CABOT CORP
Form 10-K
November 23, 2016

UNITED STATES SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

Form 10-K

ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934
For the fiscal year ended September 30, 2016

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 1-5667

Cabot Corporation

(Exact name of Registrant as specified in its charter)

Delaware	04-2271897
(State or other jurisdiction of incorporation or organization)	(I.R.S. Employer Identification No.)
Two Seaport Lane, Suite 1300 Boston, Massachusetts	02210
(Address of Principal Executive Offices)	(Zip Code)

(617) 345-0100

(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, $1.00 par value per share	New York Stock Exchange

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

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 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.

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 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 (Do not check if a smaller reporting company) Smaller reporting company

Indicate by check mark whether the Registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). Yes No

As of the last business day of the Registrant's most recently completed second fiscal quarter (March 31, 2016), the aggregate market value of the Registrant's common stock held by non-affiliates was $2,989,125,149. As of November 18, 2016, there were 62,332,802 shares of the Registrant's common stock outstanding.

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the Registrant's definitive proxy statement for its 2017 Annual Meeting of Shareholders are incorporated by reference into Part III of this annual report on Form 10-K.

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Information Relating to Forward-Looking Statements

This annual report on Form 10-K contains “forward-looking statements” under the Federal securities laws. These forward-looking statements include statements relating to our expectations regarding our future business performance and overall prospects; demand for our products; when we expect construction of the fumed silica plant in Wuhai, China by our new joint venture to be completed and when we expect to open our new Asia Technology Center in Shanghai, China; the sufficiency of our cash on hand, cash provided from operations and cash available under our credit and commercial paper facilities to fund our cash requirements; anticipated capital spending, including environmental-related capital expenditures; cash requirements and uses of available cash, including future cash outlays associated with long-term contractual obligations, restructurings, contributions to employee benefit plans, environmental remediation costs and future respirator liabilities; exposure to interest rate and foreign exchange risk; future benefit plan payments we expect to make; future amortization expenses; our expected tax rate for fiscal 2017; our ability to recover deferred tax assets; and the possible outcome of legal and environmental proceedings. From time to time, we also provide forward-looking statements in other materials we release to the public and in oral statements made by authorized officers.

Forward-looking statements are based on our current expectations, assumptions, estimates and projections about Cabot’s businesses and strategies, market trends and conditions, economic conditions and other factors. These statements are not guarantees of future performance and are subject to risks, uncertainties, potentially inaccurate assumptions, and other factors, some of which are beyond our control and difficult to predict. If known or unknown risks materialize, or should underlying assumptions prove inaccurate, our actual results could differ materially from past results and from those expressed in the forward-looking statements. Important factors that could cause our actual results to differ materially from those expressed in our forward-looking statements are described in Item 1A in this report.

We undertake no obligation to publicly update forward-looking statements, whether as a result of new information, future events or otherwise, except as required by law. Investors are advised, however, to consult any further disclosures we make on related subjects in our 10-Q and 8-K reports filed with the Securities and Exchange Commission (the “SEC”).

PART I

Item 1. Business

General

Cabot is a global specialty chemicals and performance materials company headquartered in Boston, Massachusetts. Our principal products are rubber and specialty grade carbon blacks, specialty compounds, fumed metal oxides, activated carbons, inkjet colorants, aerogel, and cesium formate drilling fluids. Cabot and its affiliates have manufacturing facilities and operations in the United States and over 20 other countries. Cabot’s business was founded in 1882 and incorporated in the State of Delaware in 1960. The terms “Cabot”, “Company”, “we”, and “our” as used in this report refer to Cabot Corporation and its consolidated subsidiaries.

Our vision is to be the most innovative, respected and responsible leader in our markets – delivering performance that makes a difference. Our strategy is to extend our leadership in performance materials by investing for growth in our core businesses, driving application innovation with our customers, and generating strong cash flows through efficiency and optimization. Our products are generally based on technical expertise and innovation in one or more of our four core competencies: making and handling very fine particles; modifying the surfaces of very fine particles to

alter their functionality; designing particles to impart specific properties to a formulation; and combining particles with other ingredients to deliver a formulated performance intermediate or composite. We focus on creating particles with the composition, morphology, and surface functionalities, and creating formulations of those particles, to deliver the requisite performance to support our customers' existing and emerging applications.

Our four business segments are: Reinforcement Materials; Performance Chemicals; Purification Solutions; and Specialty Fluids. The business segments are discussed in more detail later in this section. Financial information about our business segments appears in Management's Discussion and Analysis of Financial Condition and Results of Operations in Item 7 below ("MD&A") and in Note U of the Notes to our Consolidated Financial Statements in Item 8 below ("Note U").

Our internet address is www.cabotcorp.com. We make available free of charge on or through our website our annual reports on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K, and amendments to those reports filed or furnished pursuant to Section 13(a) or 15(d) of the Securities Exchange Act of 1934 as soon as reasonably practicable after electronically filing such material with, or furnishing it to, the SEC. Information appearing on our website is not a part of, and is not incorporated in, this Annual Report on Form 10-K.

Reinforcement Materials

Products

Carbon black is a form of elemental carbon that is manufactured in a highly controlled process to produce particles and aggregates of varied structure and surface chemistry, resulting in many different performance characteristics for a wide variety of applications. Rubber grade carbon blacks are used to enhance the physical properties of the systems and applications in which they are incorporated.

Our rubber blacks products are used in tires and industrial products. Rubber blacks have traditionally been used in the tire industry as a rubber reinforcing agent to increase tread durability and are also used as a performance additive to reduce rolling resistance and improve traction. In industrial products such as hoses, belts, extruded profiles and molded goods, rubber blacks are used to improve the physical performance of the product, including the product's physical strength, fluid resistance, conductivity and resistivity.

In addition to our rubber blacks products, we manufacture compounds of carbon black and rubber using our patented elastomer composites manufacturing process. These compounds improve abrasion/wear resistance, reduce fatigue and reduce rolling resistance compared to carbon black/rubber compounds made by conventional dry mix methods.

Sales and Customers

Sales of rubber blacks products are made by Cabot employees and through distributors and sales representatives. Sales to three major tire customers represent a material portion of Reinforcement Materials' total net sales and operating revenues. The loss of any of these customers, or a significant reduction in volumes sold to them, could have a material adverse effect on the Segment.

Under appropriate circumstances, we have entered into supply contracts with certain customers, the typical duration of which is one year. Many of these contracts provide for sales price adjustments to account for changes in relevant feedstock indices and, in some cases, changes in other relevant costs (such as the cost of natural gas). In fiscal 2016, approximately half of our rubber blacks volume was sold under these supply agreements. The majority of the volumes sold under these agreements are sold to customers in North America and Europe.

We have licensed our patented elastomer composites manufacturing process to Manufacture Francaise des Pneumatiques Michelin for their exclusive use in tire applications through fiscal 2017. As consideration, we receive quarterly royalty payments extending through calendar year 2022.

Much of the rubber blacks we sell is used in tires and automotive products and, therefore, our financial results may be affected by the cyclical nature of the automotive industry. However, a large portion of the market for our products is in replacement tires that historically have been less subject to automotive industry cycles.

Competition

We are one of the leading manufacturers of carbon black in the world. We compete in the manufacture of carbon black primarily with two companies with a global presence and numerous other companies that operate regionally, some of which export product outside their region. Competition for products within Reinforcement Materials is based on product performance, quality, reliability, price, service, technical innovation, and logistics. We believe our product differentiation, technological leadership, global manufacturing presence, operations and logistics excellence and customer service provide us with a competitive advantage.

Raw Materials

The principal raw material used in the manufacture of carbon black is a portion of the residual heavy oils derived from petroleum refining operations, the distillation of coal tars, and the production of ethylene throughout the world. Natural gas is also used in the production of carbon black. Raw materials are, in general, readily available and in adequate supply. Raw material costs generally are influenced by the availability of various types of carbon black feedstock and natural gas, supply and demand of such raw materials, and related transportation costs. Importantly, movements in the market price for crude oil typically affect carbon black feedstock costs.

Operations

We own, or have a controlling interest in, and operate plants that produce rubber blacks in Argentina, Brazil, Canada, China, Colombia, the Czech Republic, France, Indonesia, Italy, Japan, Mexico, The Netherlands and the United States. Our equity affiliate operates a carbon black plant in Venezuela.

The following table shows our ownership interest as of September 30, 2016 in rubber blacks operations in which we own less than 100%:

Location	Percentage Interest
Shanghai, China	70% (consolidated subsidiary)
Tianjin, China	70% (consolidated subsidiary)
Xingtai City, China	60% (consolidated subsidiary)
Valasske Mezirici (Valmez), Czech Republic	52% (consolidated subsidiary)
Cilegon, Indonesia	97% (consolidated subsidiary)
Valencia, Venezuela	49% (equity affiliate)

Performance Chemicals

Performance Chemicals is composed of two businesses: (i) our Specialty Carbons and Formulations business, which manufactures and sells specialty grades of carbon black, specialty compounds and inkjet colorants, and (ii) our Metal Oxides business, which manufactures and sells fumed silica, fumed alumina and dispersions thereof and aerogel. In Performance Chemicals, we design, manufacture and sell materials that deliver performance in a broad range of customer applications across the automotive, construction and infrastructure, energy, inkjet printing, electronics, and consumer products sectors.

