

CECO ENVIRONMENTAL CORP
Form 10-K
March 09, 2018

UNITED STATES

SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

FORM 10-K

(Mark one)

Annual Report Pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934
For the fiscal year ended December 31, 2017

or

Transition Report Pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934
For the transition period from _____ to _____

Commission File No. 0-7099

CECO ENVIRONMENTAL CORP.

Delaware	13-2566064
(State or other jurisdiction of	(I.R.S. Employer
incorporation or organization)	Identification No.)

14651 North Dallas Parkway

Dallas, Texas	75254
(Address of principal executive offices)	(Zip Code)

Registrant's telephone number, including area code: (513) 458-2600

Securities registered under Section 12(b) of the Act:

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Title of Each Class	Name of Each Exchange on Which Registered
Common Stock, \$0.01 par value per share	The NASDAQ Stock Market LLC

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

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. 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 website, 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 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, a smaller reporting company, or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company," and "emerging growth company" in Rule 12b-2 of the Exchange Act. (check one)

Large Accelerated Filer	Accelerated Filer
Non-Accelerated Filer	Smaller reporting company
Emerging growth company	

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act.

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

The aggregate market value of voting and non-voting common stock held by non-affiliates of the registrant was \$277.5 million based upon the closing market price and shares of common stock outstanding as of June 30, 2017. For the purpose of the foregoing calculation only, all directors and executive officers of the registrant and owners of more than 10% of the registrant's common stock are assumed to be affiliates of the registrant. This determination of affiliate status is not necessarily conclusive for any other purpose.

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As of March 2, 2018, the registrant had 34,736,834 shares of common stock, par value \$0.01 per share, outstanding.

Documents Incorporated by Reference

Portions of the definitive Proxy Statement for the 2018 Annual Meeting of Stockholders, which is to be filed with the Securities and Exchange Commission within 120 days of the fiscal year ended December 31, 2017, are incorporated by reference into Part III of this Annual Report to the extent described herein.

CECO Corporation and Subsidiaries

ANNUAL REPORT ON FORM 10-K

For the year ended December 31, 2017

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CAUTIONARY NOTE REGARDING FORWARD-LOOKING STATEMENTS

This Annual Report on Form 10-K includes forward-looking statements within the meaning of the Securities Act of 1933 (the "Securities Act") and the Securities Exchange Act of 1934 (the "Exchange Act") which are intended to be covered by the safe harbor for "forward-looking statements" provided by the Private Securities Litigation Reform Act of 1995. Any statements contained in this Annual Report on Form 10-K, other than statements of historical fact, including statements about management's beliefs and expectations, are forward-looking statements and should be evaluated as such. These statements are made on the basis of management's views and assumptions regarding future events and business performance. We use words such as "believe," "expect," "anticipate," "intends," "estimate," "forecast," "project," "will," "plan," "should" and similar expressions to identify forward-looking statements. Forward-looking statements involve risks and uncertainties that may cause actual results to differ materially from any future results, performance or achievements expressed or implied by such statements. Potential risks and uncertainties, among others, that could cause actual results to differ materially are discussed under "Part I – Item 1A. Risk Factors" of this Annual Report on Form 10-K and include, but are not limited to: our ability to successfully realize the expected benefits of our restructuring program; our ability to successfully integrate acquired businesses and realize the synergies from acquisitions, as well as a number of factors related to our business, including economic and financial market conditions generally and economic conditions in CECO's service areas; dependence on fixed price contracts and the risks associated therewith, including actual costs exceeding estimates and method of accounting for contract revenue; fluctuations in operating results from period to period due to cyclicity or seasonality of the business; the effect of growth on CECO's infrastructure, resources, and existing sales; the ability to expand operations in both new and existing markets; the potential for contract delay or cancellation; liabilities arising from faulty services or products that could result in significant professional or product liability, warranty, or other claims; changes in or developments with respect to any litigation or investigation; failure to meet timely completion or performance standards that could result in higher cost and reduced profits or, in some cases, losses on projects; the potential for fluctuations in prices for manufactured components and raw materials; the substantial amount of debt incurred in connection with our acquisitions and our ability to repay or refinance it or incur additional debt in the future; the impact of federal, state or local government regulations; economic and political conditions generally; and the effect of competition in the environmental, energy and fluid handling and filtration industries. Many of these risks are beyond management's ability to control or predict. Should one or more of these risks or uncertainties materialize, or should the assumptions prove incorrect, actual results may vary in material aspects from those currently anticipated. Investors are cautioned not to place undue reliance on such forward-looking statements as they speak only to our views as of the date the statement is made. Furthermore, forward-looking statements speak only as of the date they are made. Except as required under the federal securities laws or the rules and regulations of the Securities and Exchange Commission, we undertake no obligation to update or review any forward-looking statements, whether as a result of new information, future events or otherwise.

PART I

Item 1. Business General

CECO Environmental is a global leader in industrial air quality and fluid handling serving the energy, industrial and other niche markets through an attractive asset-light business model. CECO provides innovative technology and application expertise that helps companies grow their businesses with safe, clean, and more efficient solutions to help protect our shared environment. CECO serves both established and emerging industries in regions around the world working to improve air quality, optimize the energy value chain, and provide customized engineered solutions in multiple applications that include oil and gas, power generation, water and wastewater, battery production, poly silicon fabrication, chemical and petrochemical processing, along with a wide range of other industries.

To achieve our mission of being a world-class global leader in the markets we serve and to maximize the availability, reliability and efficiency of our customers' operating assets, we continue to focus on increasing our recurring revenue stream from aftermarket parts and services, as well as continuously improving the efficiencies and capabilities of our technologies. CECO has over \$5 billion of installed equipment base with end users, which we target to expand and grow a higher recurring revenue of aftermarket products and services. We also continue to focus on operational excellence strategies as a central theme to improving our earnings and cash flows.

