assure structural stability and avoid leakages or structural collapse. Our tailings impoundments in arid areas must have effective programs to suppress fugitive dust emissions, and we must effectively monitor and treat acid rock drainage at all of our operations. In Indonesia, we use a river transport system for tailings management, which presents other risks, as discussed below.

The failure of tailings and other impoundments at any of our mining operations could cause severe property and environmental damage and loss of life, and we apply significant financial resources and both internal and external technical resources to the effective, safe management of all those facilities. The importance of careful design, management and monitoring of large impoundments was emphasized in recent years by large scale tailings dam failures at unaffiliated mines, which caused extensive property and environmental damage and resulted in the loss of life. Our tailing stewardship program, which involves designated Engineers of Record and periodic oversight by external Tailing Review Boards at numerous operations, complies with the Tailings Governance Framework adopted in December 2016 by International Council on Mining and Metals. We continue to augment our existing practices in an effort to reduce the risk of catastrophic failure of tailings storage facilities.

Labor unrest, violence, activism and civil and religious strife could disrupt our operations and may adversely affect our business, financial condition, results of operations and prospects.

As of December 31, 2017, approximately 40 percent of our global labor force was covered by collective bargaining agreements and approximately 15 percent of our global labor force was covered by agreements that have expired and are currently being negotiated or will expire during 2018.

Labor agreements are negotiated on a periodic basis, and may not be renewed on reasonably satisfactory terms to us or at all. If we do not successfully negotiate new collective bargaining agreements with our union workers, we may incur prolonged strikes and other work stoppages at our mining operations, which could adversely affect our financial condition and results of operations. Additionally, if we enter into a new labor agreement with any union that significantly increases our labor costs relative to our competitors, our ability to compete may be materially and adversely affected. Refer to Items 1. and 2., “Business and Properties,” for additional information regarding labor matters, and expiration dates of such agreements.

We could also experience labor disruptions such as work stoppages, work slowdowns, union organizing campaigns, strikes, or lockouts that could adversely affect our operations. For example, during third-quarter 2016, PT-FI experienced labor productivity issues and a 10-day work stoppage that began in late September 2016. These labor productivity issues continued during fourth-quarter 2016 and the first half of 2017. Significant reductions in productivity or protracted work stoppages at one or more of our operations could significantly reduce our production and sales volumes, which could adversely affect our cash flow, results of operations and financial condition.

Indonesia has long faced separatist movements and civil and religious strife in a number of provinces. Several separatist groups have sought increased political independence for the province of Papua, where our Grasberg

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minerals district is located. In Papua, there have been sporadic attacks on civilians by separatists and sporadic but highly publicized conflicts between separatists and the Indonesian military and police. In addition, illegal miners have periodically clashed with police who have attempted for years to move them away from our facilities. Social, economic and political instability in Papua could materially and adversely affect us if it results in damage to our property or interruption of our Indonesia operations.

In 2009, a series of shooting incidents occurred within the PT-FI project area, including along the road leading to our mining and milling operations. The shooting incidents continued on a sporadic basis through January 11, 2015. During this time, there were 20 fatalities and 59 injuries to our employees, contractor employees, government security personnel and civilians. The next shooting incident occurred in August 2017, and a series of shooting incidents has continued on a sporadic basis through February 16, 2018. From August 2017 through February 16, 2018, there have been 24 shooting incidents within the PT-FI project area and five shooting incidents in nearby areas, which resulted in 16 injuries to PT-FI's workforce and one civilian injury. Additionally, during law enforcement actions, government security personnel incurred seven injuries and two fatalities. The safety of our workforce is a critical concern, and PT-FI continues to work with the Indonesian government to address security issues. The investigation of these incidents is ongoing. We also continue to limit the use of the road leading to our mining and milling operations to secured convoys, including transport of personnel by armored vehicles in designated areas.

We cannot predict whether additional incidents will occur that could disrupt or suspend our Indonesian operations. If other disruptive incidents occur, they could adversely affect our results of operations and financial condition in ways that we cannot predict at this time.

Our mining operations depend on the availability of secure water supplies.

Our mining operations require physical availability and secure legal rights to significant quantities of water for mining and ore processing activities, and related support facilities. Most of our North America and South America mining operations are in areas where competition for water supplies is significant. Continuous production at our mines is dependent on many factors, including our ability to maintain our water rights and claims, and the continuing physical availability of the water supplies.

In Arizona, where our operations use both surface and ground water, we are a participant in an active general stream adjudication in which the Arizona courts have been attempting, for over 40 years, to quantify and prioritize surface water claims for the Gila River, one of the state's largest river systems, which primarily affects our Morenci, Safford and Sierrita mines. The adjudication is addressing the state law claims of thousands of competing users, including us, as well as significant federal water claims that are potentially adverse to the state law claims of both surface water and groundwater users. Groundwater is treated differently from surface water under Arizona law, which historically allowed landowners to pump subsurface water, subject only to the requirement of putting it to "reasonable use." However, court decisions in the adjudication have concluded that underground water is often hydrologically connected to surface water so that it actually is surface water and is therefore subject to the Arizona doctrine of prior appropriation, as a result of which it would be subject to the adjudication and potentially unavailable to groundwater pumpers in the absence of valid surface water claims, which historic groundwater pumpers typically do not have. Any re-characterization of groundwater as surface water could affect the ability of consumers, farmers, ranchers, municipalities, and industrial users like us to continue to access water supplies that have been relied on for decades. Because we are a user of both groundwater and surface water in Arizona, we are an active participant in the adjudication proceeding.

Water for our Cerro Verde operation in Peru comes from renewable sources through a series of storage reservoirs on the Rio Chili watershed that collects water primarily from seasonal precipitation. As a result of occasional drought conditions, temporary supply shortages are possible that could affect our Cerro Verde operations. In January 2016, the

Peruvian government declared a temporary state of emergency with respect to the water supply in the Rio Chili Basin because of drought conditions. As a result, the Cerro Verde water rights from the Rio Chili were temporarily decreased during February 2016.

Water for our El Abra mining operation in Chile comes from the continued pumping of groundwater from the Salar de Ascotán aquifer. In 2010, El Abra obtained regulatory approval for the continued pumping of groundwater from the Salar de Ascotán aquifer for its sulfide processing plant, which began operations in 2011. The agreement to pump from this aquifer is subject to continued monitoring of the aquifer level to ensure that environmentally sensitive areas are not impacted by our pumping. If impact occurs, we would have to reduce pumping to restore water levels, which could have an adverse effect on production from El Abra.

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Although we typically have sufficient water for our Indonesian operations, lower rainfall could affect our water supply availability from time to time.

Although each of our mining operations currently has access to sufficient water supplies to support current operational demands, as discussed above some supplies are subject to adjudication proceedings, the outcome of which we cannot predict, and the availability of additional supplies that may be required for potential future expansions is uncertain. While we are taking actions to acquire additional back-up water supplies, such supplies may not be available at acceptable cost, or at all, so that the loss of a water right or currently available water supply could force us to curtail operations or force premature closures, thereby increasing and/or accelerating costs or foregoing profitable operations.

In addition to the usual risks encountered in the mining industry, our Indonesia mining operations involve additional risks because they are located in very remote areas and on unusually difficult terrain.

The Grasberg minerals district is located in steep mountainous terrain in a remote area of Indonesia. These conditions have required us to overcome special engineering difficulties and develop extensive infrastructure facilities. In addition, the area receives considerable rainfall, which has led to periodic floods and mudslides. The mine site is also in an active seismic area and has experienced earth tremors from time to time. Our insurance may not sufficiently cover an unexpected natural or operating disaster.

Underground mining operations can be particularly dangerous, and in May 2013, a tragic accident, which resulted in 28 fatalities and 10 injuries, occurred at PT-FI when the rock structure above the underground ceiling of a training facility collapsed. PT-FI temporarily suspended mining and processing activities at the Grasberg complex to conduct inspections and resumed open-pit mining and concentrating activities on June 24, 2013, and underground operations on July 9, 2013. No assurance can be given that similar events will not occur in the future.

We must continually replace reserves depleted by production, but our exploration activities may not result in additional discoveries.

Our existing mineral reserves will be depleted over time by production from our operations. Because our profits are primarily derived from our mining operations, our ability to replenish our mineral reserves is essential to our long-term success. Our exploration projects involve many risks, require substantial expenditures and may not result in the discovery of additional deposits that can be produced profitably. We may not be able to discover, enhance, develop or acquire reserves in sufficient quantities to maintain or grow our current reserve levels, which could negatively affect our cash flow, results of operations and financial condition.

Development projects are inherently risky and may require more capital than anticipated, which could adversely affect our business.

Consolidated capital expenditures are expected to approximate \$2.1 billion for 2018, including \$1.2 billion for major projects primarily associated with underground development activities in the Grasberg minerals district and development of the Lone Star oxide project. Refer to the risk factor "Because our Grasberg mining operation in Indonesia is a significant operating asset, our business may continue to be adversely affected by political, economic and social uncertainties in Indonesia" for further discussion of regulatory matters in Indonesia that may impact future investments in PT-FI's underground development projects.

There are many risks and uncertainties inherent in all development projects. The economic feasibility of development projects is based on many factors, including the accuracy of estimated reserves, estimated capital and operating costs, and estimated future prices of the relevant commodity. The capital expenditures and time required to develop new

mines or other projects are considerable, and changes in costs or timing can adversely affect project economics.

New development projects have no operating history upon which to base estimates of future cash flow. The actual costs, production rates and economic returns of our development projects may differ materially from our estimates, which may have a material adverse impact on our cash flows, results of operations and financial condition.

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Our operations are subject to extensive regulations, some of which require permits and other approvals. These regulations increase our costs and in some circumstances may delay or suspend our operations.

Our operations are subject to extensive and complex laws and regulations that are subject to change and to changing interpretation by governmental agencies and other bodies vested with broad supervisory authority. As a natural resource company, compliance with environmental legal requirements is an integral and costly part of our business. For additional information, see “Environmental risks” below. We are also subject to extensive regulation of worker health and safety, including the requirements of the U.S. Occupational Safety and Health Act and similar laws of other jurisdictions. In the U.S., the operation of our mines is subject to regulation by the U.S. Mine Safety and Health Administration (MSHA) under the Federal Mine Safety and Health Act of 1977. MSHA inspects our mines on a regular basis and issues citations and orders when it believes a violation has occurred. If such inspections result in an alleged violation, we may be subject to fines and penalties and, in instances of alleged significant violations, our mining operations could be subject to temporary or extended closures.