Products

Specialty Carbons and Formulations Business

Carbon black is a form of elemental carbon that is manufactured in a highly controlled process to produce particles and aggregates of varied structure and surface chemistry, resulting in many different performance characteristics for a wide variety of applications.

Our specialty grades of carbon black are used to impart color, provide rheology control, enhance conductivity and static charge control, provide UV protection, enhance mechanical properties, and provide formulation flexibility through surface treatment. These specialty carbon products are used in a wide variety of applications, such as inks, coatings, plastics, adhesives, toners, batteries, and displays.

Our masterbatch and conductive compound products, which we refer to as “specialty compounds”, are formulations derived from specialty grades of carbon black mixed with polymers and other additives. These products are generally used by plastic resin producers and converters in applications for the automotive, industrial, packaging, consumer products, and electronics industries. As an alternative to directly mixing specialty carbon blacks, these formulations offer greater ease of handling and help customers achieve their desired levels of dispersion and color and manage the addition of small doses of additives. In addition, our electrically conductive compound products generally are used to reduce risks associated with electrostatic discharge in plastics applications.

Our inkjet colorants are high-quality pigment-based black and color dispersions based on our patented carbon black surface modification technology. The dispersions are used in aqueous inkjet inks to impart color, sharp print characteristics and durability, while maintaining high printhead reliability. These products are used in various inkjet printing applications, including commercial printing, small office/home office and corporate office, and niche applications that require a high level of dispersibility and colloidal stability. Our inkjet inks, which utilize our pigment-based colorant dispersions, are used in the commercial printing segment for digital print.

Metal Oxides Business

Fumed silica is an ultra-fine, high-purity particle used as a reinforcing, thickening, abrasive, thixotropic, suspending or anti-caking agent in a wide variety of products for the automotive, construction, microelectronics, batteries, and consumer products industries. These products include adhesives, sealants, cosmetics, inks, toners, silicone rubber, coatings, polishing slurries and pharmaceuticals. Fumed alumina, also an ultra-fine, high-purity particle, is used as an abrasive, absorbent or barrier agent in a variety of products, such as inkjet media, lighting, coatings, cosmetics and polishing slurries.

Aerogel is a hydrophobic, silica-based particle with a high surface area that is used in a variety of thermal insulation and specialty chemical applications. In the building and construction industry, the product is used in insulative sprayable plasters and composite building products, as well as translucent skylight, window, wall and roof systems for insulating eco-daylighting applications. In the specialty chemicals industry, the product is used to provide matte finishing, insulating and thickening properties for use in a variety of applications.

Sales and Customers

Sales of these products are made by Cabot employees and through distributors and sales representatives. In our Specialty Carbons and Formulations business, sales are generally to a broad number of customers. In our Metal Oxides business, sales under long-term contracts with two customers have accounted for a substantial portion of the revenue.

Competition

We are a leading producer of the products we sell in this segment. We compete in the manufacture of carbon black primarily with two companies with a global presence and several other companies that have a regional presence, some of which export product outside their region. We compete with several companies that produce specialty compounds, primarily in Europe, the Middle East and Asia. Our inkjet colorants and inks are designed to replace traditional pigment dispersions and dyes used in inkjet printing applications. Competitive products for inkjet colorants are organic dyes and other dispersed pigments manufactured and marketed by large chemical companies and small independent producers. For fumed silica, we compete primarily with two companies with a global presence and several other companies which have a regional presence. For aerogel, we compete principally with one other company that produces aerogel products. We also compete with non-aerogel insulation products manufactured by regional companies throughout the world.

Competition for our products is based on product performance, quality, reliability, service, technical innovation and price. We believe our product differentiation, technological leadership, operations excellence and customer service provide us with a competitive advantage.

Raw Materials

Raw materials for our products are, in general, readily available and in adequate supply. The principal raw material used in the manufacture of carbon black is a portion of the residual heavy oils derived from petroleum refining operations, the distillation of coal tars, and the production of ethylene throughout the world. Natural gas is also used in the production of carbon black. These raw material costs generally are influenced by the availability of various types of carbon black feedstock and natural gas, supply and demand of such raw materials, and related transportation costs. Importantly, movements in the market price for crude oil typically affect carbon black feedstock costs. The primary raw materials used for our specialty compounds include carbon black sourced from our carbon black plants, thermoplastic resins and mineral fillers from various sources. Raw materials for inkjet colorants include carbon black sourced from our carbon black plants, organic pigments and other treating agents available from various sources. Raw materials for inkjet inks include pigment dispersions, solvents and other additives.

Raw materials for the production of fumed silica are various chlorosilane feedstocks. We purchase feedstocks and for some customers convert their feedstock to product on a fee-basis (so called “toll conversion”). We also purchase aluminum chloride as feedstock for the production of fumed alumina. We have long-term procurement contracts or arrangements in place for the purchase of fumed silica feedstock, which we believe will enable us to meet our raw material requirements for the foreseeable future. In addition, we buy some raw materials in the spot market to help ensure flexibility and minimize costs. The principal raw materials for the production of aerogel are silica sol and/or sodium silicate.

Operations

We own, or have a controlling interest in, and operate plants that produce specialty grades of carbon black primarily in China, The Netherlands and the United States. Our specialty compounds are produced in facilities that we own, or have a controlling interest in, located in Belgium, China and the United Arab Emirates. Our inkjet colorants and inks are manufactured at our facility in Haverhill, Massachusetts. We also own, or have a controlling interest in,

manufacturing plants that produce fumed metal oxides in the United States, China, the United Kingdom, and Germany and a manufacturing plant that produces aerogel in Frankfurt, Germany. An equity affiliate operates a fumed metal oxides plant in Mettur Dam, India.

The following table shows our ownership interest as of September 30, 2016 in these segment operations in which we own less than 100%:

Location	Percentage Interest
Tianjin, China (Specialty Carbons and Formulations business)	90% (consolidated subsidiary)
Jiangxi Province, China (Metal Oxides business)	90% (consolidated subsidiary)
Mettur Dam, India (Metal Oxides business)	50% (equity affiliate)

During fiscal 2016, we announced our entry into an agreement with Inner Mongolia Hengyecheng Silicone Co., Ltd (“HYC”) to build a fumed silica manufacturing facility in Wuhai, China in which we will hold an 80% share and HYC will hold the remaining 20% share. The facility will have an initial annual manufacturing capacity of approximately 8,000 metric tons. We expect construction of the plant to begin in early calendar year 2017 and to be completed in calendar year 2019.

Purification Solutions

Products

Activated carbon is a porous material consisting mainly of elemental carbon treated with heat, steam and/or chemicals to create high internal porosity, resulting in a large internal surface area that resembles a sponge. It is generally produced in two forms, powdered and granular, and is manufactured in different sizes, shapes and levels of purity and using a variety of raw materials for a wide variety of applications. Activated carbon is used to remove contaminants from liquids and gases using a process called adsorption, whereby the interconnected pores of activated carbon trap contaminants.

Our activated carbon products are used for the purification of water, air, food and beverages, pharmaceuticals and other liquids and gases, as either a colorant or a decolorizing agent in the production of products for food and beverage applications and as a chemical carrier in slow release applications. In gas and air applications, one of the uses of activated carbon is for the removal of mercury in flue gas streams. In certain applications, used activated carbon can be reactivated for further use by removing the contaminants from the pores of the activated carbon product. The most common applications for our reactivated carbon are water treatment and food and beverage purification. In addition to our activated carbon production and reactivation, we also provide activated carbon solutions through on-site equipment and services, including delivery systems for activated carbon injection in coal-fired utilities, mobile water filter units and carbon reactivation services.

Sales and Customers

Sales of activated carbon are made by Cabot employees and through distributors and sales representatives to a broad range of customers, including coal-fired utilities, food and beverage processors, water treatment plants, pharmaceutical companies and catalyst producers. Some of our sales of activated carbon are made under annual contracts or longer-term agreements, particularly in mercury removal applications.

Competition

We are one of the leading manufacturers of activated carbon in the world. We compete in the manufacture of activated carbon with a number of companies, some of whom have a global presence and others who have a regional or local presence, although not all of these companies manufacture activated carbon for the range of applications for which we sell our products.

Competition for activated carbon and activated carbon equipment and services is based on quality, price, performance, and supply-chain stability. We believe our product and application diversity, product differentiation, technological leadership, quality, cost-effective access to raw materials, and scalable manufacturing capabilities provide us with a competitive advantage.

Raw Materials

The principal raw materials we use in the manufacture of activated carbon are various forms of coal, including lignite, wood and other carbonaceous materials, which are, in general, readily available and we believe we have in adequate supply. We also own a lignite mine that is operated by Caddo Creek Resources Company, LLC, a subsidiary of the North American Coal Company, which supplies our Marshall, Texas facility.