We believe we succeed in winning customer orders because of the relationships we have developed, the long history of performance and reliability of our systems and products, our ability to deliver products in compliance with our customers' needs and our advanced technical engineering capabilities on complex projects. We work closely with our customers to design, custom-engineer and fabricate our systems and products to meet their specific needs. Our customers include some of the largest natural gas processors, transmission and distribution companies, refineries, power generators, boiler manufacturers, compressor manufacturers, metals and minerals, industrial manufacturing, engineering and construction companies in the world. Reliable product performance, timely delivery, customer satisfaction and advanced engineering are critical in maintaining our competitive position.

CECO was incorporated in the State of New York in 1966 and reincorporated in the State of Delaware in January 2002. The Company has been publicly traded since January 1, 1978 and its common stock trades on the NASDAQ Stock Market under the symbol "CECE."

We operate through three reportable segments, as follows:

Energy Segment ("Energy")

Our Energy segment provides customized solutions for the power generation and petrochemical industry. This includes gas turbine exhaust systems, dampers and diverters, gas and liquid separation and filtration equipment, selective catalytic reduction ("SCR") and selective non-catalytic reduction ("SNCR") systems, acoustical components and silencers, secondary separators (nuclear plant reactor vessels) and expansion joints, the design and manufacture of technologies for flue gas and diverter dampers, non-metallic expansion joints, natural gas turbine exhaust systems, and silencer and precipitator applications, primarily for coal-fired and natural gas power plants, refining, oil production and petrochemical processing, as well as a variety of other industries.

Environmental Segment ("Environmental")

Our Environmental segment provides the design and manufacture of product recovery and air pollution control technologies that enable our customers to meet compliance targets for toxic emissions, fumes, volatile organic

compounds, process and industrial odors. These products and solutions include high efficiency and fluid catalytic cracking cyclone systems, scrubbers, regenerative thermal and catalytic oxidizers, dust collectors and baghouses, standard and engineered industrial ducting, fabric filters and cartridge collectors, ventilation and exhaust systems for emissions and contaminants, and process cooling systems for steel in rolling mills. This segment also provides component parts for industrial air systems and provides cost effective alternatives to traditional duct components, as well as custom metal engineered fabrication services. These products and services are applicable to a wide variety of industries.

Fluid Handling and Filtration Segment (“FHF”)

Our Fluid Handling and Filtration segment provides the design and manufacture of high quality pump, filtration and fume exhaust solutions. This includes centrifugal pumps for corrosive, abrasive and high temperature liquids, filter products for air and liquid filtration, precious metal recovery systems, carbonate precipitators, and technologically advanced air movement and exhaust systems. These products are applicable to a wide variety of industries, particularly the aquarium/aquaculture, plating and metal finishing, food and beverage, chemical/petrochemical, wastewater treatment, desalination and pharmaceutical markets.

Industry Overview

We serve a multi-billion dollar global market that is highly fragmented and serves various end markets including power generation, natural gas power plants, petrochemical processing, general industrial, refining, aquaculture and wastewater treatment.

We believe demand for our products and services will continue to be driven by the following factors:

• **Global Economic Conditions.** The Company's businesses are impacted by economic conditions around the globe. Higher economic growth and other factors that would increase industrial gross domestic product and capital expenditures are projected to impact the markets the Company serves and could affect the Company's businesses by increasing demand for the Company's products and services.

• **Worldwide Industrialization.** Global trade has increased significantly over the last decade and is driven by growth in emerging markets, including China and India, as well as other developing nations in Asia and the Europe, Middle East, and Africa ("EMEA") region. As a result of globalization, manufacturing that was historically performed domestically continues to migrate to lower cost countries. This movement of the manufacture of goods throughout the world increases demand for industrial ventilation products as new construction continues. We expect that more rigorous environmental regulations will be introduced to create a cleaner working environment and reduce environmental emissions as these economies evolve.

• **Natural Gas Infrastructure.** The natural gas industry consists of the exploration, production, processing, transportation, storage and distribution of natural gas. The International Energy Association ("IEA") projects a pronounced shift in Organization for Economic Cooperation and Development ("OECD") countries away from oil and coal towards natural gas and renewables. Natural gas continues to be the fuel of choice for the electrical power and industrial sectors in many of the world's regions, in part because of its lower carbon intensity compared with coal and oil, which makes it an attractive fuel source in countries where governments are implementing policies to reduce greenhouse gas emissions.

Natural gas delivery is a complex process that refines raw natural gas for industrial, commercial or residential uses. Initially, raw natural gas is extracted from the earth and cleansed of contaminants such as dirt and water at the well site. The natural gas is then transported through a gathering facility to a processing facility, where it is processed to meet quality standards set by pipeline and distribution companies, such as specified levels of solids, liquids and other gases. After processing, the natural gas is transmitted for storage or through an extensive network of pipelines to consumers.

• **Power Generation.** Power generation encompasses a broad range of activities related to the production of electricity. The primary types of fuel used to generate electricity are coal, natural gas and nuclear. In the United States, concerns about potential environmental regulations enhance the attractiveness of natural gas-fired power plants compared with coal-fired power plants, which generally have higher pollutant emission rates than natural gas-powered plants. Natural gas-fired power plants have lower initial capital needs and are more flexible in terms of operating times than coal plants.

• **Refining, Oil Production and Petrochemical Processing.** Refining, oil production and petrochemical processing involves the producing, refining and processing of fuels and chemicals for use in a variety of applications, such as gasoline, fertilizers and plastics. In response to increasing international demand for petrochemicals and refined products, companies are producing more products from new sources, constructing new refineries and petrochemical processing facilities as well as expanding existing facilities. In many cases, these new and expanded facilities must comply with stricter environmental regulations, which influence both choice of fuel and demand for systems to control exhaust emissions. These facilities use a broad range of our products and systems, including our SCR pollution reduction systems, oily water treatment systems and separation and filtration products and our fluid catalytic cracking cyclone technology.