Many other governmental bodies regulate other aspects of our operations, and our failure to comply with these legal requirements can result in substantial penalties. In addition, new laws and regulations or changes to existing laws and regulations and new interpretations of existing laws and regulations by courts or regulatory authorities occur regularly, but are difficult to predict. Any such variations could have a material adverse effect on our cash flow, results of operations and financial condition.

Our business may be adversely affected by information technology disruptions.

Cybersecurity incidents are increasing in frequency, evolving in nature and include, but are not limited to, installation of malicious software, unauthorized access to data and other electronic security breaches that could lead to disruptions in systems, unauthorized release of confidential or otherwise protected information and the corruption of data. We have experienced cybersecurity incidents in the past and may experience them in the future. We believe we have implemented appropriate measures to mitigate potential risks. However, given the unpredictability of the timing, nature and scope of information technology disruptions, we could be subject to manipulation or improper use of our systems and networks or financial losses from remedial actions, any of which could have a material adverse effect on our cash flow, results of operations and financial condition.

### Environmental risks

Our operations are subject to complex, evolving and increasingly stringent environmental laws and regulations. Compliance with environmental regulatory requirements involves significant costs and may constrain existing operations or expansion opportunities.

Our operations, both in the U.S. and internationally, are subject to extensive environmental laws and regulations governing the generation, storage, treatment, transportation and disposal of hazardous substances; solid waste disposal; air emissions; wastewater discharges; remediation, restoration and reclamation of environmental contamination, including mine closures and reclamation; well plug and abandonment requirements; protection of endangered and protected species and designation of critical habitats; and other related matters. In addition, we must obtain regulatory permits and approvals to start, continue and expand operations.

Our Miami, Arizona, smelter processes approximately half of the aggregate copper concentrate produced by our North America copper mines. EPA regulations required us to invest approximately \$230 million in new pollution control equipment to reduce sulfur dioxide (SO<sub>2</sub>) to meet both regional haze requirements and to allow the state of Arizona to demonstrate compliance with EPA’s SO<sub>2</sub> ambient air quality standards. The new SO<sub>2</sub> pollution control equipment was operational as of the January 1, 2018, deadline imposed by EPA. We also obtained regulatory approvals to increase

the smelter's annual throughput to one million tons of copper concentrate, which has the additional benefit of increasing the production of sulphuric acid for use in our copper leach operations.

Laws such as CERCLA and similar state laws may expose us to joint and several liability for environmental damages caused by our operations, or by previous owners or operators of properties we acquired or are currently operating or at sites where we sent materials for processing, recycling or disposal. As discussed in more detail in the next risk factor, we have substantial obligations for environmental remediation on mining properties previously owned or operated by FMC and certain of its affiliates. Noncompliance with these laws and regulations could result in material penalties or other liabilities. In addition, compliance with these laws may from time to time result in delays in or changes to our development or expansion plans. Compliance with these laws and regulations imposes



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substantial costs, which we expect will continue to increase over time because of increased regulatory oversight, adoption of increasingly stringent environmental standards, as well as other factors.

New or revised environmental regulatory requirements are frequently proposed, many of which result in substantially increased costs for our business, including those regarding financial assurance in the financial risk factor above. In addition, in 2015, EPA promulgated rules that could reclassify certain mineral processing materials as “hazardous waste” under the federal Resource Conservation and Recovery Act (RCRA) and subject the industry to significant new and costly waste management requirements. These rules were challenged by multiple parties in court. In a decision issued in 2017, the court agreed in significant part with the challenges raised by the industry parties, and vacated key parts of the rule governing when hazardous process materials are considered “discarded” and, therefore, subject to regulation as solid waste under RCRA and EPA regulatory pronouncements.

EPA has also adopted rules that bring remote “tributaries” into the regulatory definition of “waters of the United States” that are protected by the Clean Water Act, thereby imposing significant additional restrictions on land uses in remote areas with only tenuous connections to active waterways. These rules, adopted in 2015, were challenged by multiple states and industry parties. EPA has moved forward to rescind these rules even as litigation challenging them is ongoing. On February 6, 2018, EPA published a final notice delaying the effective date of these rules to February 2020, which will allow it time to reconsider the definition of “waters of the United States.” This final notice has been challenged by states and environmental groups. In the meantime, EPA intends to administer the regulations in place prior to the 2015 rules and has asked for input on how it should define the scope of the Clean Water Act in future rulemaking.

Regulations have been considered at various governmental levels to increase federal financial responsibility requirements both for mine closure and reclamation and for oil and gas decommissioning. Adoption of these or similar new environmental regulations or more stringent application of existing regulations may materially increase our costs, threaten certain operating activities and constrain our expansion opportunities.

In February 2016, the Department of the Interior’s Fish & Wildlife Service (FWS) adopted final rules that broaden the regulatory definitions of “critical habitat” and “destruction or adverse modification,” both of which are integral to the FWS’s implementation of the Endangered Species Act, which protects federally-listed endangered and threatened species. The new rules increase FWS’s discretion to limit uses of land and water courses that may become suitable habitat for listed species in the future, or that are occasionally used by protected species. The new rules may limit the ability of landowners, including us, to obtain federal permits or authorizations needed for expansion of our operations, and may also affect our ability to obtain, retain or deliver water to some operations. In November 2016, the new rules were challenged in court by a coalition of states. In 2017, the Department of Interior indicated that it intends to reconsider these rules as part of its plans to modernize the implementation of the Endangered Species Act. Also in 2017, the FWS withdrew certain proposed designations of critical habitat affecting our properties.

We incurred environmental capital expenditures and other environmental costs (including our joint venture partners’ shares) to comply with applicable environmental laws and regulations that affect our operations totaling \$0.5 billion in 2017 and \$0.4 billion in each of 2016 and 2015. For 2018, we expect to incur approximately \$0.5 billion of aggregate environmental capital expenditures and other environmental costs. The timing and amounts of estimated payments could change as a result of changes in regulatory requirements, changes in scope and costs of reclamation and plug and abandonment activities, the settlement of environmental matters and the rate at which actual spending occurs on continuing matters.

We incur significant costs for remediating environmental conditions on properties that have not been operated in many years.

FMC and its subsidiaries, and many of their affiliates and predecessor companies, have been involved in exploration, mining, milling, smelting and manufacturing in the U.S. for more than a century. Activities that occurred in the late 19th century and the 20th century prior to the advent of modern environmental laws were not subject to environmental regulation and were conducted before American industrial companies fully understood the long-term effects of their operations on the surrounding environment.

With the passage of CERCLA in 1980, companies like FMC became legally responsible for remediating hazardous substances released into the environment from properties owned or operated by them as well as properties where they arranged for disposal of such substances, irrespective of when the release to the environment occurred or who

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caused it. That liability is often asserted on a joint and several basis with other prior and subsequent owners, operators and arrangers, meaning that each owner or operator of the property is, and each arranger may be, held fully responsible for the remediation, although in many cases some or all of the other responsible parties no longer exist, do not have the financial ability to respond or cannot be found. As a result, because of our acquisition of FMC in 2007, many of the subsidiary companies we now own are potentially responsible for a wide variety of environmental remediation projects throughout the U.S., and we expect to spend substantial sums annually for many years to address those remediation issues. We are also subject to claims where the release of hazardous substances is alleged to have damaged natural resources. At December 31, 2017, we had more than 100 active remediation projects in 26 U.S. states. In addition, FMC and certain affiliates and predecessor companies were parties to agreements relating to the transfer of businesses or properties that contained indemnification provisions relating to environmental matters, and from time to time these provisions become the source of claims against us.

At December 31, 2017, we had \$1.4 billion recorded in our consolidated balance sheet for environmental obligations attributable to CERCLA or analogous state programs and for estimated future costs associated with environmental matters at closed facilities or closed portions of operating facilities. Our environmental obligation estimates are primarily based upon:

- Our knowledge and beliefs about complex scientific and historical facts and circumstances that in many cases occurred many decades ago;

- Our beliefs and assumptions regarding the nature, extent and duration of remediation activities that we will be required to undertake and the estimated costs of those remediation activities, which are subject to varying interpretations; and

- Our beliefs regarding the requirements that are imposed on us by existing laws and regulations and, in some cases, the clarification of uncertain regulatory requirements that could materially affect our environmental obligation estimates.

Significant adjustments to these estimates are likely to occur in the future as additional information becomes available. The actual environmental costs may exceed our current and future accruals for these costs, and any such changes could be material.

In addition, remediation standards imposed by EPA and state environmental agencies have generally become more stringent over time and may become even more stringent in the future. Imposition of more stringent remediation standards, particularly for arsenic and lead in soils, poses a risk that additional remediation work could be required at our active remediation sites and at sites that we have already remediated to the satisfaction of the responsible governmental agencies, and may increase the risk of toxic tort litigation.

Refer to Note 12 for further discussion of our environmental obligations.

Our Indonesia mining operations create difficult and costly environmental challenges, and future changes in environmental laws, or unanticipated environmental impacts from those operations, could require us to incur increased costs.

Mining operations on the scale of our Indonesia operations involve significant environmental risks and challenges. Our primary challenge is to dispose of the large amount of crushed and ground rock material, called tailings, that results from the process by which we physically separate the copper-, gold- and silver-bearing materials from the ore that we mine. Our tailings management plan, which has been approved by the Indonesian government, uses the unnavigable river system in the highlands near our mine to transport the tailings to an engineered area in the lowlands where the tailings and natural sediments are managed in a deposition area. Lateral levees have been constructed to

help contain the footprint of the tailings and to limit their impact in the lowlands.

Another major environmental challenge is managing overburden, which is the rock that must be moved aside in the mining process to reach the ore. In the presence of air, water and naturally occurring bacteria, some overburden can generate acid rock drainage, or acidic water containing dissolved metals that, if not properly managed, can adversely affect the environment. In addition, overburden stockpiles are subject to erosion caused by the large amounts of rainfall, with the eroded stockpile material eventually being deposited in the lowlands tailings management area; this additional material, while predicted in our environmental studies, influences the deposition of finer tailings material in the estuary.

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In October 2017, Indonesia's Ministry of Environment and Forestry (the Ministry) notified PT-FI of administrative sanctions related to certain activities the Ministry indicated are not reflected in its environmental permit. The Ministry also notified PT-FI that certain operational activities were inconsistent with factors set forth in its environmental permitting studies and that additional monitoring and improvements need to be undertaken related to air quality, water drainage, treatment and handling of certain wastes, and tailings management. PT-FI has been engaged in a process to update its permits through submissions and dialogue with the Ministry, which began in late 2014. PT-FI believes that it has submitted the required documentation to update its permits, and is in the process of addressing other points raised by the Ministry.