Operations

We own, or have a controlling interest in, and operate plants that produce activated carbon in the United States, the United Kingdom, The Netherlands and Italy. Our affiliates operate activated carbon plants in Canada and Mexico. The

following table shows our ownership interest as of September 30, 2016 in activated carbon operations in which we own less than 100%:

Location	Percentage Interest
Estevan, Saskatchewan, Canada	50% (contractual joint venture)
Atitalaquia, Hidalgo, Mexico	49% (equity affiliate)

Specialty Fluids

Products

Our Specialty Fluids segment principally produces and markets cesium formate as a drilling and completion fluid for use primarily in high pressure and high temperature oil and gas well construction. Cesium formate products are solids-free, high-density fluids that have a low viscosity, enabling safe and efficient well construction and workover operations. The fluid is resistant to high temperatures, minimizes damage to producing reservoirs and is readily biodegradable in accordance with the testing guidelines set by the Organization for Economic Cooperation and Development. In a majority of applications, cesium formate is blended with other formates or products. We also manufacture and sell fine cesium chemicals that are used in a wide range of applications, including catalysts and brazing fluxes.

Sales, Rental and Customers

Sales of our cesium formate products are made to oil and gas operating companies directly by Cabot employees and sales representatives and indirectly through oil field service companies. We generally rent cesium formate to our customers for use in drilling operations on a short-term basis and on occasion make direct sales of cesium formate outside of the rental process. After completion of a job under our rental process, the customer returns the remaining fluid to Cabot and it is reprocessed for use in subsequent well operations. Any fluid that is lost during use and not returned to Cabot is paid for by the customer.

A large portion of our fluids has been used for drilling and completion of wells in the North Sea with a limited number of customers, where we have supplied cesium formate-based fluids for both reservoir drilling and completion activities on large gas and condensate field projects in the Norwegian Continental Shelf. We continue to expand the use of our fluids to drilling operations outside of the North Sea, particularly in Asia and the Middle East.

Competition

Formate fluids compete mainly with traditional drilling fluid technologies. Competition in the well fluids business is based on product performance, quality, reliability, service, technical innovation, price, and proximity of inventory to customers' drilling operations. We believe our commercial strengths include our unique product offerings and their performance, and our customer service.

Raw Materials

The principal raw material used in this business is pollucite (cesium ore), of which we own a substantial portion of the world's known reserves. In November 2015, we completed a development project at our mine in Manitoba, Canada. We believe we have sufficient raw material to enable us to continue to supply cesium products for the foreseeable future, based on our anticipated consumption. We are not currently mining at the site and will assess options to access additional reserves in the mine, various technologies to augment our cesium supply and alternative sources of ore as demand for our cesium products warrants.

Most jobs for which cesium formate is used require a large volume of the product. Accordingly, the Specialty Fluids business maintains a large inventory of fluid.

Operations

Our mine and cesium formate manufacturing facility are located in Manitoba, Canada, and we have fluid blending and reclamation facilities in Aberdeen, Scotland and in Bergen, Norway. In addition, we warehouse fluid at various locations around the world to support existing and potential operations.

Patents and Trademarks

We own and are a licensee of various patents, which expire at different times, covering many of our products as well as processes and product uses. Although the products made and sold under these patents and licenses are important to Cabot, the loss of any particular patent or license would not materially affect our business, taken as a whole. We sell our products under a variety of trademarks we own and take reasonable measures to protect them. While our trademarks are important to Cabot, the loss of any one of our trademarks would not materially affect our business, taken as a whole.

Seasonality

Our businesses are generally not seasonal in nature, although we may experience some regional seasonal declines during holiday periods and some weather-related seasonality in Purification Solutions.

Backlog

We do not consider backlog to be a significant indicator of the level of future sales activity. In general, we do not manufacture our products against a backlog of orders. Production and inventory levels are based on the level of incoming orders as well as projections of future demand. Therefore, we believe that backlog information is not material to understanding our overall business and is not a reliable indicator of our ability to achieve any particular level of revenue or financial performance.

Employees

As of September 30, 2016, we had approximately 4,300 employees. Some of our employees in the United States and abroad are covered by collective bargaining or similar agreements. We believe that our relations with our employees are generally satisfactory.

Research and Development

Cabot develops new and improved products and higher efficiency processes through Company-sponsored research and technical service activities, including those initiated in response to customer requests. In fiscal 2016, we announced our plan to open a new Asia Technology Center in Shanghai, China to support our applications development and customer collaboration efforts in the region. We expect to open the facility in late calendar year 2017. Our expenditures for research and technical service activities generally are spread among our businesses and are shown in the consolidated statements of operations. Further discussion of our research and technical expenses incurred in each of our last three fiscal years appears in MD&A in Item 7 below.

Safety, Health and Environment ("SH&E")

Cabot has been named as a potentially responsible party under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (the "Superfund law") and comparable state statutes with respect to several sites primarily associated with our divested businesses. (See "Legal Proceedings" below.) During the next several years, as remediation of various environmental sites is carried out, we expect to spend against our $14 million environmental reserve for costs associated with such remediation. Adjustments are made to the reserve based on our continuing analysis of our share of costs likely to be incurred at each site. Inherent uncertainties exist in these estimates due to unknown conditions at the various sites, changing governmental regulations and legal standards regarding liability, and changing technologies for handling site investigation and remediation. While the reserve represents our best estimate of the costs we expect to incur, the actual costs to investigate and remediate these sites may exceed the amounts accrued in the environmental reserve. While it is always possible that an unusual event may occur with respect to a given site and have a material adverse effect on our results of operations in a particular period, we do not believe that the costs relating to these sites, in the aggregate, are likely to have a material adverse effect on our consolidated financial position. Furthermore, it is possible that we may also incur future costs relating to environmental liabilities not currently known to us or as to which it is currently not possible to make an estimate.

Our ongoing operations are subject to extensive federal, state, local, and foreign laws, regulations, rules, and ordinances relating to safety, health, and environmental matters ("SH&E Requirements"). These SH&E Requirements include requirements to obtain and comply with various environmental-related permits for constructing any new facilities and operating all of our existing facilities and for product registrations. We have expended and will continue to expend considerable sums to construct, maintain, operate, and improve facilities for safety, health and environmental protection and to comply with SH&E Requirements. We spent approximately $30 million in environmental-related capital expenditures at existing facilities in fiscal 2016. We anticipate spending approximately $48 million for such matters in fiscal 2017, a significant portion of which will be for the installation of technology controls for sulfur dioxide and nitrogen oxide emissions at certain of our carbon black plants in North America.

In recognition of the importance of compliance with SH&E Requirements to Cabot, our Board of Directors has a Safety, Health, and Environmental Affairs Committee. The Committee, which is comprised of a majority of independent directors, meets four times a year and provides oversight and guidance to Cabot's safety, health and environmental management programs. In particular, the Committee reviews Cabot's environmental reserve, safety, health and environmental risk assessment and management processes, environmental and safety audit reports, performance metrics, performance as benchmarked against industry peer groups, assessed fines or penalties, site security and safety issues, health and environmental training initiatives, and the SH&E budget. The Committee also consults with our external and internal advisors regarding management of Cabot's safety, health and environmental programs.

The International Agency for Research on Cancer ("IARC") classifies carbon black as a Group 2B substance (known animal carcinogen, possible human carcinogen). We have communicated IARC's classification of carbon black to our customers and employees and have included that information in our safety data sheets and elsewhere, as appropriate. We continue to believe that the available evidence, taken as a whole, indicates that carbon black is not carcinogenic to

humans, and does not present a health hazard when handled in accordance with good housekeeping and safe workplace practices as described in our safety data sheets.

REACH (Registration, Evaluation and Authorization of Chemicals), the European Union (“EU”) regulatory framework for chemicals developed by the European Commission (“EC”), applies to all chemical substances produced or imported into the EU in quantities greater than one metric ton a year. Manufacturers or importers of these chemical substances are required to submit specified health, safety, risk and use information about the substance to the European Chemical Agency. We have completed all required registrations under REACH to date and will continue to complete the registrations under REACH for our products in accordance with future registration deadlines. We will also continue to work with the manufacturers and importers of our raw materials, including our feedstocks, to ensure their registration prior to the applicable deadlines. In addition, the EC has adopted a harmonized definition of “nanomaterial” to be used in the EU to identify materials for which special provisions may apply, such as risk assessment and ingredient labeling. The EC definition is broad and applies to many of our existing products, including carbon black, fumed silica and fumed alumina. Country-specific product registration and assessment programs have been implemented in some countries and are being developed by others. We will continue to address these requirements.

Environmental agencies worldwide are increasingly implementing regulations and other requirements resulting in more restrictive air emission limits globally, particularly as they relate to nitrogen oxide, sulphur dioxide and particulate matter emissions. In addition, global efforts to reduce greenhouse gas emissions impact the carbon black and activated carbon industries as carbon dioxide is emitted from those manufacturing processes. The EU Emission Trading Scheme applies to our carbon black facilities and one activated carbon facility in Europe. In China, two of our carbon black facilities are participating in regional pilot emissions trading programs associated with the development of a national trading program, which we anticipate will be more fully defined in fiscal 2017. In Canada, our carbon black manufacturing facility will be subject to the greenhouse gas emissions trading program beginning in calendar year 2017. In the U.S., some of our facilities are required to report their greenhouse gas emissions, but are not currently subject to programs requiring trading or emission controls. We generally expect to purchase emission credits where necessary to respond to allocation shortfalls. In addition, air emission regulations may be adopted in the future in other regions and countries where we operate, which could have an impact on our operations.