•

Stringent Regulatory Environment. The adoption of increasingly stringent environmental regulations globally requires businesses to pay strict attention to environmental protection. Businesses and industries of all types from refineries, power, chemical processes, metals and minerals, energy market and industrial manufacturing must comply with these various international, federal, state and local government regulations or potentially face substantial fines or be forced to suspend production or alter their production processes. These increasingly stringent environmental regulations are a principal factor that drives our business.

These factors, individually or collectively, tend to cause increases in industrial capital spending that are not directly impacted by general economic conditions, expansion, or capacity increases. In contrast, favorable conditions in the economy generally lead to plant expansions and the construction of new industrial sites. However, in a weak economy, customers tend to lengthen the time from their initial inquiry to the purchase order, or defer purchases.

Strategy

Our goal is to become the global leader in environmental, energy, fluid handling and filtration products and services by delivering exceptional value for our customers, shareholders, and employees. Our core focus is:

- Sustainable Profitable Growth - Implement profitable ways to grow globally, both organically and inorganically, with premier technology and solutions in diverse end markets.
- Higher-Margin, Recurring Aftermarket Revenue Growth - Leverage \$5 billion installed equipment base to develop greater customer connectivity. Lead with services and establish a lifecycle relationship in order to maximize availability, reliability and efficiency of customers' operating assets. Will lower customers' total cost of ownership and improve value proposition resulting in pull-through opportunities.
- Expanding share in core markets - Leverage leading edge technology and create innovative integrated solutions for customers.
- Product, Service and Project Excellence - Create customer successes and build customer loyalty.
- Operational Excellence - Run smart, asset-light, and best-in-class with innovative operating processes in all that we do.
- Employee Development - Invest in employee training and development of our employees and build world-class general management and leadership.
- Global Market Coverage - Improve sales and manufacturing (internal and external) resources to expand customer base and increase revenues. Uncover new customer opportunities in diverse industries.
- Safety Leadership - Ensure employee safety through preventative safety practices.

Our strategy utilizes our resource capabilities to help customers meet specific regulatory requirements within their business processes through optimal design and integration, improvement of efficiencies, reduction in maintenance and extension of the life of our customer's infrastructure. Our engineering and design expertise in environmental, energy, and fluid handling and filtration, combined with our comprehensive suite of product and service offerings allow us to provide customers with a one-stop, cost-effective solution to meet their integrated abatement needs.

Competitive Strengths

Leading Market Position as a Complete Solution Provider. We believe we are a leading provider of critical solutions in the environmental, energy, and fluid handling and filtration industries. The multi-billion dollar global market is highly fragmented with numerous small and regional contracting firms separately supplying engineering services, fabrication, installation, testing and monitoring, products and spare parts. We offer our customers a complete end-to-end solution, including engineering and project management services, procurement and fabrication, construction and installation, aftermarket support, and sale of consumables, which allows our customers to avoid dealing with multiple vendors when managing projects.

Long-standing experience and customer relationships in growing industry. We have serviced the needs of our target markets for well over 50 years. Our extensive experience and expertise in providing diversified solutions enhances our overall customer relationships, and provides us with a competitive advantage in our markets relative to other companies in the industry. We believe this is evidenced by strong relationships with many of our world-class

customers. We believe no single competitor has the resources to offer a similar portfolio of product and service capabilities. We offer the depth of a large organization, while our lean organizational structure keeps us close to our customers and markets, allowing us to offer rapid and complete solutions in each unique situation.

Global Diversification and Broad Customer Base. The global diversity of our operations and customer base provides us with multiple growth opportunities. As of December 31, 2017, we had a diversified customer base of approximately 4,839 active customers across a range of industries. Our customers represent some of the largest refineries, power, chemical processes, metals and minerals, energy market and industrial manufacturing companies. We believe that the diversity of our customers and end markets mitigates our risk of a potential fluctuation or downturn in demand from any individual industry or particular customer. We believe we have the resources and capabilities to meet the needs of our customers as they upgrade and expand domestically as well as into new international markets. Once systems have been installed and a relationship has been established with the customer, we are often awarded repetitive service and maintenance business as the customers' processes change and modifications or additions to their systems become necessary.

Experienced Management and Engineering Team. Our senior management team has substantial experience in the environmental, energy, and fluid handling and filtration segments. The business experience of our management team enables us to pursue our strategy. Our senior management team is supported by a strong operating management team, which possesses extensive

operational and managerial experience. Our workforce includes approximately 231 engineers, designers, and project managers whose significant specialized industry experience and technical expertise enables them to have a deep understanding of the solutions that will best suit the needs of our customers. The experience and stability of our management, operating and engineering teams have been crucial to our growth, developing and maintaining customer relationships, and increasing our market share.

Disciplined Acquisition Program with Successful Integration. We believe that we have demonstrated an ability to successfully acquire and integrate companies with complementary product or service offerings. We will continue to seek and execute additional strategic acquisitions and focus on expanding our product service and breadth, as well as entering into new adjacent markets. We believe that the breadth and diversity of our products and services and our ability to deliver full solutions to various end markets provides us with multiple sources of stable growth and a competitive advantage relative to other players in the industry.

Expand Customer Base and Penetrate End Markets through Global Market Coverage. We constantly look for opportunities to gain new customers and penetrate geographic locations and end markets with existing products and services or acquire new product or service opportunities.

We intend to continue to expand our sales force, customer base, and end markets, and have continued to pursue potential attractive growth opportunities both domestically and globally, including international projects in Asia, South America, and EMEA.

Develop Innovative Solutions. We intend to continue to leverage our engineering and manufacturing expertise and strong customer relationships to develop new customized products to address the identified needs of our customers or a particular end market. We thoroughly analyze new product opportunities by considering projected demand for the product or service, price point, and expected operating costs, and only pursue those opportunities that we believe will contribute to earnings growth in the near-term. In addition, we continually improve our traditional technologies and adapt them to new industries and processes.

Maintain Strong Customer Focus. We enjoy a diversified customer base of approximately 4,839 active customers across a broad base of industries, including power, municipalities, chemical, industrial manufacturing, refining, petrochemical, metals, minerals and mining, hospitals and universities. We believe that there are multiple opportunities for us to expand our penetration of existing markets and customers.