From time to time, certain Indonesian government officials have raised questions with respect to our tailings and overburden management plans, including a suggestion that we implement a pipeline system rather than the river transport system for tailings management and disposition. Because our Indonesia mining operations are remotely located in steep mountainous terrain and in an active seismic area, a pipeline system would be costly, difficult to construct and maintain, and more prone to catastrophic failure, and could therefore involve significant potentially adverse environmental issues. Based on our own studies and others conducted by third parties we do not believe that a pipeline system is necessary or practical.

Regulation of greenhouse gas emissions and climate change issues may increase our costs and adversely affect our operations.

Our copper mining operations require significant energy, principally diesel, electricity, coal and natural gas, most of which is obtained from third parties under long-term contracts. Energy represented 18 percent of our copper mine site operating costs in 2017.

Carbon-based energy is a significant input in our operations, although the use of diesel in our haul trucks, coal for power generation, and availability of renewable energy for purchased power varies significantly depending on site production and country-specific circumstances. The potential physical impacts of climate change on our operations are highly uncertain, and would vary by operation based on particular geographic circumstances. As a result of the Paris Agreement reached during the 21<sup>st</sup> Conference of the Parties to the United Nations Framework Convention on Climate Change in 2015, a number of governments have pledged "Nationally Determined Contributions" to control and reduce greenhouse gas emissions. Although EPA finalized regulations governing greenhouse gas emissions from new, modified, and existing power plants (known as the Clean Power Plan), implementation of these rules has been delayed with the goal of revising the Clean Power Plan. Increased regulation of greenhouse gas emissions may increase our costs.

### Other risks

Our holding company structure may impact our ability to service debt and our stockholders' ability to receive dividends.

We are a holding company with no material assets other than the capital stock and intercompany receivables of our subsidiaries. As a result, our ability to repay our indebtedness and pay dividends is dependent on the generation of cash flow by our subsidiaries and their ability to make such cash available to us, by dividend, loan, debt repayment or otherwise. Our subsidiaries do not have any obligation to make funds available to us to repay our indebtedness or pay dividends. Dividends from subsidiaries that are not wholly owned are shared with other equity owners. Cash at our international operations is also typically subject to foreign withholding taxes upon repatriation into the U.S.

In addition, our subsidiaries may not be able to, or be permitted to, make distributions to us or repay loans to us, to enable us to repay our indebtedness or pay dividends. Each of our subsidiaries is a distinct legal entity and, under certain circumstances, legal restrictions, as well as the financial condition and operating requirements of our subsidiaries, may limit our ability to obtain cash from our subsidiaries. Certain of our subsidiaries are parties to credit agreements that restrict their ability to make distributions or loan repayments to us if such subsidiary is in default under such agreements, or to transfer substantially all of the assets of such subsidiary without the consent of the lenders.

Our rights to participate in any distribution of our subsidiaries' assets upon their liquidation, reorganization or insolvency would generally be subject to the prior claims of the subsidiaries' creditors, including any trade creditors.

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Anti-takeover provisions in our charter documents and Delaware law may make an acquisition of us more difficult.

Anti-takeover provisions in our charter documents and Delaware law may make an acquisition of us more difficult. These provisions:

Authorize the Board to issue preferred stock without stockholder approval and to designate the rights, preferences and privileges of each class; if issued, such preferred stock would increase the number of outstanding shares of our capital stock and could include terms that may deter an acquisition of us;

Establish advance notice requirements for nominations to the Board or for proposals that can be presented at stockholder meetings;

Limit who may call stockholder meetings; and

Require the approval of the holders of two thirds of our outstanding common stock to enter into certain business combination transactions, subject to certain exceptions, including if the consideration to be received by our common stockholders in the transaction is deemed to be a fair price.

These provisions may discourage potential takeover attempts, discourage bids for our common stock at a premium over market price or adversely affect the market price of, and the voting and other rights of the holders of, our common stock. These provisions could also discourage proxy contests and make it more difficult for stockholders to elect directors other than the candidates nominated by the Board.

In addition, because we are incorporated in Delaware, we are governed by the provisions of Section 203 of the Delaware General Corporation Law, which may prohibit large stockholders from consummating a merger with, or acquisition of, us.

These provisions may deter an acquisition of us that might otherwise be attractive to stockholders.

Item 1B. Unresolved Staff Comments.

Not applicable.

Item 3. Legal Proceedings.

We are involved in numerous legal proceedings that arise in the ordinary course of our business or are associated with environmental issues arising from legacy operations conducted over the years by Freeport Minerals Corporation (FMC) and its affiliates. We are also involved periodically in reviews, inquiries, investigations and other proceedings initiated by or involving government agencies, some of which may result in adverse judgments, settlements, fines, penalties, injunctions or other relief. Management does not believe, based on currently available information, that the outcome of any legal proceeding will have a material adverse effect on our financial condition; although individual outcomes could be material to our operating results for a particular period, depending on the nature and magnitude of the outcome and the operating results for the period. Below is a discussion of our material water rights legal proceedings. Refer to Note 12 for discussion of our other material legal proceedings.

### Water Rights Legal Proceedings

Our operations in the western United States (U.S.) require significant secure quantities of water for mining, ore processing and related support facilities. Continuous operation of our mines is dependent on, among other things, our

ability to maintain our water rights and claims and the continuing physical availability of the water supplies. In the arid western U.S., where certain of our mines are located, water rights are often contested, and disputes over water rights are generally time-consuming, expensive and not necessarily dispositive unless they resolve both actual and potential claims. The loss of a water right, or a currently available water supply could force us to curtail operations, or force premature closures, thereby increasing and/or accelerating costs or foregoing profitable operations.

At our North America operations, certain of our water supplies are supported by surface water rights, which give us the right to use public waters for a statutorily defined beneficial use at a designated location. In Arizona, where our



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operations use both surface and groundwater, we are a participant in an active general stream adjudication in which the Arizona courts have been attempting, for over 40 years, to quantify and prioritize surface water claims for the Gila River, one of the state's largest river systems, which primarily affect our Morenci, Safford and Sierrita mines. The adjudication is addressing the state law claims of thousands of competing users, including us, as well as significant federal water claims that are potentially adverse to the state law claims of both surface water and groundwater users. Groundwater is treated differently from surface water under Arizona law, which historically allowed land owners to pump unlimited quantities of subsurface water, subject only to the requirement of putting it to "reasonable use." However, court decisions in the adjudication have concluded that certain underground water constitutes "subflow" that is to be treated legally as surface water and is therefore subject to the Arizona doctrine of prior appropriation. This category of underground water is subject to the adjudication and potentially unavailable to groundwater pumpers in the absence of valid surface water claims, which historic groundwater pumpers typically do not have. Any re-characterization of groundwater as surface water could affect the ability of consumers, farmers, ranchers, municipalities, and industrial users like us to continue to access water supplies that have been relied on for decades. Because we are a user of both groundwater and surface water in Arizona, we are an active participant in the adjudication proceeding.

In Re The General Adjudication of All Rights to Use Water in the Gila River System and Sources, Maricopa County, Superior Court, Cause Nos. W-1 (Salt), W-2 (Verde), W-3 (Upper Gila), and W-4 (San Pedro). This case was originally initiated in 1974 with the filing of a petition with the Arizona State Land Department and was consolidated and transferred to the Maricopa County Superior Court in 1981. The principal parties, in addition to us, include: the state of Arizona; the Gila Valley Irrigation District; the Franklin Irrigation District; the San Carlos Irrigation and Drainage District; the Salt River Project; the San Carlos Apache Tribe; the Gila River Indian Community (GRIC); and the U.S. on behalf of those tribes, on its own behalf, and on behalf of the White Mountain Apache Tribe, the Fort McDowell Mohave-Apache Indian Community, the Salt River Pima-Maricopa Indian Community, and the Payson Community of Yavapai Apache Indians.

Prior to January 1, 1983, various Indian tribes filed suits in the U.S. District Court in Arizona claiming superior rights to water being used by many other water users, including us, and claiming damages for prior use in derogation of their allegedly superior rights. These federal proceedings have either been stayed pending the Arizona Superior Court adjudications or have been settled.

The Maricopa County Superior Court issued a decision in 2005 in the Gila River adjudication that directed the Arizona Department of Water Resources (ADWR) to prepare detailed recommendations regarding the delineation of the "subflow" zone of the San Pedro River, a tributary of the Gila River. According to the court, the subflow zone is the subsurface area adjacent to the river consisting of the floodplain Holocene alluvium. Underground water within the subflow zone is presumed to constitute appropriable subflow rather than groundwater. Although we have minimal interests in the San Pedro River Basin, a decision that re-characterizes groundwater in that basin as appropriable surface water may set a precedent for other river systems in Arizona that could have material implications for many commercial, industrial, municipal and agricultural users of groundwater, including our Arizona operations.

In June 2009, ADWR produced its recommended subflow zone delineation, which was objected to by numerous parties. Following a series of hearings and court rulings, ADWR submitted a revised subflow zone delineation report in 2014. The court held hearings in 2015 to address the parties' comments and objections. In 2017, the court approved ADWR's revised delineation, and no party has appealed that decision.

Also in 2014, ADWR submitted a proposal for the next projects that it believes should be undertaken in the case, including the development of procedures for "cone of depression" analyses to determine whether a well located outside of the subflow zone creates a cone of depression that intersects the subflow zone and causes a 0.1 foot drawdown. Based on the cone of depression analyses, wells outside of the subflow zone could be subject to the jurisdiction of the

adjudication court. In the absence of a valid surface water claim to support the pumping, owners of wells deemed to be depleting the subflow zone through their cones of depression may be required to refrain from pumping or pay damages.

On January 27, 2017, ADWR issued a report containing its recommended cone of depression test, and on January 31, 2017, the Special Master issued an order initiating proceedings on the Cone of Depression Test Methodology developed by ADWR. Parties filed preliminary objections to the proposed methodology contained in ADWR's report on March 6, 2017. On March 15, 2017, the Special Master held a status conference to determine the timing and scope of proceedings necessary to resolve the objections, including the submission of supplemental objections and

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expert reports. Following the status conference, the Special Master established a discovery schedule leading up to a trial in March 2018 concerning ADWR's recommended cone of depression test. During the course of these proceedings, it has been established that ADWR's current recommended cone of depression test is for the purpose of establishing which wells are subject to the jurisdiction of the adjudication court. This phase of current cone of depression testing will not satisfy the burden of proving that a well is pumping subflow, nor will it establish how much of a well's production is subflow versus groundwater. These matters will be determined by a subsequent "subflow depletion test," which has not yet been formulated. The Special Master has ordered ADWR to produce an initial report on the subflow depletion test by November 16, 2018. The parties' comments to ADWR's initial report are due on January 18, 2019.