A number of organizations and regulatory agencies have become increasingly focused on the issue of water scarcity and water quality, particularly in certain geographic regions. We are engaged in various activities to promote water conservation and wastewater recycling. The costs associated with these activities are not expected to have a material adverse effect on our operations.

Various U.S. agencies and international bodies have adopted security requirements applicable to certain manufacturing and industrial facilities and marine port locations. These security-related requirements involve the preparation of security assessments and security plans in some cases, and in other cases the registration of certain facilities with specified governmental authorities. We closely monitor all security-related regulatory developments and believe we are in compliance with all existing requirements. Compliance with such requirements is not expected to have a material adverse effect on our operations.

Foreign and Domestic Operations and Export Sales

A significant portion of our revenues and operating profits is derived from overseas operations. The profitability of our segments is affected by fluctuations in the value of the U.S. dollar relative to foreign currencies. (See MD&A and the Geographic Information portion of Note U for further information relating to sales and long-lived assets by geographic area.) Currency fluctuations, nationalization and expropriation of assets are risks inherent in international operations. We have taken steps we deem prudent in our international operations to diversify and otherwise to protect against these risks, including the use of foreign currency financial instruments to reduce the risk associated with changes in the value of certain foreign currencies compared to the U.S. dollar. (See the risk management discussion contained in “Quantitative and Qualitative Disclosures About Market Risk” in Item 7A below and Note L of the Notes to the Company’s Consolidated Financial Statements).

Item 1A. Risk Factors

In addition to factors described elsewhere in this report, the following are important factors that could adversely affect our business. The risks described below are not the only risks we face. Additional risks not presently known to us or that we currently deem immaterial may also impair our business operations and financial results.

Negative or uncertain worldwide or regional economic conditions may adversely impact our business.

Our operations and performance are affected by worldwide and regional economic conditions. Continued uncertainty or a deterioration in the economic conditions affecting the businesses to which, or geographic areas in which, we sell products could reduce demand for our products. We may also experience pricing pressure on products and services, which could decrease our revenues and have an adverse effect on our financial condition and cash flows. In addition, during periods of economic uncertainty, our customers may temporarily pursue inventory reduction measures that exceed declines in the actual underlying demand. Our businesses are sensitive to industry capacity utilization, particularly Reinforcement Materials and Purification Solutions. As a result, pricing tends to fluctuate when capacity

utilization changes occur, which could affect our financial performance.

As a chemical manufacturing company, our operations are subject to operational risks and have the potential to cause environmental or other damage as well as personal injury, which could adversely affect our business, results of operations and cash flows.

The operation of a chemical manufacturing business as well as the sale and distribution of chemical products are subject to operational as well as safety, health and environmental risks. For example, the production and/or processing of carbon black, specialty compounds, fumed metal oxides, aerogel, activated carbon and other chemicals involve the handling, transportation, manufacture or use of certain substances or components that may be considered toxic or hazardous. Our manufacturing processes and the transportation of chemical products are subject to risks inherent in chemical manufacturing, including leaks, fires, explosions, toxic releases, mechanical failures or unscheduled downtime. If operational risks materialize, they could result in injury or loss of life, damage to the environment, or damage to property. In addition, the occurrence of material operating problems at our

facilities or a disruption in our supply chain or distribution operations may result in loss of production, which, in turn, may make it difficult for us to meet customer needs. Accordingly, these events and their consequences could negatively impact the Company's results of operations and cash flows, both during and after the period of operational difficulties, and could harm our reputation.

A significant adverse change in a customer relationship or the failure of a customer to perform its obligations under agreements with us could harm our business or cash flows.

Our success in strengthening relationships and growing business with our largest customers and retaining their business over extended time periods could affect our future results. We have a group of key customers across our businesses that together represent a significant portion of our total net sales and operating revenues. The loss of any of our important customers, or a significant reduction in volumes sold to them, could adversely affect our results of operations until such business is replaced or any temporary disruption ends. Any deterioration in the financial condition of any of our customers that impairs our customers' ability to make payments to us also could increase our uncollectible receivables and could affect our future results and financial condition.

Volatility in the price of energy and raw materials could impact our margins and working capital.

Our manufacturing processes consume significant amounts of energy and raw materials, the costs of which are subject to worldwide supply and demand as well as other factors beyond our control. Dramatic increases in such costs or decreases in the availability of raw materials at acceptable costs could have an adverse effect on our results of operations. For example, movements in the market price for crude oil typically affect carbon black feedstock costs. Significant movements in the market price for crude oil tend to create volatility in our carbon black feedstock costs, which can affect our working capital and results of operations. Certain of our carbon black supply contracts contain provisions that adjust prices to account for changes in a relevant feedstock price index. We also attempt to offset the effects of increases in raw material and energy costs through selling price increases in our non-contract sales, productivity improvements and cost reduction efforts. Success in offsetting increased raw material and energy costs with price increases is largely influenced by competitive and economic conditions and could vary significantly depending on the segment served. Such increases may not be accepted by our customers, may not be sufficient to compensate for increased raw material and energy costs or may decrease demand for our products and our volume of sales. If we are not able to fully offset the effects of increased raw material or energy costs, it could have a significant impact on our financial results. Rapid declines in energy and raw material costs can also negatively impact our financial results, as such changes can negatively affect the returns we receive on our energy centers and yield improvement investments, and may negatively impact our contract pricing adjustments. In addition, we use a variety of feedstock indices in our supply contracts to adjust our prices for changes in raw materials costs. Depending on feedstock markets and our choice of feedstocks, the indices we use in our supply contracts may not precisely track our actual costs. This could result in an incongruity between our contract pricing adjustments and changes in our actual feedstock costs, which can affect our margins.

We may not be successful achieving our growth expectations from new products, new applications and technology developments, and money we spend on these efforts may not result in a proportional increase in our revenues or profits.

We may not be successful achieving our growth expectations from developing new products or product applications. Moreover, we cannot be certain that the costs we incur investing in new product and technology development will result in a proportional increase in our revenues or profits. In addition, the timely commercialization of products that we are developing may be disrupted or delayed by manufacturing or other technical difficulties, market acceptance or insufficient market size to support a new product, competitors' new products, and difficulties in moving from the experimental stage to the production stage. These disruptions or delays could affect our future business results.

We face operational risks inherent in mining operations and our mining operations have the potential to cause safety issues, including those that could result in significant personal injury.

We own two mines, a cesium mine in Manitoba, Canada, a portion of which is located under Bernic Lake, and an above-ground lignite mine, which is located close to our Marshall, Texas facility and operated by a subsidiary of The North American Coal Company. Mining operations by their nature are activities that involve a high level of uncertainty and are often affected by risks and hazards outside of our control. At our lignite mine, the risks are primarily operational risks associated with the maintenance and operation of the heavy equipment required to dig and haul the lignite, and risks relating to lower than expected lignite quality or recovery rates. Our underground mine in Manitoba is subject to a number of risks, including industrial accidents, unexpected geological conditions, fall of ground accidents or structural collapses, which, in the case of our cesium mine, could lead to flooding, and lower than expected ore quality, ore grades or recovery rates. Following a fall of ground incident in 2013, we implemented additional safety measures and several types of monitoring devices in the mine that have indicated good structural stability in the mine since that time. However, the structural stability may change at any time and there is a possibility of deterioration and flooding of this mine. While we have not mined at our mine in Manitoba since we completed a development project at that site in November 2015, we may resume those mining operations in the future. The failure to adequately manage these risks could result in significant personal

injury, loss of life, damage to mineral properties, production facilities or mining equipment, damage to the environment, delays in or reduced production, and potential legal liabilities.

Any failure to realize benefits from acquisitions, alliances or joint ventures could adversely affect future financial results.

In achieving our strategic plan objectives, we may pursue strategic bolt-on acquisitions or joint ventures intended to complement or expand our existing businesses globally or add product technology, or both. The success of acquisitions of businesses, new technologies and products, or arrangements with third parties is not always predictable and we may not be successful in realizing our objectives as anticipated. We may not be able to integrate any acquired businesses successfully into our existing businesses, make such businesses profitable, or realize anticipated cost savings or synergies, if any, from these acquisitions, which could adversely affect our business results.

Plant capacity expansions and site development projects may be delayed and/or not achieve the expected benefits.

Our ability to complete capacity expansions and other site development projects as planned may be delayed or interrupted by the need to obtain environmental and other regulatory approvals, unexpected cost increases, availability of labor and materials, unforeseen hazards such as weather conditions, and other risks customarily associated with construction projects. Moreover, the cost of these activities could have a negative impact on the financial performance of the relevant business, and in the case of capacity expansion projects, until capacity utilization at the particular facility is sufficient to absorb the incremental costs associated with the expansion. In addition, our ability to expand capacity in emerging regions depends in part on economic and political conditions in these regions and, in some cases, on our ability to establish operations, construct additional manufacturing capacity or form strategic business alliances.