Products and Services

We believe we are a leading provider of critical solutions to the environmental, energy, and fluid handling and filtration industries. We focus on engineering, designing, building, and installing systems that capture, clean and destroy airborne contaminants from industrial facilities as well as equipment that control emissions from such facilities, as well as fluid handling and filtration systems. We provide a wide spectrum of products and services including dampers and diverters, selective catalytic reduction and selective non-catalytic reduction systems, cyclonic technology, thermal oxidizers, filtration systems, scrubbers, fluid handling equipment and plant engineering services and engineered design build fabrication.

Project Design and Research and Development

We focus our development efforts on designing and introducing new and improved approaches and methodologies that produce better system performance for our customers, and often improve customer process performance. We produce specialized products that are often tailored to the specifications of a customer or application. We continually collaborate with our customers to develop the proper solution and ensure customer satisfaction.

The project development cycle may follow many different paths depending on the specifics of the job and end-market. The cycle normally takes between one and six months from concept and design to production, but may vary significantly depending on developments that occur during the process, including among others, the emergence of new environmental demands, changes in design specifications and ability to obtain necessary approvals.

Sales, Marketing and Support

Our global selling strategy is to provide a solutions-based approach by being a single source provider of technology products and services. The strategy involves expanding our scope of products and services through selective acquisitions and the formation of new business units that are then integrated. We believe this strategy provides a discernible competitive advantage. We execute this strategy by utilizing our portfolio of in-house technologies and those of third-party equipment suppliers. Many of these have been long standing relationships, which have evolved from pure supplier roles to value-added business partnerships. This enables us to leverage existing business with selective alliances of suppliers and application specific engineering expertise. Our products primarily compete on the basis of price, performance, speed of delivery, quality, customer support, and single source. Our value proposition to customers

is to provide competitively priced, customized solutions. Our industry-specific knowledge, accompanied by our product and service offerings, provides valuable synergies for design innovation.

We sell and market our products and services with our own direct sales force, including employees in the United States, the Netherlands, United Kingdom, Canada, United Arab Emirates, India, Mexico, China, and Singapore, in conjunction with outside sales representatives in North America, South America, EMEA, Asia, and India. We expect to continue expanding our sales and support capabilities and our network of outside sales representatives in key regions domestically and internationally.

Much of our marketing effort consists of individual visits to customers, dissemination of sales and advertising materials, such as product announcements, brochures, magazine articles, advertisements and cover or article features in trade journals and other publications. We also participate in public relations and promotional events, including industry tradeshow and technical conferences. We have an internal marketing organization that is responsible for these initiatives.

Our customer service organization or sales force provides our customers with technical assistance, use and maintenance information as well as other key information regarding their purchase. We also actively provide our customers with access to key information regarding changes and pending changes in environmental regulations as well as new product or service developments. We believe that maintaining a close relationship with our customers and providing them with the support they request improves their level of satisfaction and enables us to foresee their potential future product needs or service demands. Moreover, they can lead to sales of annual service and support contracts as well as consumables. Our website also provides our customers with online tools and technical resources.

Quality Assurance

In engineered systems, quality is defined as system performance. We review with our customers, before the contract is signed, the technical specification and the efficiency of the equipment that will be customized to meet their specific needs. We then review these same parameters internally to assure that warranties will be met. Standard project management and production management tools are used to help ensure that all work is done to specification and that project schedules are met. Equipment is tested at the site to ensure it is functioning properly.

Customers

We are not dependent upon any single customer, and no customer comprised 10% or more of our consolidated revenues for 2017, 2016 or 2015. We do not believe the loss of any one of our customers would have a material adverse effect on us.

Suppliers and Subcontractors

We purchase our raw materials and supplies from a variety of global sources. When possible, we directly secure angle iron and sheet plate products from steel mills, whereas other materials are purchased from a variety of steel service centers. Steel prices have been volatile, but we typically mitigate the risk of higher prices by including a “surcharge” on our standard products. On contract work, we mitigate the risk of higher prices by including the current price in our estimate and generally include price inflation clauses for protection.

We believe we have a good relationship with our suppliers and do not anticipate any difficulty in continuing to purchase such items on terms acceptable to us. We have not experienced difficulty in procuring a sufficient supply of materials in the past. We typically agree to billing terms with our suppliers ranging from net 30 to 45 days. To the extent that our current suppliers are unable or unwilling to continue to supply us with materials, we believe that we

would be able to obtain such materials from other suppliers on acceptable terms.

Typically, on turnkey projects, we subcontract manufacturing, electrical work, concrete work, controls, conveyors and insulation. We use subcontractors with whom we have good working relationships and review each project at the beginning and on an ongoing basis to help ensure that all work is being done according to our specifications. Subcontractors are generally paid when we are paid by our customers according to the terms of our contract with the customer. The Company's asset-light business model focuses on effective management of subcontractors, which allows the Company to achieve targeted working capital levels through reduction in certain assets and reduced capital expenditures.

Backlog

Backlog is a representation of the amount of revenue expected from complete performance of firm fixed-price contracts that have not been completed for products and services we expect to substantially deliver within the next 12 to 18 months. Our customers

may have the right to cancel a given order, although historically cancellations have been rare. Backlog was \$168.9 million and \$197.0 million as of December 31, 2017 and 2016, respectively. Substantially all 2016 backlog was completed in 2017. Most of the 2017 backlog is expected to be completed in 2018. Backlog is not defined by United States generally accepted accounting principles (“GAAP”) and our methodology for calculating backlog may not be consistent with methodologies used by other companies.

Competition

The markets we serve are highly fragmented with numerous small and regional participants. We believe no single company competes with us across the full range of our systems and products. Competition in the markets we serve is based on a number of considerations, including price, timeliness of delivery, technology, applications experience, know-how, reputation, product warranties and service. Demand for our product can vary period over period depending on conditions in the markets we serve. Revenue recognized during the period is correlated with the orders booked in prior periods. We believe our reputation, technical engineering capabilities and service differentiate us from many of our competitors, including those competitors who often offer products at a lower price.