As part of the Gila River adjudication, the U.S. has asserted numerous claims for express and implied "reserved" surface water and groundwater rights on Indian and non-Indian federal lands throughout Arizona. These claims are related to reservations of federal land for specific purposes (e.g., Indian reservations, national parks, military bases and wilderness areas). Unlike state law-based water rights, federal reserved water rights are given priority in the prior appropriation system based on the date the land was reserved, not the date that water was first used on the land. In addition, federal reserved water rights, if recognized by the court, may enjoy greater protection from groundwater pumping than is accorded to state law-based water rights.

Because federal reserved water rights have not yet been quantified, the task of determining how much water each federal reservation may use has been left to the Gila River adjudication court. Several "contested cases" to quantify reserved water rights for particular federal reservations in Arizona are currently pending in the adjudication. For instance, *In re Aravaipa Canyon Wilderness Area* is a contested case to resolve the U.S.'s claims to water for the Aravaipa Canyon Wilderness Area. These claims went to trial in 2015 and the parties are awaiting a decision. *In Re Fort Huachuca* concerns the U.S.'s claims to water for an Army base. Trial concluded in February 2017, and the parties are awaiting a decision. *In Re Redfield Canyon Wilderness Area* is a contested case concerning U.S. claims for another wilderness area. Trial occurred in May 2017, and the matter will be taken under advisement following the completion of post-trial briefings. *In Re San Pedro Riparian National Conservation Area* involves U.S. claims for a national conservation area, and the case is scheduled for trial in April and May 2018.

In multiple instances, the U.S. asserts a right to all water in a particular watershed that was not effectively appropriated under state law prior to the establishment of the federal reservation. This creates risks for both surface water users and groundwater users because such expansive claims may severely impede current and future uses of water within the same watershed. Federal reserved rights present additional risks to water users aside from the significant quantities of water claimed by the U.S. Of particular significance, federal reserved rights enjoy greater protection from groundwater pumping than is accorded to state law-based water rights.

Because there are numerous federal reservations in watersheds across Arizona, the reserved water right claims of the U.S. pose a significant risk to multiple operations, including Morenci and Safford in the Upper Gila River watershed, and Sierrita in the Santa Cruz watershed. Because federal reserved water rights may adversely affect water uses at each of these operations, we have been actively involved in litigation over these claims.

Given the legal and technical complexity of these adjudications, their long history, and their long-term legal, economic and political implications, it is difficult to predict the timing or the outcome of these proceedings. If we are unable to satisfactorily resolve the issues being addressed in the adjudications, our ability to pump groundwater could be diminished or curtailed, and our operations at Morenci, Safford and Sierrita mines could be adversely affected unless we are able to acquire alternative resources.



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### Item 4. Mine Safety Disclosures.

The safety and health of all employees is our highest priority. Management believes that safety and health considerations are integral to, and compatible with, all other functions in the organization and that proper safety and health management will enhance production and reduce costs. Our approach towards the health and safety of our workforce is to continuously improve performance through implementing robust management systems and providing adequate training, safety incentive and occupational health programs.

Our objective is zero work place injuries and occupational illnesses. We measure progress toward achieving our objective against regularly established benchmarks, including measuring company-wide Total Recordable Incident Rates (TRIR). Our TRIR (including contractors) was 0.75 per 200,000 man-hours worked in 2017, 0.64 per 200,000 man-hours worked in 2016 and 0.56 per 200,000 man-hours worked in 2015. The metal mining sector industry average reported by the U.S. Mine Safety and Health Administration was 1.93 per 200,000 man-hours worked in 2016 and 2.02 per 200,000 man-hours worked in 2015. The metal mining sector industry average for 2017 was not available at the time of this filing.

Refer to Exhibit 95.1 for mine safety disclosures required in accordance with Section 1503(a) of the Dodd-Frank Wall Street Reform and Consumer Protection Act and Item 104 of Regulation S-K.

### Executive Officers of the Registrant.

Certain information as of January 31, 2018, about our executive officers is set forth in the following table and accompanying text:

Name	Age	Position or Office
Richard C. Adkerson	71	Vice Chairman of the Board, President and Chief Executive Officer
Kathleen L. Quirk	54	Executive Vice President, Chief Financial Officer and Treasurer
Harry M. "Red" Conger, IV	62	President and Chief Operating Officer - Americas
Michael J. Arnold	65	Executive Vice President and Chief Administrative Officer

Richard C. Adkerson has served as Vice Chairman of the Board since June 2013, President since January 2008 and also from April 1997 to March 2007, Chief Executive Officer since December 2003 and a director since October 2006. Mr. Adkerson previously served as Chief Financial Officer from October 2000 to December 2003.

Kathleen L. Quirk has served as Executive Vice President since March 2007, Chief Financial Officer since December 2003 and Treasurer since February 2000. Ms. Quirk previously served as Senior Vice President from December 2003 to March 2007. Ms. Quirk also serves on the Board of Directors of Vulcan Materials Company.

Harry M. "Red" Conger, IV has served as Chief Operating Officer - Americas since July 2015, and as President - Americas since 2007. Mr. Conger has also served as President and Chief Operating Officer - Rod and Refining since 2014. He served as Chief Operating Officer - Africa Mining from July 2015 to December 2016. Prior to 2007, he served in a number of senior operations positions at Phelps Dodge Corporation.

Michael J. Arnold has served as Executive Vice President since March 2007 and Chief Administrative Officer since December 2003.

## PART II

## Item 5. Market for Registrant's Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities.

## Unregistered Sales of Equity Securities

None.

## Common Stock

Our common shares trade on the New York Stock Exchange (NYSE) under the symbol "FCX." The FCX share price is reported daily in the financial press under "FMCG" in most listings of NYSE securities. The table below shows the NYSE composite tape common share price ranges during 2017 and 2016:

	2017		2016	
	High	Low	High	Low
First Quarter	\$17.06	\$11.91	\$11.45	\$3.52
Second Quarter	\$13.83	\$11.05	\$14.06	\$8.76
Third Quarter	\$15.75	\$11.71	\$13.59	\$9.43
Fourth Quarter	\$19.45	\$13.22	\$16.42	\$9.24

At January 31, 2018, there were 13,413 holders of record of our common stock.

## Common Stock Dividends

In December 2015, the FCX Board of Directors (the Board) suspended the annual common stock dividend. Accordingly, there were no common stock dividends paid in 2017 or 2016. In February 2018, the Board reinstated a cash dividend on our common stock. The Board intends to declare a quarterly dividend of \$0.05 per share, with the initial dividend expected to be paid May 1, 2018. The declaration of dividends is at the discretion of our Board and will depend upon our financial results, cash requirements, future prospects and other factors deemed relevant.

## Issuer Purchases of Equity Securities

The following table sets forth information with respect to shares of FCX common stock purchased by us during the three months ended December 31, 2017:

Period	(a) Total Number of Shares Purchased	(b) Average Price Paid Per Share	(c) Total Number of Shares Purchased as Part of Publicly Announced Plans or Programs <sup>a</sup>	(d) Maximum Number of Shares That May Yet Be Purchased Under the Plans or Programs <sup>a</sup>
October 1-31, 2017	—	\$	—	23,685,500
November 1-30, 2017	—	—	—	23,685,500
December 1-31, 2017	—	—	—	23,685,500
Total	—	—	—	23,685,500

a.

On July 21, 2008, the Board approved an increase in our open-market share purchase program for up to 30 million shares. The program does not have an expiration date.

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## Item 6. Selected Financial Data.

## FREEPORT-McMoRan INC.

## SELECTED FINANCIAL AND OPERATING DATA

	Years Ended December 31,				
	2017	2016 <sup>a</sup>	2015	2014	2013 <sup>a</sup>
<b>CONSOLIDATED FINANCIAL DATA</b>	(In millions, except per share amounts)				
Revenues	\$16,403	\$14,830 <sup>b</sup>	\$14,607 <sup>b</sup>	\$20,001 <sup>b</sup>	\$19,331 <sup>b</sup>
Operating income (loss) <sup>c</sup>	\$3,633 <sup>d</sup>	\$(2,792) <sup>e</sup>	\$(13,512) <sup>f</sup>	\$(298) <sup>g</sup>	\$4,820 <sup>h</sup>
Net income (loss) from continuing operations	\$2,029 <sup>i,j,k</sup>	\$(3,832) <sup>j,k</sup>	\$(12,180) <sup>l</sup>	\$(1,022) <sup>j,k</sup>	\$3,053 <sup>j,k,m</sup>
Net income (loss) from discontinued operations <sup>n</sup>	\$66	\$(193) <sup>o</sup>	\$91	\$277	\$388
Net income (loss) attributable to common stock	\$1,817	\$(4,154) <sup>o</sup>	\$(12,236)	\$(1,308)	\$2,658
Basic net income (loss) per share attributable to common stock:					
Continuing operations	\$1.21	\$(2.96) <sup>o</sup>	\$(11.32) <sup>o</sup>	\$(1.37) <sup>o</sup>	\$2.45
Discontinued operations	0.04	(0.20) <sup>o</sup>	0.01	0.11	0.20
	\$1.25	\$(3.16) <sup>o</sup>	\$(11.31) <sup>o</sup>	\$(1.26) <sup>o</sup>	\$2.65
Basic weighted-average common shares outstanding	1,447	1,318	1,082	1,039	1,002
Diluted net income (loss) per share attributable to common stock:					
Continuing operations	\$1.21	\$(2.96) <sup>o</sup>	\$(11.32) <sup>o</sup>	\$(1.37) <sup>o</sup>	\$2.44
Discontinued operations	0.04	(0.20) <sup>o</sup>	0.01	0.11	0.20
	\$1.25	\$(3.16) <sup>o</sup>	\$(11.31) <sup>o</sup>	\$(1.26) <sup>o</sup>	\$2.64
Diluted weighted-average common shares outstanding	1,454	1,318	1,082	1,039	1,006
Dividends declared per share of common stock	\$—	\$—	\$0.2605	\$1.25	\$2.25
Operating cash flows	\$4,682	\$3,729	\$3,220	\$5,631	\$6,139
Capital expenditures	\$1,410	\$2,813	\$6,353	\$7,215	\$5,286
At December 31:					
Cash and cash equivalents	\$4,447	\$4,245	\$177	\$298	\$1,864
Property, plant, equipment and mine development costs, net	\$22,836	\$23,219	\$23,986	\$22,649	\$20,401
Oil and gas properties, net	\$8	\$74	\$7,093	\$19,274	\$23,359
Assets held for sale, including current portion <sup>p</sup>	\$598	\$344	\$5,306	\$5,339	\$5,128
Total assets	\$37,302	\$37,317	\$46,577	\$58,674	\$63,385
Total debt, including current portion	\$13,117	\$16,027	\$20,324	\$18,741	\$20,476
Redeemable noncontrolling interest	\$—	\$—	\$764	\$751	\$716
Total stockholders' equity	\$7,977	\$6,051	\$7,828	\$18,287	\$20,934

The selected consolidated financial data shown above is derived from our audited consolidated financial statements. These historical results are not necessarily indicative of results that you can expect for any future period. You should read this data in conjunction with Items 7. and 7A. Management's Discussion and Analysis of Financial Condition and Results of Operations and Quantitative and Qualitative Disclosures about Market Risks (MD&A) and Item 8. Financial Statements and Supplementary Data thereto contained in our annual report on Form 10-K for the year ended December 31, 2017. All references to income or losses per share are on a diluted basis, unless otherwise noted.