An interruption in our operations as a result of fence-line arrangements could disrupt our manufacturing operations and adversely affect our financial results.

At certain of our facilities we have fence-line arrangements with adjacent third party manufacturing operations (“fence-line partners”), who provide raw materials for our manufacturing operations and/or take by-products generated from our operations. Accordingly, any unplanned disruptions or curtailments in a fence-line partner’s production facilities that impacts their ability to supply us with raw materials or to take our manufacturing by-products could disrupt our manufacturing operations or cause us to incur increased operating costs to mitigate such disruption.

If our assumptions about future sales and profitability of the Purification Solutions segment are incorrect and we do not achieve our growth expectations for this business, we may be required to impair certain assets.

We performed our annual goodwill impairment test of Purification Solutions as of May 31, 2016 and determined that the fair value of the reporting unit exceeded its carrying amount by 9% at that time. Our strategic plan underlying this analysis relies on further growth in the mercury removal related portion of the business, which is largely dependent on the amount of coal-based power generation used in the United States and the continued regulation of those utilities under the Mercury and Air Toxics Standards (“MATS”). The analysis also anticipates growth in demand for our activated carbon products in other applications, while maintaining our margin expectations. If competitive forces, unfavorable macroeconomic trends or environmental policy changes render our assumptions concerning demand growth and margin expectations for the business unreasonable, or we are not otherwise able to successfully execute plans to achieve our growth expectations for this business, there may be an impairment of certain assets.

We are exposed to political or country risk inherent in doing business in some countries.

Sales outside of the U.S. constituted a majority of our revenues in fiscal 2016. Although much of our international business is currently in regions where the political and economic risk levels and established legal systems are similar to those in the U.S., we also conduct business in countries that have less stable legal systems and financial markets,

and potentially more corrupt business environments than the U.S. Our operations in some countries may be subject to the following risks: changes in the rate of economic growth; unsettled political or economic conditions; non-renewal of operating permits or licenses; possible expropriation or other governmental actions; corruption by government officials and other third parties; social unrest, war, terrorist activities or other armed conflict; confiscatory taxation or other adverse tax policies; deprivation of contract rights; trade regulations affecting production, pricing and marketing of products; reduced protection of intellectual property rights; restrictions on the repatriation of income or capital; exchange controls; inflation; currency fluctuations and devaluation; the effect of global health, safety and environmental matters on economic conditions and market opportunities; and changes in financial policy and availability of credit. In addition, there may be costs associated with repatriating income or capital.

We face competition from other specialty chemical companies.

We operate in a highly competitive marketplace. Our ability to compete successfully depends in part upon our ability to maintain a superior technological capability and to continue to identify, develop and commercialize new and innovative, high value-added products for existing and future customers. Increased competition from existing or newly developed products offered by our competitors or companies whose products offer a similar functionality as our products and could be substituted for our products, may negatively affect demand for our products. In addition, actions by our competitors could affect our ability to maintain or raise prices, successfully enter new markets or maintain or grow our market position.

Litigation or legal proceedings could expose us to significant liabilities and thus negatively affect our financial results.

As more fully described in “Item 3—Legal Proceedings”, we are a party to or the subject of lawsuits, claims, and proceedings, including, but not limited to, those involving environmental, and health and safety matters as well as product liability and personal injury claims relating to asbestosis, silicosis, and coal worker’s pneumoconiosis. We are also a potentially responsible party in various environmental proceedings and remediation matters wherein substantial amounts are at issue. Adverse rulings, judgments or settlements in pending or future litigation (including liabilities associated with respirator claims) or in connection with environmental remediation activities could adversely affect our financial results or cause our results to differ materially from those expressed or forecasted in any forward-looking statements.

Fluctuations in foreign currency exchange and interest rates could affect our financial results.

We earn revenues, pay expenses, own assets and incur liabilities in countries using currencies other than the U.S. dollar. In fiscal 2016, we derived a majority of our revenues from sales outside the U.S. Because our consolidated financial statements are presented in U.S. dollars, we must translate revenues, income and expenses, as well as assets and liabilities, into U.S. dollars at exchange rates in effect during or at the end of each reporting period. Therefore, increases or decreases in the value of the U.S. dollar against other currencies in countries where we operate will affect our results of operations and the value of balance sheet items denominated in foreign currencies. Due to the geographic diversity of our operations, weaknesses in some currencies might be offset by strengths in others over time. In addition, we are exposed to adverse changes in interest rates. We manage both these risks through normal operating and financing activities and, when deemed appropriate, through the use of derivative instruments as well as foreign currency debt. We cannot be certain, however, that we will be successful in reducing the risks inherent in exposures to foreign currency and interest rate fluctuations.

Further, we have exposure to foreign currency movements because certain foreign currency transactions need to be converted to a different currency for settlement. These conversions can have a direct impact on our cash flows.

Our tax rate is dependent upon a number of factors, a change in any of which could impact our future tax rates and net income.

Our future tax rates may be adversely affected by a number of factors, including: future changes in the jurisdictions in which our profits are determined to be earned and taxed; changes in the estimated realization of our net deferred tax assets; the repatriation of non-U.S. earnings for which we have not previously provided for U.S. income and non-U.S. withholding taxes; adjustments to estimated taxes upon finalization of various tax returns; increases in expenses that are not deductible for tax purposes, including charges from impairment of goodwill in connection with acquisitions; changes in available tax credits; the resolution of issues arising from tax audits with various tax authorities; and changes in tax laws or the interpretation of such tax laws. Losses for which no tax benefits can be recorded could materially impact our tax rate and its volatility from one quarter to another.

Information technology systems failures, data security breaches or network disruptions could compromise our information, disrupt our operations and expose us to liability, which may adversely impact our operations.

In the ordinary course of our business, we store sensitive data, including intellectual property, our proprietary business information and certain information of our customers, suppliers, business partners, and employees in our information technology systems. The secure processing, maintenance and transmission of this data is critical to our operations. Information technology systems failures, including risks associated with upgrading our systems or in successfully integrating information technology and other systems in connection with the integration of businesses we acquire, network disruptions or unauthorized access could disrupt our operations by impeding our processing of transactions and our financial reporting, and our ability to protect our customer or company information, which could have a material adverse effect on our business or results of operations. In addition, as with all enterprise information systems, our information technology systems could be penetrated by outside parties intent on extracting information, corrupting information, or disrupting business processes. Breaches of our security measures or the accidental loss, inadvertent disclosure, or unapproved dissemination of proprietary information or sensitive or confidential information about the Company, our employees, our vendors, or our customers, could result in legal claims or proceedings and potential liability for us, damage to our reputation, and could otherwise harm our business and our results of operations.

Our operations are subject to extensive safety, health and environmental requirements, which could increase our costs and/or reduce our profit.

Our ongoing operations are subject to extensive federal, state, local and foreign laws, regulations, rules and ordinances relating to safety, health and environmental matters, many of which provide for substantial monetary fines and criminal sanctions for violations. These include requirements to obtain and comply with various environmental-related permits for constructing any new facilities and operating all of our existing facilities. In addition, in certain geographic areas, our carbon black and activated carbon facilities are subject to greenhouse gas emission trading schemes under which we may be required to purchase emission credits if our emission levels exceed our allocations. The enactment of new environmental laws and regulations and/or the more aggressive interpretation of existing requirements could require us to incur significant costs for compliance or capital improvements or limit our current or planned operations, any of which could have a material adverse effect on our earnings or cash flow. We attempt to offset the effects of these compliance costs through price increases, productivity improvements and cost reduction efforts. Success in offsetting any such increased regulatory costs is largely influenced by competitive and economic conditions and could vary significantly depending on the segment served. Such increases may not be accepted by our customers, may not be sufficient to compensate for increased regulatory costs or may decrease demand for our products and our volume of sales. See “Item 3 Legal Proceedings—Environmental Proceedings”.

The elimination of tariffs placed on U.S. imports of Chinese activated carbon, or their failure to adequately address the impact of low-priced imports from China, could have a material adverse effect on our Purification Solutions segment.

Purification Solutions faces pressure and competition in the U.S. from low-priced imports of activated carbon products. If the amounts of these low-priced imports increase, especially if they are sold at less than fair value, our sales of competing products could decline, which could have an adverse effect on the earnings of Purification Solutions. In addition, sales of these low-priced imports may negatively impact our pricing. To limit these activities, regulators in the U.S. have enacted an antidumping duty order on steam activated carbon products from China. A proceeding that will evaluate whether to extend the order for an additional five years will be initiated in February 2018. The amount of antidumping duties collected on imports of steam activated carbon from China is reviewed annually by the U.S. Department of Commerce. To the extent the antidumping margins do not adequately address the degree to which imports are unfairly traded, the antidumping order may be less effective in reducing the volume of these low-priced activated carbon imports in the U.S., which could negatively affect demand and/or pricing for our products. In addition, if the antidumping order is not extended beyond its current term, the amount of low-priced imports from China may increase, which could have an adverse effect on our Purification Solutions business.

We have entered into a number of derivative contracts with financial counterparties. The effectiveness of these contracts is dependent on the ability of these financial counterparties to perform their obligations and their nonperformance could harm our financial condition.