Due to the size and shipping weight of many of our projects, localized manufacturing/fabrication capabilities are very important to our customers. As a result, competition varies widely by region and industry. The market for our engineered products is reasonably competitive and is characterized by technological change, continuously changing environmental regulations, and evolving customer requirements. We believe that the additional competitive factors in our markets include:

- performance track record in difficult plant applications;
- comprehensive portfolio of products with leading technology;
- solid brand recognition in the fluid handling market;
- ability to design standard and custom products that meet customers’ needs;
- ability to provide reliable solutions in a timely manner;
- quality customer service and support; and
- financial and operational stability, including reputation.

We believe we compete favorably with respect to these factors.

Government Regulations

We believe our operations are in material compliance with applicable environmental laws and regulations. We believe that changes in environmental laws and regulations create opportunity given the nature of our business.

We are subject to the requirements of the Occupational Safety and Health Administration (“OSHA”) and comparable state statutes. We believe we are in material compliance with OSHA and state requirements, including general industry standards, record keeping requirements and monitoring of occupational exposures. In general, we expect to increase our expenditures to comply with stricter industry and regulatory safety standards when needed. Although such expenditures cannot be accurately estimated at this time, we do not believe that they will have a material adverse effect on our financial position, results of operations or cash flows.

Intellectual Property

We rely on a combination of patent, trademark, copyright and trade secret laws, employee and third-party nondisclosure/confidentiality agreements and license agreements to protect our intellectual property. We sell most of our products under a number of registered trade names, brand names and registered trademarks, which we believe are widely recognized in the industry. While we hold patents within a number of our businesses, we do not view our

patents to be material to our business.

Financial Information about Geographic Areas

For 2017, 2016 and 2015, sales to customers outside the United States, including export sales, accounted for approximately 32%, 37% and 38%, respectively, of consolidated net sales. The largest portion of these sales were to Asian and European customers. Of consolidated long-lived assets, \$39.0 million and \$34.8 million were located outside of the United States as of December 31, 2017 and 2016, respectively. Our operations outside of the United States are subject to additional risks, which are fully described in “Item 1A. Risk Factors.” See Note 16 in the “Notes to Consolidated Financial Statements.”

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Employees

We had approximately 880 full-time and 20 part-time employees as of December 31, 2017. The facilities in Greensboro, North Carolina, Louisville, Kentucky, Columbia, Tennessee, and Telford, Pennsylvania are unionized except for selling, engineering, design, administrative and operating management personnel. None of our other employees are subject to any collective bargaining agreements. We consider our relationship with our employees to be satisfactory. In total, as of December 31, 2017, approximately 160 employees were represented by international or independent labor unions under various union contracts that expire at various intervals.

Executive Officers of the Registrant

The following are the executive officers of the Company as of March 2, 2018. The terms of all officers expire at the next annual meeting of the board of directors and upon the election of the successors of such officers.

Name	Age	Position with CECO
Dennis Sadlowski	57	Chief Executive Officer, President and Director
Matthew Eckl	37	Chief Financial Officer and Secretary
Paul Gohr	36	Chief Accounting Officer

Dennis Sadlowski has served as our Chief Executive Officer since June 2017 and as a director since May 2016. Mr. Sadlowski served as Interim Chief Executive Officer and President from January 2017 until his appointment as Chief Executive Officer in June 2017. Previously, he was the Chief Operating Officer of LSG Sky Chefs North America, a provider of food and food-related services for transportation providers, from April 2013 until March 2015. As Chief Operating Officer, Mr. Sadlowski oversaw operations across over 40 locations in North America and managed over 8,000 employees. Previously, Mr. Sadlowski served as the Chief Executive Officer of International Battery, an early stage green tech company focused on large format lithium ion batteries for the grid storage markets, from September 2011 until April 2012. Mr. Sadlowski worked at Siemens from July 2000 to March 2010, serving as the President & Chief Executive Officer of Siemens Energy & Automation, Inc. from July 2007 until October 2009, an operating subsidiary of the global manufacturer Siemens AG, where he had executive accountability for the company's global strategic direction, operating performance and marketplace success. His responsibilities at Siemens Energy & Automation included overseeing six operating divisions along with a combined sales organization, a number of wholly-owned subsidiaries and over 12,000 employees. Mr. Sadlowski has also previously worked at General Electric and Thomas & Betts. Mr. Sadlowski serves on the board of directors and audit committee of Trojan Battery, a privately-held global leader in deep cycle lead-acid batteries. Mr. Sadlowski earned a Bachelor's degree in Chemical and Nuclear Engineering from the University of California at Berkeley, and his Master's Degree in Business Administration from Seattle University.

Matthew Eckl has served as our Chief Financial Officer and Secretary since January 2017. Prior to joining the Company, Mr. Eckl served as Vice President, Finance – Energy Group at Gardner Denver, Inc. from 2012 until January 2017. In this role, he oversaw a \$1 billion revenue business group that designs, manufactures, markets and services pumps, fluid transfer equipment and engineered systems for oil & gas and petrochemical industries. Prior to joining Gardner Denver, Mr. Eckl served at various roles of increasing responsibility within General Electric Company, a global digital industrial company, from 2002 until 2012, where he worked with various business groups to integrate new acquisitions and streamline financial reporting processes.

Paul Gohr was appointed as the Chief Accounting Officer on May 16, 2017. Mr. Gohr previously served as our Vice President of Financial Reporting since joining the Company in September 2014. From 2004 to 2014, Mr. Gohr served at various roles of increasing responsibility within Grant Thornton LLP, a global public accounting firm, most recently as a Senior Manager of Audit Services. While at Grant Thornton LLP, Mr. Gohr served a broad base of both public and private companies with international operations, many of which were acquisitive in nature. Mr. Gohr is a Certified Public Accountant.