In 2016 we sold substantially all of our oil and gas properties. The year 2013 includes the results of oil and gas operations beginning June 1, 2013.

b. Includes net noncash mark-to-market (losses) gains associated with crude oil and natural gas derivative contracts totaling \$(41) million (\$41) million to net loss attributable to common stock or \$(0.03) per share) in 2016, \$(319) million (\$198) million to net loss attributable to common stock or \$(0.18) per share) in 2015, \$627 million (\$389 million to net loss attributable to common stock or \$0.37 per share) in 2014 and \$(312) million (\$194) million to



net income attributable to common stock or \$(0.19) per share) for the seven-month period from June 1, 2013, to December 31, 2013.

c. Includes net charges (credits) for adjustments to environmental obligations and related litigation reserves of \$210 million (\$210 million to net income attributable to common stock or \$0.14 per share) in 2017, \$(16) million (\$(16) million to net loss attributable to common stock or \$(0.01) per share) in 2016, \$43 million (\$28 million to net loss attributable to common stock or \$0.03 per share) in 2015, \$76 million (\$50 million to net loss attributable to common stock or \$0.05 per share) in 2014 and \$19 million (\$17 million to net income attributable to common stock or \$0.02 per share) in 2013.

d. Includes net charges (credits) totaling \$57 million to operating income (\$(1) million to net income attributable to common stock or less than \$0.01 per share) consisting of charges totaling \$125 million for workforce reductions at PT Freeport Indonesia (PT-FI) and \$26 million at mining operations primarily for asset impairments and metals inventory adjustments, partly offset by net gains on

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sales of assets totaling \$81 million primarily associated with oil and gas transactions and net credits of \$13 million at oil and gas operations mostly associated with drillship settlement.

Includes net charges totaling \$4.9 billion to operating loss (\$4.8 billion to net loss attributable to common stock or \$3.67 per share) consisting of (i) \$4.3 billion for impairment of oil and gas properties, (ii) \$926 million for drillship settlements/idle rig and contract termination costs, (iii) \$196 million for other charges at oil and gas operations e. primarily associated with inventory adjustments, asset impairment and other restructuring charges and (iv) \$69 million for charges at mining operations for metals inventory adjustments, PT-FI asset retirement and Cerro Verde social commitments, partly offset by (v) net gains on sales of assets totaling \$649 million mostly associated with the Morenci and Timok transactions, partly offset by estimated losses associated with assets held for sale.

Includes net charges totaling \$13.8 billion to operating loss (\$12.0 billion to net loss attributable to common stock or \$11.10 per share) consisting of (i) \$13.1 billion for impairment of oil and gas properties, (ii) \$338 million for metals inventory adjustments, (iii) \$188 million for charges at oil and gas operations primarily associated with other asset f. impairment and inventory adjustments, idle/terminated rig costs and prior year mineral tax assessments related to the California properties, (iv) \$145 million for charges at mining operations primarily associated with asset impairment, restructuring and other net charges and (v) \$18 million for executive retirement benefits, partly offset by (vi) a net gain of \$39 million for the sale of our interest in the Luna Energy power facility.

Includes net charges totaling \$4.8 billion to operating loss (\$3.6 billion to net loss attributable to common stock or \$3.46 per share) consisting of (i) \$3.7 billion for impairment of oil and gas properties, (ii) \$1.7 billion to impair the full carrying value of goodwill, (iii) \$46 million for charges at oil and gas operations primarily associated with g. idle/terminated rig costs and inventory adjustments and (iv) \$6 million for adjustments to molybdenum inventories, partly offset by (v) net gains on sales of assets of \$717 million primarily from the sale of our 80 percent interests in the Candelaria and Ojos del Salado mining operations.

Includes net charges totaling \$232 million to operating income (\$137 million to net income attributable to common stock or \$0.14 per share) consisting of (i) \$80 million for transaction and related costs principally associated with oil and gas acquisitions, (ii) \$76 million associated with updated mine plans at Morenci that resulted in a loss in h. recoverable leach stockpiles, (iii) \$37 million for restructuring an executive employment arrangement, (iv) \$36 million associated with a labor agreement at Cerro Verde and (v) \$3 million for adjustments to molybdenum inventories.

Includes net charges at Cerro Verde related to (i) Peruvian government claims for disputed royalties for prior years totaling \$186 million to net income attributable to common stock or \$0.13 per share (consisting of \$203 million to operating income, \$145 million to interest expense and \$7 million to provision for income taxes, net of \$169 million i. to noncontrolling interests) and (ii) other tax related matters for prior years totaling \$14 million to net income attributable to common stock or \$0.01 per share (consisting of \$11 million to operating income, \$8 million to interest expense, \$1 million to other income and \$7 million to provision for income taxes, net of \$13 million to noncontrolling interests).

Includes after-tax net gains (losses) on early extinguishment and exchanges of debt totaling \$21 million (\$0.01 per j. share) in 2017, \$26 million (\$0.02 per share) in 2016, \$3 million (less than \$0.01 per share) in 2014 and \$(28) million (\$0.03 per share) in 2013.

As further discussed in "Consolidated Results - Income Taxes" contained in MD&A, amounts include net tax credits (charges) of \$438 million (\$0.30 per share) in 2017, \$370 million (\$374 million, net of noncontrolling interests or k. \$0.28 per share) in 2016 and \$(121) million (\$103) million, net of noncontrolling interests or \$(0.10) per share) in 2014. In addition, the year 2013 includes a net tax benefit of \$199 million (\$0.20 per share) for reductions in our valuation allowances resulting from the oil and gas acquisitions.

Includes a gain of \$92 million (\$92 million to net loss attributable to common stock or \$0.09 per share) related to net l. proceeds received from insurance carriers and other third parties related to the shareholder derivative litigation settlement.

m. Includes a gain of \$128 million (\$0.13 per share) related to our preferred stock investments in and the subsequent acquisition of McMoRan Exploration Co.

n.

Discontinued operations reflects the results of TF Holdings Limited (TFHL), through which we held an interest in the Tenke Fungurume (Tenke) mine until it was sold on November 16, 2016, and includes charges for allocated interest expense associated with the portion of the term loan that was required to be repaid as a result of the sale. Net income from discontinued operations in 2017 primarily reflects adjustments to the fair value of the potential \$120 million contingent consideration related to the November 2016 sale, which totaled \$74 million at December 31, 2017, and will continue to be adjusted through December 31, 2019. Also includes a net charge of \$198 million for the loss on disposal in 2016.

o. Includes a gain on redemption of a redeemable noncontrolling interest of \$199 million (\$0.15 per share) associated with the settlement of a preferred stock obligation at our Plains Offshore Operations Inc. subsidiary.

P. In accordance with accounting guidelines, the assets and liabilities of TFHL, Freeport Cobalt and the Kisanfu exploration project have been presented as held for sale in the consolidated balance sheets for all periods presented.

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## FREEPORT-McMoRan INC.

## SELECTED FINANCIAL AND OPERATING DATA (Continued)

	Years Ended December 31,				
	2017	2016	2015	2014	2013
<b>CONSOLIDATED MINING (CONTINUING OPERATIONS)<sup>a,b</sup></b>					
Copper (millions of recoverable pounds)					
Production	3,737	4,222	3,568	3,457	3,669
Sales, excluding purchases	3,700	4,227	3,603	3,463	3,632
Average realized price per pound	\$2.93	\$2.28	\$2.42	\$3.09	\$3.32
Gold (thousands of recoverable ounces)					
Production	1,577	1,088	1,257	1,214	1,250
Sales, excluding purchases	1,562	1,079	1,247	1,248	1,204
Average realized price per ounce	\$1,268	\$1,238	\$1,129	\$1,231	\$1,315
Molybdenum (millions of recoverable pounds)					
Production	92	80	92	95	94
Sales, excluding purchases	95	74	89	95	93
Average realized price per pound	\$9.33	\$8.33	\$8.70	\$12.74	\$11.85
<b>NORTH AMERICA COPPER MINES</b>					
Operating Data, Net of Joint Venture Interests					
Copper (millions of recoverable pounds)					
Production	1,518	1,831	1,947	1,670	1,431
Sales, excluding purchases	1,484	1,841	1,988	1,664	1,422
Average realized price per pound	\$2.85	\$2.24	\$2.47	\$3.13	\$3.36
Molybdenum (millions of recoverable pounds)					
Production	33	33	37	33	32
100% Operating Data					
Solution extraction/electrowinning (SX/EW) operations					
Leach ore placed in stockpiles (metric tons per day)	679,000	737,400	913,000	1,011,500	1,009,200
Average copper ore grade (percent)	0.28	0.31	0.26	0.25	0.22
Copper production (millions of recoverable pounds)	1,121	1,224	1,134	963	889
Mill operations					
Ore milled (metric tons per day)	299,500	300,500	312,100	273,800	246,500
Average ore grade (percent):					
Copper	0.39	0.47	0.49	0.45	0.39
Molybdenum	0.03	0.03	0.03	0.03	0.03
Copper recovery rate (percent)	86.4	85.5	85.4	85.8	85.3
Copper production (millions of recoverable pounds)	683	854	972	828	642
<b>SOUTH AMERICA MINING<sup>b</sup></b>					
Copper (millions of recoverable pounds)					
Production	1,235	1,328	869	1,151	1,323
Sales	1,235	1,332	871	1,135	1,325
Average realized price per pound	\$2.97	\$2.31	\$2.38	\$3.08	\$3.30
Molybdenum (millions of recoverable pounds)					
Production	27	21	7	11	13
SX/EW operations					
Leach ore placed in stockpiles (metric tons per day)	142,800	149,100	208,400	246,400	275,900
Average copper ore grade (percent)	0.37	0.41	0.44	0.48	0.50

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Copper production (millions of recoverable pounds)	255	328	430	491	448
Mill operations					
Ore milled (metric tons per day)	360,100	353,400	152,100	180,500	192,600
Average ore grade:					
Copper (percent)	0.44	0.43	0.46	0.54	0.65
Molybdenum (percent)	0.02	0.02	0.02	0.02	0.02
Copper recovery rate (percent)	81.2	85.8	81.5	88.1	90.9
Copper production (millions of recoverable pounds)	980	1,000	439	660	875

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## FREEPORT-McMoRan INC.