We have entered into forward foreign currency contracts and cross currency swaps as part of our financial risk management strategy. The effectiveness of our risk management program using these instruments is dependent, in part, upon the counterparties to these contracts honoring their financial obligations. If any of our counterparties are unable to perform their obligations in the future, we could be exposed to increased earnings and cash flow volatility due to an instrument’s failure to hedge or adequately address a financial risk.

The continued protection of our patents, trade secrets and other proprietary intellectual property rights are important to our success.

Our patents, trade secrets and other intellectual property rights are important to our success and competitive position. We own various patents and other intellectual property rights in the U.S. and other countries covering many of our products, as well as processes and product uses. Where we believe patent protection is not appropriate or obtainable, we rely on trade secret laws and practices to protect our proprietary technology and processes, such as physical

security, limited dissemination and access and confidentiality agreements with our employees, customers, consultants, business partners, potential licensees and others to protect our trade secrets and other proprietary information. However, trade secrets can be difficult to protect and the protective measures we have put in place may not prevent disclosure or unauthorized use of our proprietary information or provide an adequate remedy in the event of misappropriation or other violations of our proprietary rights. In addition, we are a licensee of various patents and intellectual property rights belonging to others in the U.S. and other countries. Because the laws and enforcement mechanisms of some countries may not allow us to protect our proprietary rights to the same extent as we are able to do in the U.S., the strength of our intellectual property rights will vary from country to country.

Irrespective of our proprietary intellectual property rights, we may be subject to claims that our products, processes or product uses infringe the intellectual property rights of others. These claims, even if they are without merit, could be expensive and time consuming to defend and if we were to lose such claims, we could be enjoined from selling our products or using our processes and/or be subject to damages, or be required to enter into licensing agreements requiring royalty payments and/or use restrictions. Licensing agreements may not be available to us, or if available, may not be available on acceptable terms.

Natural disasters could affect our operations and financial results.

We operate facilities in areas of the world that are exposed to natural hazards, such as floods, windstorms, hurricanes, and earthquakes. Such events could disrupt our supply of raw materials or otherwise affect production, transportation and delivery of our products or affect demand for our products.

Item 1B. Unresolved Staff Comments
None.

Item 2. Properties
Cabot's corporate headquarters are in leased office space in Boston, Massachusetts. We also own or lease office, manufacturing, storage, distribution, marketing and research and development facilities in the United States and in foreign countries. The locations of our principal manufacturing and/or administrative facilities are set forth in the table below. Unless otherwise indicated, all the properties are owned.

Location by Region	Reinforcement Materials	Performance Chemicals	Purification Solutions	Specialty Fluids
Americas Region				
Alpharetta, GA*(1)	X	X	X	X
Tuscola, IL		X		
Canal, LA	X	X		
Ville Platte, LA	X			
Billerica, MA	X	X	X	X
Haverhill, MA		X		
Midland, MI		X		
Pryor, OK			X	
Marshall, TX			X	
Pampa, TX	X	X		
Campana, Argentina	X			
Maua, Brazil	X	X		
Sao Paulo, Brazil*(1)	X	X	X	X
Cartagena, Colombia	X			
Lac du Bonnet, Manitoba**				X
Altamira, Mexico	X			
Sarnia, Ontario	X	X		

(1) Business service center
* Leased premises
** Building(s) owned by Cabot on leased land

Location by Region	Reinforcement Materials	Performance Chemicals	Purification Solutions	Specialty Fluids
EMEA Region				
Loncin, Belgium		X		
Pepinster, Belgium		X		
Valasske Mezirici (Valmez), Czech Republic**	X			
Port Jerome, France**	X			
Frankfurt, Germany*		X		
Rheinfelden, Germany		X		
Ravenna, Italy (2 plants)	X		X	
Riga, Latvia*(1)	X	X	X	X
Bergen, Norway*				X
Schaffhausen, Switzerland*	X	X	X	X
Botlek, The Netherlands**	X	X		
Amersfoort, The Netherlands*			X	
Klazienaveen, The Netherlands			X	
Zaandam, The Netherlands			X	
Dubai, United Arab Emirates*		X		
Purton, United Kingdom (England)			X	
Aberdeen, United Kingdom (Scotland)*				X
Glasgow, United Kingdom (Scotland)			X	
Barry, United Kingdom (Wales)**		X		
Asia Pacific Region				
Jiangxi Province, China**		X		
Tianjin, China**	X	X		
Shanghai, China*(1)	X	X	X	X
Shanghai, China** (plant)	X			
Xingtai City, China**	X			
Mumbai, India*	X	X	X	
Cilegon, Indonesia**	X			
Jakarta, Indonesia*(1)	X	X	X	X
Chiba, Japan	X			
Shimonoseki, Japan**	X			
Tokyo, Japan*(1)	X	X	X	X
Port Dickson, Malaysia**	X			

(1) Business service center
* Leased premises
** Building(s) owned by Cabot on leased land

We conduct research and development for our various businesses primarily at facilities in Billerica, Massachusetts; Amersfoort, The Netherlands; Pampa, Texas; Pepinster, Belgium; Frankfurt, Germany; and Shanghai, China.

Our existing manufacturing plants generally have sufficient production capacity to meet current requirements and expected near-term growth. These plants are generally well maintained, in good operating condition and suitable and adequate for their intended use. Our administrative offices and other facilities are suitable and adequate for their intended purposes.

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Item 3. Legal Proceedings

Cabot is a party in various lawsuits and environmental proceedings wherein substantial amounts are claimed. The following is a description of the significant proceedings pending on September 30, 2016, unless otherwise specified.

Environmental Proceedings

In November 2013, Cabot entered into a Consent Decree with the United States Environmental Protection Agency ("EPA") and the Louisiana Department of Environmental Quality ("LDEQ") regarding Cabot's three carbon black manufacturing facilities in the United States. This settlement is related to EPA's national enforcement initiative focused on the U.S. carbon black manufacturing sector alleging non-compliance with certain regulatory and permitting requirements under The Clean Air Act, including the New Source Review ("NSR") construction permitting requirements. Pursuant to this settlement, which was approved by the U.S. District Court for the Western District of Louisiana in March, 2014, Cabot paid a combined $975,000 civil penalty to EPA and LDEQ, agreed to fund environmental mitigation projects in the three communities where the plants are located for a total cost of approximately $450,000, two of which have been completed, and will install technology controls for sulfur dioxide and nitrogen oxide. We expect that the total capital costs to install these controls will be between $100 million and $150 million and will be incurred through calendar year 2020. In addition, Cabot has agreed to certain best management practices ("BMPs") to control emissions of particulate matter at the three locations. Continental Carbon settled with EPA on similar terms in 2015. It is expected that other carbon black manufacturers will also be required to install technology controls and agree to adopt BMPs at their U.S. facilities in connection with this initiative and are also likely to pay a civil penalty and fund mitigation projects.

We continue to perform certain sampling and remediation activities at a former pine tar manufacturing site in Gainesville, Florida that we sold in the 1960s. Those activities are pursuant to a formal Record of Decision and 1991 Consent Decree with EPA. Cabot installed a groundwater treatment system at the site in the early 1990s, and that system is still in operation. We have also been requested by EPA and other stakeholders to carry out various other additional work at the site, the scope of which has yet to be fully determined. We continue to work cooperatively with EPA, the Florida Department of Environmental Protection and the local authorities on this matter.

As of September 30, 2016, we had a $14 million reserve for environmental remediation costs at various sites. The operation and maintenance component of this reserve was $6 million. The $14 million reserve represents our current best estimate of costs likely to be incurred for remediation based on our analysis of the extent of cleanup required, alternative cleanup methods available, the ability of other responsible parties to contribute and our interpretation of laws and regulations applicable to each of our sites.

Other Proceedings

Respirator Liabilities

We have exposure in connection with a safety respiratory products business that a subsidiary acquired from American Optical Corporation ("AO") in an April 1990 asset purchase transaction. The subsidiary manufactured respirators under the AO brand and disposed of that business in July 1995. In connection with its acquisition of the business, the subsidiary agreed, in certain circumstances, to assume a portion of AO's liabilities, including costs of legal fees together with amounts paid in settlements and judgments, allocable to AO respiratory products used prior to the 1990 purchase by the Cabot subsidiary. In exchange for the subsidiary's assumption of certain of AO's respirator liabilities, AO agreed to provide to the subsidiary the benefits of: (i) AO's insurance coverage for the period prior to the 1990 acquisition and (ii) a former owner's indemnity of AO holding it harmless from any liability allocable to AO respiratory products used prior to May 1982.

Generally, these respirator liabilities involve claims for personal injury, including asbestosis, silicosis and coal worker's pneumoconiosis, allegedly resulting from the use of respirators that are alleged to have been negligently

designed and/or labeled. Neither Cabot, nor its past or present subsidiaries, at any time manufactured asbestos or asbestos-containing products. At no time did this respiratory product line represent a significant portion of the respirator market.