Available Information

We use the Investor Relations section of our website, www.cecoenviro.com, as a channel for routine distribution of important information, including news releases, investor presentations and financial information. We post filings as soon as reasonably practicable after they are electronically filed with, or furnished to, the United States Securities and Exchange Commission, or SEC, including our annual, quarterly, and current reports on Forms 10-K, 10-Q, and 8-K; proxy statements; and any amendments to those reports or statements. All such postings and filings are available on our website free of charge. The SEC also maintains a website, www.sec.gov, that contains reports, proxy and information statements and other information regarding issuers that file electronically with the SEC. The content on any website referred to in this Annual Report on Form 10-K is not incorporated by reference into this Annual Report on Form 10-K unless expressly noted.

Item 1A. Risk Factors

An investment in our securities involves a high degree of risk. You should carefully consider the risk factors described below, together with the other information included in this Annual Report on Form 10-K, before you decide to invest in our securities. The risks described below are the material risks of which we are currently aware; however, they may not be the only risks that we may face. Additional risks and uncertainties not currently known to us or that we currently view as immaterial may also impair our business. If any of these risks develop into actual events, it could materially and adversely affect our business, financial condition, results of operations and cash flows, and the trading price of your shares could decline and you may lose all or part of your investment.

Risks Related to Our Business and Industry

Our business may be adversely affected by global economic conditions.

A national or global economic downturn or credit crisis may have a significant negative impact on our financial condition, future results of operations and cash flows. Specific risk factors related to these overall economic and credit conditions include the following: customer or potential customers may reduce or delay their procurement or new product development; key suppliers may become insolvent resulting in delays for our material purchases; vendors and other third parties may fail to perform their contractual obligations; customers may be unable to obtain credit to finance purchases of our products and services; and certain customers may become insolvent. These risk factors could reduce our product sales, increase our operating costs, impact our ability to collect customer receivables, lengthen our cash conversion cycle and increase our need for cash, which would ultimately decrease our profitability and negatively impact our financial condition. They could also limit our ability to expand through acquisitions due to the tightening of the credit markets.

Our dependence upon fixed-price contracts could adversely affect our operating results.

The majority of our projects are currently performed on a fixed-price basis. Under a fixed-price contract, we agree on the price that we will receive for the entire project, based upon a defined scope, which includes specific assumptions and project criteria. If our estimates of our own costs to complete the project are below the actual costs that we incur, our margins will decrease, and we may incur a loss. The revenue, cost and gross profit realized on a fixed-price contract will often vary from the estimated amounts because of unforeseen conditions or changes in job conditions and variations in labor and equipment productivity over the term of the contract. If we are unsuccessful in mitigating these risks, we may realize gross profits that are different from those originally estimated and incur reduced profitability or losses on projects. Depending on the size of a project, these variations from estimated contract performance could have a significant effect on our operating results. In general, turnkey contracts to be performed on a fixed-price basis involve an increased risk of significant variations. This is a result of the long-term nature of these contracts and the inherent difficulties in estimating costs and of the interrelationship of the integrated services to be provided under these contracts whereby unanticipated costs or delays in performing part of the contract can have compounding effects by increasing costs of performing other parts of the contract.

Percentage-of-completion method of accounting for contract revenue may result in material adjustments that would adversely affect our financial condition, results of operations and cash flows.

We recognize contract revenue for a substantial component of our business using the percentage-of-completion method on fixed price contracts. Under this method, for each contract, estimated contract revenue is calculated based generally on the percentage that actual direct costs to date are to total estimated direct costs. Estimated contract losses are recognized in full when determined. Accordingly, contract revenue and total direct cost estimates are reviewed and revised periodically as the work progresses and as change orders are approved, and adjustments based upon the percentage-of-completion are reflected in contract revenue in the period when these estimates are revised. These

estimates are based on management's reasonable assumptions and our historical experience, and are only estimates. Variation of actual results from these assumptions, which are outside the control of management and can differ from our historical experience, could be material. To the extent that these adjustments result in an increase, a reduction or the elimination of previously reported contract revenue, we would recognize a credit or a charge against current earnings, which could be material.

Our inability to deliver our backlog on time could affect our future sales and profitability, and our relationships with our customers.

Our backlog was \$168.9 million at December 31, 2017 from \$197.0 million at December 31, 2016. Our ability to meet customer delivery schedules for our backlog is dependent on a number of factors including, but not limited to, access to the raw materials required for production, an adequately trained and capable workforce, project engineering expertise for certain large projects,

sufficient internal manufacturing plant capacity, available subcontractors and appropriate planning and scheduling of manufacturing resources. Our failure to deliver in accordance with customer expectations may result in damage to existing customer relationships and result in the loss of future business. Failure to deliver backlog in accordance with expectations could negatively impact our financial performance and cause adverse changes in the market price of our common stock.

Volatility of oil and natural gas prices can adversely affect demand for our products and services

Volatility in oil and natural gas prices can also impact our customers' activity levels and spending for our products and services. Current energy prices are important contributors to cash flow for our customers and their ability to fund capital expenditure activities. Expectations about future prices and price volatility are important for determining future spending levels. Lower oil and natural gas prices generally lead to decreased spending by our customers. While higher oil and natural gas prices generally lead to increased spending by our customers, sustained high energy prices can be an impediment to economic growth, and can therefore negatively impact spending by our customers. Our customers also take into account the volatility of energy prices and other risk factors by requiring higher returns for individual projects if there is a higher perceived risk. Any of these factors could affect the demand for oil and natural gas and could have a material effect on our results of operations.

Our financial performance may vary significantly from period to period, making it difficult to estimate future revenue.

Our annual revenues and earnings have varied in the past and are likely to vary in the future. Our contracts generally stipulate customer specific delivery terms and may have contract cycles of a year or more, which subjects these contracts to many factors beyond our control. In addition, contracts that are significantly larger in size than our typical contracts tend to intensify their impact on our annual operating results. Furthermore, as a significant portion of our operating costs are fixed, an unanticipated decrease in our revenues, a delay or cancellation of orders in backlog, or a decrease in the demand for our products, may have a significant impact on our annual operating results. Therefore, our annual operating results may be subject to significant variations and our operating performance in one period may not be indicative of our future performance.