## SELECTED FINANCIAL AND OPERATING DATA (Continued)

	Years Ended December 31,				
	2017	2016	2015	2014	2013
<b>INDONESIA MINING</b>					
Operating Data, Net of Joint Venture Interest					
Copper (millions of recoverable pounds)					
Production	984	1,063	752	636	915
Sales	981	1,054	744	664	885
Average realized price per pound	\$3.00	\$2.32	\$2.33	\$3.01	\$3.58
Gold (thousands of recoverable ounces)					
Production	1,554	1,061	1,232	1,130	1,142
Sales	1,540	1,054	1,224	1,168	1,096
Average realized price per ounce	\$1,268	\$1,237	\$1,129	\$1,229	\$1,312
100% Operating Data					
Ore milled (metric tons per day)	140,400	165,700	162,500	120,500	179,200
Average ore grade:					
Copper (percent)	1.01	0.91	0.67	0.79	0.76
Gold (grams per metric ton)	1.15	0.68	0.79	0.99	0.69
Recovery rates (percent):					
Copper	91.6	91.0	90.4	90.3	90.0
Gold	85.0	82.2	83.4	83.2	80.0
Production:					
Copper (millions of recoverable pounds)	996	1,063	752	651	928
Gold (thousands of recoverable ounces)	1,554	1,061	1,232	1,132	1,142
<b>MOLYBDENUM MINES</b>					
Molybdenum production (millions of recoverable pounds)	32	26	48	51	49
Ore milled (metric tons per day)	22,500	18,300	34,800	39,400	35,700
Average molybdenum ore grade (percent)	0.20	0.21	0.20	0.19	0.19
<b>OIL AND GAS OPERATIONS<sup>c</sup></b>					
Sales Volumes:					
Oil (million barrels)	1.8	34.4	35.3	40.1	26.6
Natural gas (billion cubic feet)	15.8	65.1	89.7	80.8	54.2
Natural gas liquids (NGLs) (million barrels)	0.2	1.8	2.4	3.2	2.4
Million barrels of oil equivalents	4.6	47.1	52.6	56.8	38.1
Average Realizations:					
Oil (per barrel)	\$40.71	\$39.13	\$57.11	\$90.00	98.32
Natural gas (per million British thermal units)	\$3.18	\$2.38	\$2.59	\$4.23	3.99
NGLs (per barrel)	\$30.65	\$18.11	\$18.90	\$39.73	38.20
<b>AFRICA MINING (DISCONTINUED OPERATIONS)<sup>d</sup></b>					
Copper (millions of recoverable pounds)					
Production	—	425	449	447	462
Sales	—	424	467	425	454
Average realized price per pound	—	\$2.10	\$2.42	\$3.06	\$3.21
Cobalt (millions of contained pounds)					
Production	—	32	35	29	28

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Sales	—	33	35	30	25
Average realized price per pound	—	\$ 7.45	\$ 8.21	\$ 9.66	\$ 8.02
Ore milled (metric tons per day)	—	15,200	14,900	14,700	14,900
Average ore grade (percent):					
Copper	—	4.18	4.00	4.06	4.22
Cobalt	—	0.44	0.43	0.34	0.37
Copper recovery rate (percent)	—	93.6	94.0	92.6	91.4

a. Excludes the results from Africa mining, which is reported as discontinued operations.

b. Includes the results of the Candelaria and Ojos del Salado mines prior to their sale in November 2014.

Represents the results of our oil and gas operations beginning June 1, 2013. In June 2014, we completed the sale of the Eagle Ford shale assets, in July 2016, we completed the sale of the Haynesville shale assets and in December 2016, we completed the sales of the Deepwater Gulf of Mexico and onshore California oil and gas properties. In March 2017, we completed the sale of property interests in the Madden area and in July 2017, we completed the sale of certain property interests in the Gulf of Mexico Shelf.

d. On November 16, 2016, we completed the sale of our interest in TFHL, through which we held an interest in the Tenke mine.

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## Ratio of Earnings to Fixed Charges

For the ratio of earnings to fixed charges calculation, earnings consist of income (loss) from continuing operations before income taxes, noncontrolling interests in consolidated subsidiaries, equity in affiliated companies' net earnings (losses), cumulative effect of accounting changes and fixed charges. Fixed charges include interest and that portion of rent deemed representative of interest. The ratio of earnings to fixed charges and preferred stock dividends is the same as the ratio of earnings to fixed charges for the years presented because no shares of FCX preferred stock were outstanding during these years. Our ratio of earnings to fixed charges was as follows for the years presented:

Years Ended December 31,  
2017 2016 2015 2014 2013

Ratio of earnings to fixed charges 4.1x —<sup>a</sup> —<sup>a</sup> —<sup>a</sup> 6.8x

As a result of the losses recorded in 2016, 2015 and 2014, the ratio coverage was less than 1:1. To achieve coverage a. of 1:1, FCX would have needed to generate additional earnings of \$3.5 billion in 2016, \$14.3 billion in 2015 and \$1.0 billion in 2014.

## Items 7. and 7A. Management's Discussion and Analysis of Financial Condition and Results of Operations and Quantitative and Qualitative Disclosures About Market Risk.

In Management's Discussion and Analysis of Financial Condition and Results of Operations and Quantitative and Qualitative Disclosures About Market Risk (MD&A), "we," "us" and "our" refer to Freeport-McMoRan Inc. (FCX) and its consolidated subsidiaries. The results of operations reported and summarized below are not necessarily indicative of future operating results (refer to "Cautionary Statement" for further discussion). References to "Notes" are Notes included in our Notes to Consolidated Financial Statements. Throughout MD&A, all references to earnings or losses per share are on a diluted basis, unless otherwise noted. Additionally, in accordance with accounting guidelines, TF Holdings Limited (TFHL), through which we held a controlling interest in the Tenke Fungurume (Tenke) mine until it was sold on November 16, 2016, is reported as a discontinued operation for all periods presented.

## OVERVIEW

We are a leading international mining company with headquarters in Phoenix, Arizona. We operate large, long-lived, geographically diverse assets with significant proven and probable reserves of copper, gold and molybdenum. We are the world's largest publicly traded copper producer. Our portfolio of assets includes the Grasberg minerals district in Indonesia, one of the world's largest copper and gold deposits; and significant mining operations in the Americas, including the large-scale Morenci minerals district in North America and the Cerro Verde operation in South America.

We have taken actions to restore our balance sheet strength through a combination of asset sale transactions and capital market transactions. We completed approximately \$6.7 billion in asset sale transactions (mostly in 2016), including the sale of substantially all of our oil and gas properties, our interest in TFHL and the sale of an additional 13 percent undivided interest in the Morenci minerals district (refer to Note 2 for further discussion of dispositions). During 2016, we also completed a registered at-the-market offering of our common stock, which generated \$1.5 billion in gross proceeds through the sale of 116.5 million shares of our common stock, and redeemed \$369 million in senior notes for 27.7 million shares of our common stock (refer to Note 10 for further discussion). Additionally, in 2016, we settled \$1.1 billion in aggregate drillship contracts for \$755 million, of which \$540 million was funded with 48.1 million shares of our common stock (refer to Notes 10 and 13 for further discussion).

These actions, combined with cash flow from operations, resulted in net reductions of debt totaling \$2.9 billion during 2017 and \$4.3 billion during 2016 and an increase in consolidated cash from \$177 million at December 31, 2015, to \$4.2 billion at December 31, 2016, and \$4.4 billion at December 31, 2017. We continue to manage costs and capital spending and, subject to commodity prices and operational results, expect to generate significant operating cash flows



for further debt reduction during 2018.

Net income (loss) attributable to common stock totaled \$1.8 billion in 2017, \$(4.2) billion in 2016 and \$(12.2) billion in 2015. Our results in 2017 benefited from higher copper prices and higher gold sales volumes. Our prior years' results were unfavorably impacted by charges for the impairment of oil and gas properties totaling \$4.3 billion in 2016 and \$11.6 billion in 2015. Refer to "Consolidated Results" for discussion of items impacting our consolidated results for the three years ended December 31, 2017.

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At December 31, 2017, we had \$4.4 billion in consolidated cash and cash equivalents and \$13.1 billion in total debt. We had no borrowings and \$3.5 billion available under our revolving credit facility.

We believe that we have a high-quality portfolio of long-lived copper assets positioned to generate long-term value. We have commenced a project to develop the Lone Star oxide ores near the Safford operation in eastern Arizona. We are also pursuing other opportunities to enhance net present values, and we continue to advance studies for future development of our copper resources, the timing of which will be dependent on market conditions.

We have significant mineral reserves, resources and future development opportunities within our portfolio of mining assets. At December 31, 2017, our estimated consolidated recoverable proven and probable mineral reserves totaled 86.7 billion pounds of copper, 23.5 million ounces of gold and 2.84 billion pounds of molybdenum, which were determined using \$2.00 per pound for copper, \$1,000 per ounce for gold and \$10 per pound for molybdenum. Refer to “Critical Accounting Estimates – Mineral Reserves” for further discussion.

During 2017, production from our mines totaled 3.7 billion pounds of copper, 1.6 million ounces of gold and 92 million pounds of molybdenum. Following is a summary of the geographic locations of our consolidated copper, gold and molybdenum production in 2017:

	Copper		Gold		Molybdenum	
North America	41	%	1	%	71	% <sup>a</sup>
South America	33		—		29	
Indonesia	26		99		—	
	100	%	100	%	100	%

<sup>a</sup> Our Henderson and Climax molybdenum mines produced 35 percent of consolidated molybdenum production, and our North America copper mines produced 36 percent.

Copper production from the Grasberg mine in Indonesia, Morenci mine in North America and Cerro Verde mine in Peru together totaled 74 percent of our consolidated copper production in 2017.