The subsidiary transferred the business to Aearo Corporation ("Aearo") in July 1995. Cabot agreed to have the subsidiary retain certain liabilities associated with exposure to asbestos and silica while using respirators prior to the 1995 transaction so long as Aearo paid, and continues to pay, Cabot an annual fee of $400,000. Aearo can discontinue payment of the fee at any time, in which case it will assume the responsibility for and indemnify Cabot against those liabilities which Cabot's subsidiary had agreed to retain. We anticipate that we will continue to receive payment of the $400,000 fee from Aearo and thereby retain these liabilities for the foreseeable future. We have no liability in connection with any products manufactured by Aearo after 1995.

In addition to Cabot's subsidiary and as described above, other parties are responsible for significant portions of the costs of respirator liabilities, leaving Cabot's subsidiary with a portion of the liability in only some of the pending cases. These parties include Aearo, AO, AO's insurers, another former owner and its insurers, and a third-party manufacturer of respirators formerly sold under the AO brand and its insurers (collectively, with Cabot's subsidiary, the "Payor Group").

As of both September 30, 2016 and 2015, there were approximately 38,000 claimants in pending cases asserting claims against AO in connection with respiratory products. Cabot has contributed to the Payor Group's defense and settlement costs with respect to a percentage of pending claims depending on several factors, including the period of alleged product use. In order to quantify our estimated share of liability for pending and future respirator liability claims, we have engaged, through counsel, the assistance of Hamilton, Rabinovitz & Alschuler, Inc. ("HR&A"), a leading consulting firm in the field of tort liability valuation. The methodology used by HR&A addresses the complexities surrounding our potential liability by making assumptions about future claimants with respect to periods of asbestos, silica and coal mine dust exposure and respirator use. Using those and other assumptions, HR&A estimates the number of future asbestos, silica and coal mine dust claims that will be filed and the related costs that would be incurred in resolving both currently pending and future claims. On this basis, HR&A then estimates the value of the share of these liabilities that reflect our period of direct manufacture and our contractual obligations. During the three months ended September 30, 2016, HR&A updated this estimate. Based on the HR&A estimates, as of September 30, 2016, we increased our reserve for our estimated share of liability for pending and future respirator claims by $13 million to $21 million. The increase reflects recent increases in certain defense and indemnity costs. We made payments related to our respirator liability of $3 million in fiscal 2016 and $2 million in each of fiscal 2015 and 2014.

Our current estimate of the cost of our share of existing and future respirator liability claims is based on facts and circumstances existing at this time. Developments that could affect our estimate include, but are not limited to, (i) significant changes in the number of future claims, (ii) changes in the rate of dismissals without payment of pending claims, (iii) significant changes in the average cost of resolving claims, (iv) significant changes in the legal costs of defending these claims, (v) changes in the nature of claims received, (vi) changes in the law and procedure applicable to these claims, (vii) the financial viability of members of the Payor Group, (viii) a change in the availability of the insurance coverage of the members of the Payor Group or the indemnity provided by AO's former owner, (ix) changes in the allocation of costs among the Payor Group, and (x) a determination that the assumptions that were used to estimate our share of liability are no longer reasonable. We cannot determine the impact of these potential developments on our current estimate of our share of liability for these existing and future claims. Accordingly, the actual amount of these liabilities for existing and future claims could be different than the reserved amount.

Other Matters

We have various other lawsuits, claims and contingent liabilities. In our opinion, although final disposition of some or all of these other suits and claims may impact our financial statements in a particular period, they should not, in the aggregate, have a material adverse effect on our consolidated financial statements.

Item 4. Mine Safety Disclosures
Not applicable.

Executive Officers of the Registrant

Set forth below is certain information about Cabot's executive officers as of November 23, 2016.

Sean D. Keohane, age 49, is President and Chief Executive Officer and a member of Cabot's Board of Directors, positions he has held since March 2016. Mr. Keohane joined Cabot in August 2002 and was named General Manager of Performance Chemicals in May 2008. From March 2012 until November 2014, he was Senior Vice President and President of Performance Chemicals, and from November 2014 until March 2016 he was Executive Vice President and President of Reinforcement Materials. He was appointed Vice President in March 2005, Senior Vice President in March 2012 and Executive Vice President in November 2014. He was a member of the Interim Office of the Chief Executive Officer (the "CEO Office"), which was in place from December 2015 until March 2016.

Eduardo E. Cordeiro, age 49, is Executive Vice President and Chief Financial Officer and President of the Americas and Europe, Middle East and Africa ("EMEA") regions. Mr. Cordeiro joined Cabot in 1998 and has served in a variety of leadership positions, including Corporate Controller, General Manager of the Fumed Metal Oxides business and General Manager of the Supermetals business. He was responsible for Corporate Strategy from May 2008 until February 2009, when he became Cabot's Chief Financial Officer. Mr. Cordeiro was appointed Vice President in March 2003 and Executive Vice President in March 2009. He was a member of the CEO Office, which was in place from December 2015 until March 2016.

Nicholas S. Cross, age 55, is Executive Vice President and President of Performance Chemicals and Specialty Fluids. Mr. Cross joined Cabot in September 2009 as President of the EMEA region and was appointed President of Advanced Technologies in January 2013 and President of Performance Chemicals in November 2014. He was appointed Vice President upon joining Cabot in 2009, Senior Vice President in March 2012 and Executive Vice President in November 2014. Prior to joining Cabot, Mr. Cross held a variety of leadership positions in BP plc's Chemicals, Oil and Gas businesses, including Director of Chemicals Strategy and Head of International NGLs. He was a member of the CEO Office, which was in place from December 2015 until March 2016.

Brian A. Berube, age 54, is Senior Vice President and General Counsel and interim Chief Human Resources Officer. Mr. Berube joined Cabot in 1994 as an attorney in Cabot's law department and became Deputy General Counsel in June 2001, business General Counsel in March 2002, and General Counsel in March 2003. He was appointed interim Chief Human Resources Officer in July 2016. Mr. Berube was appointed Vice President in March 2002 and Senior Vice President in March 2012. He was a member of the CEO Office, which was in place from December 2015 until March 2016.

Hobart C. Kalkstein, age 46, is Senior Vice President and President of Reinforcement Materials. Mr. Kalkstein joined Cabot in 2005. Since joining the Company, he has held several key management positions, most recently as Vice President of Corporate Strategy and Development from December 2015 to April 2016. From October 2013 to December 2015, he served as Vice President of Global Business Operations for Purification Solutions and from November 2012 to December 2015 as General Manager of Global Emission Control Solutions for Purification Solutions, and from January 2012 to November 2012 he served as Vice President of Business Operations and Executive Director of Marketing and Business Strategy for Performance Chemicals. Prior to that, he served as General Manager of the Aerogel business from October 2007 to February 2010. He was appointed Senior Vice President in April 2016.

Friedrich von Gottberg, age 48, is Senior Vice President and President of Purification Solutions. Mr. von Gottberg joined Cabot in 1997. Since joining the Company he has held a variety of leadership positions in Research and Development and Finance. Prior to assuming his current role in January 2013, he was Vice President of the New Business Group from March 2008 until March 2012, and Senior Vice President and President of Advanced Technologies from March 2012 until January 2013. Mr. von Gottberg was appointed Vice President in March 2005 and Senior Vice President in March 2012.

PART II

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

Cabot's common stock is listed for trading (symbol CBT) on the New York Stock Exchange. As of November 18, 2016, there were 735 holders of record of Cabot's common stock. The tables below show the high and low sales price for Cabot's common stock for each of the fiscal quarters ended December 31, March 31, June 30, and September 30 and the quarterly cash dividend paid on Cabot's common stock for the past two fiscal years.

Stock Price and Dividend Data

	Quarters Ended			
	December 31	March 31	June 30	September 30
Fiscal 2016				
Cash dividends per share	$0.22	$0.22	$0.30	$ 0.30
Price range of common stock:				
High	$44.23	$49.62	$50.68	$ 53.48
Low	$31.03	$36.12	$42.27	$ 43.95
Fiscal 2015				
Cash dividends per share	$0.22	$0.22	$0.22	$ 0.22
Price range of common stock:				
High	$50.86	$47.94	$47.27	$ 38.59
Low	$39.62	$40.33	$37.24	$ 31.04

Issuer Purchases of Equity Securities

The table below sets forth information regarding Cabot's purchases of its equity securities during the quarter ended September 30, 2016:

Period	Total Number of Shares Purchased[1]	Average Price Paid per Share	Total Number of Shares Purchased as Part of Publicly Announced Plans or Programs[1]	Maximum Number (or Approximate Dollar Value) of Shares that May Yet Be Purchased Under the Plans or Programs[1]
July 1, 2016—July 31, 2016	—	$ —	—	3,124,324
August 1, 2016—August 31, 2016	210,000	$ 49.29	210,000	2,914,324
September 1, 2016—September 30, 2016	92,000	$ 50.01	92,000	2,822,324
Total	302,000		302,000	

(1) On January 13, 2015, Cabot publicly announced that the Board of Directors authorized the Company to repurchase up to five million shares of its common stock on the open market or in privately negotiated transactions. The prior repurchase authorization was terminated at that time. The current authorization does not have a set expiration date. In the fourth quarter of 2016, Cabot repurchased 302,000 shares under this authorization.