Customers may cancel or delay projects. As a result, our backlog may not be indicative of our future revenue.

Customers may cancel or delay projects for reasons beyond our control. Our orders normally contain cancellation provisions that permit us to recover our costs, and, for most contracts, a portion of our anticipated profit in the event a customer cancels an order. If a customer elects to cancel an order, we may not realize the full amount of revenues included in our backlog. If projects are delayed, the timing of our revenues could be affected and projects may remain in our backlog for extended periods of time. Revenue recognition occurs over long periods of time and is subject to unanticipated delays. If we receive relatively large orders in any given quarter, fluctuations in the levels of our quarterly backlog can result because the backlog in that quarter may reach levels that may not be sustained in subsequent quarters. As a result, our backlog may not be indicative of our future revenues. With rare exceptions, we are not issued contracts until a customer is ready to start work on a project. Thus, it is our experience that the only relation between the length of a project and the possibility that a project may be cancelled is simply the fact that there is more time involved. In a year-long project as opposed to a three-month project more time is available for the customer to experience a softening in their business, which may cause the customer to cancel a project.

We face significant competition in the markets we serve.

All of the industries in which we compete are highly competitive and highly fragmented. We compete against a number of local, regional and national contractors and manufacturers in each of our product or service lines, many of which have been in existence longer than us and some of which have substantially greater financial resources than we

do. Our products primarily compete on the basis of price, performance, speed of delivery, quality, customer support and single source. Any failure by us to compete effectively in the markets we serve could have a material adverse effect on our financial condition, results of operations and cash flows.

We may incur material costs as a result of existing or future product liability claims, or other claims and litigation that could adversely affect our financial condition, results of operations and cash flows; and our insurance coverage may not cover all claims or may be insufficient to cover the claims.

Despite our quality assurance measures, we may be exposed to product liability claims, other claims and litigation in the event that the use of our products results, or is alleged to result, in bodily injury and/or property damage or our products actually or allegedly fail to perform as expected. Such claims may also be accompanied by fraud and deceptive trade practices claims. While we maintain insurance coverage with respect to certain product liability and other claims, we may not be able to obtain such insurance on acceptable terms in the future, if at all, and any such insurance may not provide adequate coverage against product liability and other claims. Furthermore, our insurance may not cover damages from breach of contract by us or based on alleged fraud or deceptive trade practices. Any future damages that are not covered by insurance or are in excess of policy limits could have a material adverse effect

on our financial condition, results of operations and cash flows. In addition, product liability and other claims can be expensive to defend and can divert the attention of management and other personnel for significant periods of time, regardless of the ultimate outcome.

An unsuccessful defense of a product liability or other claim could have an adverse effect on our financial condition, results of operations and cash flows. Even if we are successful in defending against a claim relating to our products, claims of this nature could cause our customers to lose confidence in our products and us.

Liability to customers under warranties may adversely affect our reputation, our ability to obtain future business and our earnings.

We provide certain warranties as to the proper operation and conformance to specifications of the products we manufacture or produce. Failure of our products to operate properly or to meet specifications may increase our costs by requiring additional engineering resources and services, replacement of parts and equipment or monetary reimbursement to customers. We have in the past received warranty claims, are currently subject to warranty claims, and we expect to continue to receive claims in the future. To the extent that we incur substantial warranty claims in any period, our reputation, our ability to obtain future business and our earnings could be adversely affected.

If we do not develop improved products and new products in a timely manner in response to industry demands, our business and revenues will be adversely affected.

Our industry is characterized by ongoing technological developments and changing customer requirements. As a result, our success and continued growth depend, in part, on our ability in a timely manner to develop or acquire rights to, and successfully introduce into the marketplace, enhancements of existing products and new products that incorporate technological advances, meet customer requirements and respond to products developed by our competition. We cannot assure you that we will be successful in developing or acquiring such rights to products on a timely basis or that such products will adequately address the changing needs of the marketplace.

Our business can be significantly affected by changes in technology and regulatory standards.

The markets that the Company serves are characterized by changing technology, competitively imposed process standards and regulatory requirements, each of which influences the demand for our products and services. Changes in legislative, regulatory or industrial requirements may render certain of our products and processes obsolete. Acceptance of new products and services may also be affected by the adoption of new government regulations requiring stricter standards. Our ability to anticipate changes in technology and regulatory standards and to respond with new and enhanced products on a timely basis will be a significant factor in our ability to grow and to remain competitive. We cannot guarantee that we will be able to achieve the technological advances that may be necessary for us to remain competitive or that certain of our products or services will not become obsolete.

Changes in current environmental legislation could have an adverse impact on the sale of our environmental control systems and products and on our financial condition, results of operations and cash flows.

Our business is primarily driven by capital spending, clean air rules, plant upgrades by our customers to comply with laws and regulations governing the discharge of pollutants into the environment or otherwise relating to the protection of the environment or human health. These laws include, but are not limited to, United States federal statutes such as Resource Conservation and Recovery Act of 1976, the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, the Clean Water Act, the Clean Air Act, the Clean Air Interstate Rule, and the regulations implementing these statutes, as well as similar laws and regulations at state and local levels and in other countries. These United States laws and regulations may change and other countries may not adopt similar laws and

regulations. Our business may be adversely impacted to the extent that environmental regulations are repealed, amended, implementation dates are delayed, or to the extent that regulatory authorities reduce enforcement.

Our operations outside of the United States are subject to political, investment and local business risks.