As further discussed in Note 13 and “Operations – Indonesia Mining,” PT Freeport Indonesia (PT-FI) continues to actively engage with Indonesian government officials to address regulatory changes that conflict with its contractual rights in a manner that provides long-term stability for PT-FI’s operations and investment plans, and protects value for our shareholders. Following a framework understanding reached in August 2017, the parties have been engaged in negotiation and documentation of a special license (IUPK) and accompanying documentation for assurances on legal and fiscal terms to provide PT-FI with long-term rights through 2041. In addition, the IUPK would provide that PT-FI construct a smelter within five years of reaching a definitive agreement and include agreement for the divestment of 51 percent of the project area interests to Indonesian participants at fair market value. The parties continue to negotiate documentation on a comprehensive agreement for PT-FI’s extended operations and to reach agreement on timing, process and governance matters relating to the divestment. The parties have a mutual objective of completing negotiations and the required documentation during the first half of 2018.

**OUTLOOK**

We continue to view the long-term outlook for our business positively, supported by limitations on supplies of copper and by the requirements for copper in the world’s economy. Our financial results vary as a result of fluctuations in market prices primarily for copper, gold and molybdenum, as well as other factors. World market prices for these commodities have fluctuated historically and are affected by numerous factors beyond our control. Because we cannot control the price of our products, the key measures that management focuses on in operating our business are sales volumes, unit net cash costs, operating cash flow and capital expenditures.

Refer to “Operations – Indonesia Mining” for further discussion of Indonesia regulatory matters, which could have a significant impact on future results.

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## Sales Volumes

Following are projected consolidated sales volumes for 2018 and actual consolidated sales volumes from continuing operations for 2017:

	2018 (Projected)	2017 (Actual)
Copper (millions of recoverable pounds):		
North America copper mines	1,495	1,484
South America mining	1,235	1,235
Indonesia mining	1,200	981
Total	3,930	3,700
Gold (thousands of recoverable ounces)	2,440	1,562
Molybdenum (millions of recoverable pounds)	91	<sup>a</sup> 95

Projected molybdenum sales include 35 million pounds produced by our Molybdenum mines and 56 million pounds<sup>a</sup> produced by our North America and South America copper mines.

Consolidated sales for first-quarter 2018 are expected to approximate 1.0 billion pounds of copper, 675 thousand ounces of gold and 24 million pounds of molybdenum. Projected sales volumes are dependent on operational performance and other factors. For other important factors that could cause results to differ materially from projections, refer to “Cautionary Statement.”

## Unit Net Cash Costs

Assuming average prices of \$1,300 per ounce of gold and \$10.00 per pound of molybdenum for 2018 and achievement of current sales volume and cost estimates, consolidated unit net cash costs (net of by-product credits) for our copper mines are expected to average \$0.97 per pound of copper in 2018. The impact of price changes in 2018 on consolidated unit net cash costs would approximate \$0.03 per pound for each \$50 per ounce change in the average price of gold and \$0.025 per pound for each \$2 per pound change in the average price of molybdenum. Quarterly unit net cash costs vary with fluctuations in sales volumes and realized prices, primarily for gold and molybdenum. Refer to “Consolidated Results – Production and Delivery Costs” for further discussion of consolidated production costs for our mining operations.

## Consolidated Operating Cash Flow

Our consolidated operating cash flows vary with sales volumes, prices realized from copper, gold and molybdenum sales, production costs, income taxes, other working capital changes and other factors. Based on current sales volume and cost estimates, and assuming average prices of \$3.15 per pound of copper, \$1,300 per ounce of gold and \$10.00 per pound of molybdenum, our consolidated operating cash flows are estimated to exceed \$5.8 billion in 2018 (including \$0.3 billion in working capital sources and timing of other tax payments). Estimated consolidated operating cash flows in 2018 also reflect a projected income tax provision of \$2.2 billion (refer to “Consolidated Results - Income Taxes” for further discussion of our projected income tax rate for the year 2018). The impact of price changes in 2018 on consolidated operating cash flows would approximate \$360 million for each \$0.10 per pound change in the average price of copper, \$115 million for each \$50 per ounce change in the average price of gold and \$130 million for each \$2 per pound change in the average price of molybdenum.

## Consolidated Capital Expenditures

Consolidated capital expenditures are expected to approximate \$2.1 billion in 2018, including \$1.2 billion for major mining projects, primarily associated with underground development activities in the Grasberg minerals district and development of the Lone Star oxide project. If PT-FI is unable to reach a definitive agreement with the Indonesian government on its long-term mining rights, we intend to reduce or defer investments significantly in underground development projects and will pursue dispute resolution procedures under PT-FI’s Contract of Work (COW).



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MARKETS

World prices for copper, gold and molybdenum can fluctuate significantly. During the period from January 2008 through December 2017, the London Metal Exchange (LME) spot copper price varied from a low of \$1.26 per pound in 2008 to a record high of \$4.60 per pound in 2011; the London Bullion Market Association (London) PM gold price fluctuated from a low of \$713 per ounce in 2008 to a record high of \$1,895 per ounce in 2011, and the Metals Week Molybdenum Dealer Oxide weekly average price ranged from a low of \$4.46 per pound in 2015 to a high of \$33.88 per pound in 2008. Copper, gold and molybdenum prices are affected by numerous factors beyond our control as described further in our “Risk Factors” contained in Part I, Item 1A. of our annual report on Form 10-K for the year ended December 31, 2017.

This graph presents LME spot copper prices and combined reported stocks of copper at the LME, Commodity Exchange Inc., a division of the New York Mercantile Exchange (NYMEX), and the Shanghai Futures Exchange from January 2008 through December 2017. Beginning in mid-2014, copper prices declined because of concerns about slowing growth rates in China, a stronger United States (U.S.) dollar and a broad-based decline in commodity prices, but began to improve in fourth-quarter 2016 and throughout 2017. For the year 2017, LME spot copper prices ranged from a low of \$2.48 per pound to a high of \$3.27 per pound, averaged \$2.80 per pound and closed at \$3.25 per pound on December 31, 2017. The LME spot copper price was \$3.22 per pound on January 31, 2018.

We believe the underlying long-term fundamentals of the copper business remain positive, supported by the significant role of copper in the global economy and a challenging long-term supply environment attributable to difficulty in replacing existing large mines’ output with new production sources. Future copper prices are expected to be volatile and are likely to be influenced by demand from China and emerging markets, as well as economic activity in the U.S. and other industrialized countries, the timing of the development of new supplies of copper and production levels of mines and copper smelters.

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This graph presents London PM gold prices from January 2008 through December 2017. An improving economic outlook, stronger U.S. dollar and positive equity performance contributed to lower demand for gold since 2014. During 2017, London PM gold prices ranged from a low of \$1,151 per ounce to a high of \$1,346 per ounce, averaged \$1,257 per ounce and closed at \$1,297 per ounce on December 31, 2017. The London PM gold price was \$1,345 per ounce on January 31, 2018.

This graph presents the Metals Week Molybdenum Dealer Oxide weekly average price from January 2008 through December 2017. Molybdenum prices have declined since mid-2014 because of weaker demand from global steel and stainless steel producers but have improved beginning in mid-2016. During 2017, the weekly average price for molybdenum ranged from a low of \$6.98 per pound to a high of \$10.15 per pound, averaged \$8.21 per pound and was \$10.15 per pound on December 31, 2017. The Metals Week Molybdenum Dealer Oxide weekly average price was \$11.87 per pound on January 31, 2018.

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## CRITICAL ACCOUNTING ESTIMATES

MD&A is based on our consolidated financial statements, which have been prepared in conformity with generally accepted accounting principles (GAAP) in the U.S. The preparation of these statements requires that we make estimates and assumptions that affect the reported amounts of assets, liabilities, revenues and expenses. We base these estimates on historical experience and on assumptions that we consider reasonable under the circumstances; however, reported results could differ from those based on the current estimates under different assumptions or conditions. The areas requiring the use of management's estimates are also discussed in Note 1 under the subheading "Use of Estimates." Management has reviewed the following discussion of its development and selection of critical accounting estimates with the Audit Committee of our Board of Directors (the Board).

## Mineral Reserves

Recoverable proven and probable reserves are the part of a mineral deposit that can be economically and legally extracted or produced at the time of the reserve determination. The determination of reserves involves numerous uncertainties with respect to the ultimate geology of the ore bodies, including quantities, grades and recovery rates. Estimating the quantity and grade of mineral reserves requires us to determine the size, shape and depth of our ore bodies by analyzing geological data, such as samplings of drill holes, tunnels and other underground workings. In addition to the geology of our mines, assumptions are required to determine the economic feasibility of mining these reserves, including estimates of future commodity prices and demand, the mining methods we use and the related costs incurred to develop and mine our reserves. Our estimates of recoverable proven and probable mineral reserves are prepared by and are the responsibility of our employees. A majority of these estimates are reviewed annually and verified by independent experts in mining, geology and reserve determination.

At December 31, 2017, our consolidated estimated recoverable proven and probable reserves were determined using \$2.00 per pound for copper, \$1,000 per ounce for gold and \$10 per pound for molybdenum. The following table summarizes changes in our estimated consolidated recoverable proven and probable copper, gold and molybdenum reserves during 2017 and 2016:

	Copper <sup>a</sup> (billion pounds)	Gold (million ounces)	Molybdenum (billion pounds)
Consolidated reserves at December 31, 2015	99.5	27.1	3.05
Net additions	0.5	0.1	—
Production	(4.6 )	(1.1 )	(0.08 )
Sale of interest in Tenke	(6.8 )	—	—
Sale of 13 percent interest in Morenci	(1.8 )	—	(0.02 )
Consolidated reserves at December 31, 2016	86.8	26.1	2.95
Net additions (revisions)	3.6	<sup>b</sup> (1.0 )	(0.02 )
Production	(3.7 )	(1.6 )	(0.09 )
Consolidated reserves at December 31, 2017	86.7	23.5	2.84

<sup>a</sup> Includes estimated recoverable metals contained in stockpiles. See below for additional discussion of recoverable copper in stockpiles.

<sup>b</sup> Includes 4.4 billion pounds associated with the Lone Star project located near the Safford mine.

Refer to Note 20 for further information regarding estimated recoverable proven and probable mineral reserves.

As discussed in Note 1, we depreciate our life-of-mine mining and milling assets and values assigned to proven and probable mineral reserves using the unit-of-production (UOP) method based on our estimated recoverable proven and probable mineral reserves. Because the economic assumptions used to estimate mineral reserves may change from



period to period and additional geological data is generated during the course of operations, estimates of reserves may change, which could have a significant impact on our results of operations, including changes to prospective depreciation rates and impairments of long-lived asset carrying values. Excluding impacts associated with changes in the levels of finished goods inventories and based on projected copper sales volumes, if estimated copper reserves at our mines were 10 percent higher at December 31, 2017, we estimate that our annual depreciation, depletion and amortization (DD&A) expense for 2018 would decrease by \$45 million (\$24 million to net income attributable to common stockholders), and a 10 percent decrease in copper reserves would increase DD&A expense by \$55 million (\$29 million to net income attributable to common stockholders). We perform annual assessments of our existing assets in connection with the review of mine operating and development plans. If it is

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determined that assigned asset lives do not reflect the expected remaining period of benefit, any change could affect prospective DD&A rates.