Item 6. Selected Financial Data

On July 31, 2012, Cabot completed the purchase of Norit N.V. ("Purification Solutions"). The operating results and ratios presented below for fiscal 2012 include two months of results of Purification Solutions. Beginning September 30, 2012 the balance sheet items presented below include those of Purification Solutions.

On November 18, 2013, Cabot purchased all of its joint venture partner's common stock in NHUMO, S.A. de C.V. ("NHUMO"), which represented approximately 60% of the outstanding common stock of the joint venture. Prior to this transaction, the Company owned approximately 40% of the outstanding common stock of NHUMO, and the NHUMO entity was accounted for as an equity affiliate of the Company. The results of fiscal 2014 in the table below include 11 months of results at 100% consolidation and one month of results accounted for under the equity method at 40%. Results for all years prior to fiscal 2014 are reported under the equity method at 40%.

The Company completed the sales of its Supermetals business and Security Materials business on January 20, 2012 and July 31, 2014, respectively. The results of operations for both businesses for all periods presented are reflected as discontinued operations in the Consolidated Statements of Operations.

	Years Ended September 30				
	2016	2015	2014	2013	2012
	(Dollars in millions, except per share amounts and ratios)				
Consolidated Net Income (Loss)					
Net sales and other operating revenues	$2,411	$2,871	$3,647	$3,456	$3,291
Gross profit	578	585	721	633	644
Selling and administrative expenses	275	282	326	297	281
Research and technical expenses	53	58	60	68	72
Purification Solutions long-lived assets impairment charge	—	210	—	—	—
Purification Solutions goodwill impairment charge	—	352	—	—	—
Income (loss) from operations	250	(317)	335	268	291
Net interest expense and other charges[1]	(56)	(60)	(27)	(58)	(45)
Income (loss) from continuing operations [2]	194	(377)	308	210	246
(Provision) benefit for income taxes [3]	(34)	45	(92)	(60)	(55)
Equity in earnings of affiliated companies	3	4	—	11	11
Income (loss) from discontinued operations, net of tax	1	2	2	(1)	204
Net income (loss)	164	(326)	218	160	406
Net income attributable to noncontrolling interests, net of tax	15	8	19	7	18
Net income (loss) attributable to Cabot Corporation	$149	$(334)	$199	$153	$388
Common Share Data					
Diluted net income (loss) attributable to Cabot Corporation:					
Income (loss) from continuing operations	$2.34	$(5.29)	$3.01	$2.37	$2.84
Income (loss) from discontinued operations	0.02	0.02	0.02	(0.01)	3.15
Net income (loss) attributable to Cabot Corporation	$2.36	$(5.27)	$3.03	$2.36	$5.99
Dividends	$1.04	$0.88	$0.84	$0.80	$0.76
Closing prices	$52.41	$31.56	$50.77	$42.71	$36.57
Weighted-average diluted shares outstanding—millions	62.9	63.4	65.1	64.5	64.2
Shares outstanding at year end—millions	62.2	62.5	64.4	64.0	63.3
Consolidated Financial Position					
Current assets	$1,089	$1,048	$1,364	$1,495	$1,443
Net property, plant, and equipment	1,290	1,383	1,581	1,600	1,547
Other assets	665	644	1,139	1,138	1,409
Total assets	$3,044	$3,075	$4,084	$4,233	$4,399
Current liabilities	$398	$441	$630	$844	$919
Long-term debt	918	970	1,004	1,020	1,172
Other long-term liabilities	356	326	386	286	369
Cabot Corporation stockholders’ equity	1,274	1,234	1,942	1,951	1,813
Noncontrolling interests	98	104	122	132	126
Total liabilities and stockholders’ equity	$3,044	$3,075	$4,084	$4,233	$4,399
Selected Financial Ratios					

Net debt to capitalization ratio[4]	35	%	41	%	33	%	36	%	40	%
Adjusted return on net assets[5]	11	%	9	%	10	%	9	%	12	%

[1] Net interest expense and other charges includes foreign currency activity as follows: a gain of $5 million for fiscal 2016, a loss of $8 million for fiscal 2015, a loss of $2 million for fiscal 2014, a gain of $2 million for fiscal 2013, and a loss of $2 million for fiscal 2012.

[2] Income (loss) from continuing operations includes certain items as presented in the table below. A discussion of certain items is included in Definition of Terms and Non-GAAP Financial Measures in Results of Operations.

	Years Ended September 30				
	2016	2015	2014	2013	2012
	(Dollars in millions)				
Global restructuring activities (Note P)	$(47)	$(21)	$(29)	$(35)	$(17)
Legal and environmental matters and reserves	(17)	—	(18)	(1)	(8)
Acquisition and integration-related charges	—	(5)	(7)	(21)	(26)
Employee benefit plan settlement and other charges (Note N)	—	(21)	—	—	—
Impairment of goodwill and long-lived assets of Purification Solutions (Note G)	—	(562)	—	—	—
Foreign currency (loss) gain on revaluations	(11)	(2)	(3)	3	—
Gain on existing investment in NHUMO	—	—	29	—	—
Inventory adjustment (Note E)	—	(6)	—	—	—
Executive transition costs	(6)	—	—	—	—
Certain items, pre-tax	$(81)	$(617)	$(28)	$(54)	$(51)
Tax-related certain items					
Tax impact of certain items[a]	$31	$94	$17	$10	$9
Tax impact of certain foreign exchange gains (losses)	—	—	—	(12)	1
Tax impact of non-deductible interest expense	—	—	—	—	(2)
Discrete tax items	—	13	(17)	11	11
Total tax-related certain items	31	107	—	9	19
Total certain items, net of tax	$(50)	$(510)	$(28)	$(45)	$(32)

[a] The tax impact of certain items is determined by (1) starting with the current and deferred income tax expense or benefit, included in Net income attributable to Cabot Corporation, and (2) subtracting the tax expense or benefit on "adjusted earnings". Adjusted earnings is defined as the pre-tax income attributable to Cabot Corporation excluding certain items. The tax expense or benefit on adjusted earnings is calculated by applying the operating tax rate, as defined under the section Definition of Terms and Non-GAAP Financial Measures in Results of Operations, to adjusted earnings.

[3] The Company's effective tax rate for fiscal 2016 was a provision of 18%, which included less than $1 million of discrete tax charges, composed of charges of $5 million for valuation allowances on beginning of the year tax balances partially offset by benefits of $3 million for a currency loss and $1 million each for the renewal of the U.S. research and experimentation credit and net tax settlements. The Company's effective tax rate for fiscal 2015 was a benefit of 12%, which included $13 million of discrete tax benefits composed of $7 million for tax settlements, $4 million for repatriation, and $2 million for the renewal of the U.S. research and experimentation credit. The Company's effective tax rate for fiscal 2014 was a provision of 30% which included net discrete charges of $17 million, composed of a $20 million charge for a valuation allowance, offset by $3 million of net tax benefit primarily related to tax settlements. The Company's effective tax rate for fiscal 2013 was a provision of 28% which included net discrete charges of $3 million, composed of a $13 million foreign currency related charge, offset by $10 million of net tax benefit related to tax settlements, renewal of the U.S. research and experimentation ("R&E") credit, and other miscellaneous tax items in the tax provision. The Company's effective tax rate for fiscal 2012 was a provision of 22% which includes net discrete tax benefits of $8 million from the release of a valuation allowance and $3 million from settlements and miscellaneous tax items.

[4] Net debt to capitalization ratio is calculated by dividing total debt (the sum of short-term and long-term debt less cash and cash equivalents) by total capitalization (the sum of Total stockholders' equity plus total debt).

(5) Adjusted return on net assets ("adjusted RONA") measures how effectively and efficiently the Company uses its operating assets to generate earnings. Return on net assets ("RONA") and adjusted RONA are not measures of financial performance under GAAP and should not be considered substitutes for measures of performance reported under GAAP. We believe adjusted RONA provides useful supplemental information to our investors because it allows investors to understand the basis on which management evaluates the Company's operational effectiveness and because it is a performance metric used in our equity incentive compensation program. We calculate "adjusted RONA" by dividing the most recent twelve months' adjusted net income (loss) (a non-GAAP numerator) by adjusted net assets (a non-GAAP denominator). In the numerator, we exclude from income (loss) from continuing operations as calculated under GAAP "certain items" net of tax. The items of expense and income we consider "certain items" are described in the discussion of Definition of Terms and Non-GAAP Financial Measures in Results of Operations. The denominator consists of our operating assets, which are: net property, plant and equipment; adjusted net working capital; assets held for rent; and investments in equity affiliates. We calculate the items in adjusted net assets using the most recent five quarters' average to normalize the impact of large inter-period movements (e.g. working capital movements caused by feedstock price volatility). Our calculation of adjusted RONA is as follows:

	Years Ended September 30				
	2016	2015	2014	2013	2012
	(Dollars in millions, except ratios)				
Return on Net Assets					
Income (loss) from continuing operations[a]	$163	$(328)	$216	$161	$202
Net assets[b]	1,372	1,338	2,064	2,083	1,939
Return on net assets	12%	(25%)	10%	8%	10%