As discussed below and in Note 1, we review and evaluate our long-lived assets for impairment when events or changes in circumstances indicate that the related carrying amount of such assets may not be recoverable, and changes to our estimates of recoverable proven and probable mineral reserves could have an impact on our assessment of asset recoverability. Refer to “Risk Factors” contained in Part I, Item 1A. of our annual report on Form 10-K for the year ended December 31, 2017, for further discussion of Indonesian regulatory matters that could have a material adverse affect on our cash flow, results of operations and financial position, and could result in asset impairments at PT-FI.

### Recoverable Copper in Stockpiles

We record, as inventory, applicable costs for copper contained in mill and leach stockpiles that are expected to be processed in the future based on proven processing technologies. Mill and leach stockpiles are evaluated periodically to ensure that they are stated at the lower of weighted-average cost or net realizable value (refer to Note 4 and “Consolidated Results” for further discussion of inventory adjustments recorded for the three years ended December 31, 2017). Accounting for recoverable copper from mill and leach stockpiles represents a critical accounting estimate because (i) it is impracticable to determine copper contained in mill and leach stockpiles by physical count, thus requiring management to employ reasonable estimation methods and (ii) recovery rates from leach stockpiles can vary significantly. Refer to Note 1 for further discussion of our accounting policy for recoverable copper in stockpiles.

At December 31, 2017, estimated consolidated recoverable copper was 2.1 billion pounds in leach stockpiles (with a carrying value of \$2.2 billion) and 0.7 billion pounds in mill stockpiles (with a carrying value of \$660 million), compared with 2.2 billion pounds in leach stockpiles (with a carrying value of \$2.2 billion) and 1.0 billion pounds in mill stockpiles (with a carrying value of \$746 million) at December 31, 2016.

### Impairment of Long-Lived Assets

As discussed in Note 1, we assess the carrying values of our long-lived mining assets when events or changes in circumstances indicate that the related carrying amounts of such assets may not be recoverable. In evaluating our long-lived mining assets for recoverability, we use estimates of pre-tax undiscounted future cash flows of our individual mines. Estimates of future cash flows are derived from current business plans, which are developed using near-term metal price forecasts reflective of the current price environment and management’s projections for long-term average metal prices. In addition to near- and long-term metal price assumptions, other key assumptions include estimates of commodity-based and other input costs; proven and probable mineral reserves estimates, including the timing and cost to develop and produce the reserves; value beyond proven and probable mineral reserve estimates (refer to Note 1); and the use of appropriate discount rates in the measurement of fair value. We believe our estimates and models used to determine fair value are similar to what a market participant would use. As quoted market prices are unavailable for our individual mining operations, fair value is determined through the use of after-tax discounted estimated future cash flows.

As a result of declining copper and molybdenum prices, during the second half of 2015, we evaluated our long-lived mining assets for impairment, which resulted in charges of \$37 million at our Tyrone mine, net of a revision to asset retirement obligations (AROs). Refer to Note 5 for further discussion of price assumptions used in our December 31, 2015, evaluations of the recoverability of our copper and molybdenum mines. At December 31, 2016 and 2017, we concluded there were no events or changes in circumstances that would indicate that the carrying amount of our long-lived mining assets might not be recoverable.

In addition to decreases in future metal price assumptions, other events that could result in future impairment of our long-lived mining assets include, but are not limited to, decreases in estimated recoverable proven and probable mineral reserves and any event that might otherwise have a material adverse effect on mine site production levels or

costs. Refer to “Risk Factors” contained in Part I, Item 1A. of our annual report on Form 10-K for the year ended December 31, 2017, for further discussion of Indonesian regulatory matters that could have a material adverse affect on our cash flow, results of operations and financial position, and could result in asset impairments at PT-FI.

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### Environmental Obligations

Our current and historical operating activities are subject to various national, state and local environmental laws and regulations that govern the protection of the environment, and compliance with those laws requires significant expenditures. Environmental expenditures are charged to expense or capitalized, depending upon their future economic benefits. The guidance provided by U.S. GAAP requires that liabilities for contingencies be recorded when it is probable that obligations have been incurred, and the cost can be reasonably estimated. At December 31, 2017, environmental obligations recorded in our consolidated balance sheet totaled \$1.4 billion, which reflect obligations for environmental liabilities attributed to the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) or analogous state programs and for estimated future costs associated with environmental matters. Refer to Notes 1 and 12 for further discussion of environmental obligations, including a summary of changes in our estimated environmental obligations for the three years ended December 31, 2017.

Accounting for environmental obligations represents a critical accounting estimate because changes to environmental laws and regulations and/or circumstances affecting our operations could result in significant changes to our estimates, which could have a significant impact on our results of operations. We perform a comprehensive annual review of our environmental obligations and also review changes in facts and circumstances associated with these obligations at least quarterly. Judgments and estimates are based upon currently available facts, existing technology, presently enacted laws and regulations, remediation experience, whether or not we are a potentially responsible party (PRP), the ability of other PRPs to pay their allocated portions and take into consideration reasonably possible outcomes. Our cost estimates can change substantially as additional information becomes available regarding the nature or extent of site contamination, updated cost assumptions (including increases and decreases to cost estimates), changes in the anticipated scope and timing of remediation activities, the settlement of environmental matters, required remediation methods and actions by or against governmental agencies or private parties.

### Asset Retirement Obligations

We record the fair value of our estimated AROs associated with tangible long-lived assets in the period incurred. Fair value is measured as the present value of cash flow estimates after considering inflation and a market risk premium. Our cost estimates are reflected on a third-party cost basis and comply with our legal obligation to retire tangible long-lived assets in the period incurred. These cost estimates may differ from financial assurance cost estimates for reclamation activities because of a variety of factors, including obtaining updated cost estimates for reclamation activities, the timing of reclamation activities, changes in scope and the exclusion of certain costs not considered reclamation and closure costs. At December 31, 2017, AROs recorded in our consolidated balance sheet totaled \$2.6 billion, including \$0.6 billion associated with our remaining oil and gas operations. Refer to Notes 1 and 12 for further discussion of reclamation and closure costs, including a summary of changes in our AROs for the three years ended December 31, 2017.

Generally, ARO activities are specified by regulations or in permits issued by the relevant governing authority, and management judgment is required to estimate the extent and timing of expenditures. Accounting for AROs represents a critical accounting estimate because (i) we will not incur most of these costs for a number of years, requiring us to make estimates over a long period, (ii) reclamation and closure laws and regulations could change in the future and/or circumstances affecting our operations could change, either of which could result in significant changes to our current plans, (iii) the methods used or required to plug and abandon non-producing oil and gas wellbores, remove platforms, tanks, production equipment and flow lines, and restore the wellsite could change, (iv) calculating the fair value of our AROs requires management to estimate projected cash flows, make long-term assumptions about inflation rates, determine our credit-adjusted, risk-free interest rates and determine market risk premiums that are appropriate for our operations and (v) given the magnitude of our estimated reclamation, mine closure and wellsite abandonment and restoration costs, changes in any or all of these estimates could have a significant impact on our results of operations.

### Taxes

In preparing our annual consolidated financial statements, we estimate the actual amount of income taxes currently payable or receivable as well as deferred income tax assets and liabilities attributable to temporary differences between the financial statement carrying amounts of existing assets and liabilities and their respective tax bases. Deferred income tax assets and liabilities are measured using enacted tax rates expected to apply to taxable income in the years in which these temporary differences are expected to be recovered or settled. The effect on deferred income tax assets and liabilities of a change in tax rates or laws is recognized in income in the period in which such changes are enacted.

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Our operations are in multiple jurisdictions where uncertainties arise in the application of complex tax regulations. Some of these tax regimes are defined by contractual agreements with the local government, while others are defined by general tax laws and regulations. We and our subsidiaries are subject to reviews of our income tax filings and other tax payments, and disputes can arise with the taxing authorities over the interpretation of our contracts or laws. Final taxes paid may be dependent upon many factors, including negotiations with taxing authorities. In certain jurisdictions, we must pay a portion of the disputed amount to the local government in order to formally appeal an assessment. Such payment is recorded as a receivable if we believe the amount is collectible.

A valuation allowance is provided for those deferred income tax assets for which the weight of available evidence suggests that the related benefits will not be realized. In determining the amount of the valuation allowance, we consider estimated future taxable income or loss as well as feasible tax planning strategies in each jurisdiction. If we determine that we will not realize all or a portion of our deferred income tax assets, we will increase our valuation allowance. Conversely, if we determine that we will ultimately be able to realize all or a portion of the related benefits for which a valuation allowance has been provided, all or a portion of the related valuation allowance will be reduced.

Our valuation allowances totaled \$4.6 billion at December 31, 2017, which covered U.S. federal and state deferred tax assets, including all of our U.S. foreign tax credit carryforwards, U.S. federal net operating loss carryforwards, U.S. federal capital loss carryforwards, foreign net operating loss carryforwards, and substantially all of our U.S. state net operating loss carryforwards.

The Tax Cuts and Jobs Act (the Act) enacted on December 22, 2017, includes significant modifications to existing U.S. tax laws and creates many new complex tax provisions. The Act reduces the corporate income tax rate to 21 percent, eliminates the corporate alternative minimum tax (AMT), provides for a refund of AMT credit carryover, maintains hard minerals percentage depletion, allows for immediate expensing of certain qualified property and generally broadens the tax base. The Act also creates a territorial tax system (with a one-time mandatory tax on previously deferred foreign earnings), creates anti-base erosion rules that require companies to pay a minimum tax on foreign earnings and disallows certain payments from U.S. corporations to foreign related parties. Our income tax provision for 2017 includes provisional net tax credits associated with the Act totaling \$393 million, including the reversal of valuation allowances associated with anticipated refunds of AMT credits over the next four years (\$272 million, net of reserves) and a decrease in corporate income tax rates (\$121 million). Our income tax provision for 2017 was not impacted by the Act's one-time tax on deferred foreign earnings, as we have sufficient foreign tax credits to offset the tax. As the Act's tax provisions are numerous and complex, we continue to evaluate their impact. Refer to Note 11 for further discussion.

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CONSOLIDATED RESULTS

Years Ended December  
31,

2017      2016      2015

SUMMARY FINANCIAL DATA (in millions, except per  
share amounts)

Revenues<sup>a,b</sup>      \$16,403    \$14,830