For the year ended December 31, 2017, approximately 32% of our total revenue was derived from products or services ultimately delivered or provided to end-users outside the United States. As part of our operating strategy, we intend to expand our international operations through internal growth and selected acquisitions. Operations outside of the United States, particularly in emerging markets, are subject to a variety of risks that are different from or are in addition to the risks we face within the United States. Among others, these risks include:

- local, economic, political and social conditions, including potential hyperinflationary conditions and political instability in certain countries;
- imposition of limitations on the remittance of dividends and payments by foreign subsidiaries;
- adverse currency exchange rate fluctuations, including significant devaluations of currencies;
- tax-related risks, including the imposition of taxes and the lack of beneficial treaties, that result in higher effective tax rates for us;
- difficulties in enforcing agreements and collecting receivables through certain foreign local systems;
- domestic and foreign customs, tariffs and quotas or other trade barriers;
- increased costs for transportation and shipping;
- difficulties in protecting intellectual property;
- risk of nationalization of private enterprises by foreign governments;
- managing and obtaining support and distribution channels for overseas operations;
 - hiring and retaining qualified management personnel for our overseas operations;
- legal and regulatory requirements, including import, export, defense regulations and foreign exchange controls;
- imposition or increase of restrictions on investment;
- disadvantages of competing against companies from countries that are not subject to United States laws and regulations, including the Foreign Corrupt Practice Act (“FCPA”);
- required compliance with a variety of local laws and regulations, which may differ materially from those to which we are subject in the United States; and
- increasingly complex laws and regulations concerning privacy and data security, including the European Union’s General Data Protection Regulations.

In addition, we could be adversely affected by violations of the FCPA and similar worldwide anti-bribery laws as well as export controls and economic sanction laws. The FCPA and similar anti-bribery laws in other jurisdictions generally prohibit companies and their intermediaries from making improper payments to non-United States officials for the purposes of obtaining or retaining business. Our policies mandate compliance with these laws. We operate in many parts of the world that have experienced governmental corruption to some degree and, in certain circumstances, strict compliance with anti-bribery laws may conflict with local customs and practices. We cannot assure you that our internal controls and procedures will always protect us from reckless or criminal acts committed by our employees or agents. If we are found to be liable for FCPA, export control or sanction violations, we could suffer from criminal or civil penalties or other sanctions, including loss of export privileges or authorization needed to conduct aspects of our international business, which could have a material adverse effect on our business.

The occurrence of one or more of the foregoing factors could have a material adverse effect on our international operations or upon our financial condition, results of operations and cash flows.

Increasing costs for manufactured components, raw materials, transportation, health care and energy prices may adversely affect our profitability.

We use a broad range of manufactured components and raw materials in our products, including raw steel, steel-related components, filtration media, and equipment such as fans and motors. Materials and subcontracting costs comprise the largest components of our total costs. Further increases in the price of these items could further materially increase our operating costs and materially adversely affect our profit margins. Similarly, transportation, steel and health care costs have risen steadily over the past few years and represent an increasing burden for us. Although we try to contain these costs whenever possible, and although we try to pass along increased costs in the form of price increases to our customers, we may be unsuccessful in doing so, and even when successful, the timing of such price increases may lag significantly behind our incurrence of higher costs.

Our gross margins are affected by shifts in our product mix.

Certain of our products have higher gross profit margins than others. Consequently, changes in the product mix of our sales from quarter-to-quarter or from year-to-year can have a significant impact on our reported gross profit margins. Certain of our products also have a much higher internally manufactured cost component. Therefore, changes from quarter-to-quarter or from year-to-year can have a significant impact on our reported gross margins. In addition, contracts with a higher percentage of subcontracted work or equipment purchases may result in lower gross profit margins.

Our manufacturing operations are dependent on third-party suppliers.

Although we are not dependent on any one supplier, we are dependent on the ability of our third-party suppliers to supply our raw materials, as well as certain specific component parts. The third-party suppliers upon which we depend may default on their obligations to us due to bankruptcy, insolvency, lack of liquidity, adverse economic conditions, operational failure, fraud, loss of key personnel, or other reasons. We cannot assure you that our third-party suppliers will dedicate sufficient resources to meet our scheduled delivery requirements or that our suppliers will have sufficient resources to satisfy our requirements during any period of sustained demand. Failure of suppliers to supply, or delays in supplying, our raw materials or certain components, or allocations in the supply of certain high demand raw components could materially adversely affect our operations and ability to meet our own delivery schedules on a timely and competitive basis. Additionally, our third-party suppliers may provide us with raw materials or component parts that fail to meet our expectations or the expectations of our customers, which could subject us to product liability claims, other claims and litigation.

Our use of subcontractors could potentially harm our profitability and business reputation.

Occasionally we act as a prime contractor in some of the engineered projects we undertake. In our capacity as lead provider and when acting as a prime contractor, we perform a portion of the work on our projects with our own resources and typically subcontract activities such as manufacturing, electrical work, concrete work, insulation, conveyors and controls. In our industry, the lead contractor is normally responsible for the performance of the entire contract, including subcontract work. Thus, when acting as a prime contractor, we are subject to risk associated with the failure of one or more subcontractors to perform as anticipated.

We employ subcontractors at various locations around the world to meet our customers' needs in a timely manner, meet local content requirements and reduce costs. Subcontractors generally perform the majority of our manufacturing for international customers. We also utilize subcontractors in North America. The use of subcontractors decreases our control over the performance of these functions and could result in project delays, escalated costs and substandard quality. These risks could adversely affect our profitability and business reputation. In addition, many of our

competitors, who have greater financial resources and greater bargaining power than we have, use the same subcontractors that we use and could potentially influence our ability to hire these subcontractors. If we were to lose relationships with key subcontractors, our business could be adversely impacted.

A significant portion of our accounts receivable are related to larger contracts, which increases our exposure to credit risk.

We closely monitor the credit worthiness of our customers. Significant portions of our sales are to customers who place large orders for custom products and whose activities are related to the power and oil/gas industries. As a result, our exposure to credit risk is affected to some degree by conditions within these industries and governmental and/or political conditions. We frequently attempt to reduce our exposure to credit risk by requiring progress payments and letters of credit. However, the continuing economic climate and other unanticipated events that affect our customers could have a materially adverse impact on our operating results.

Changes in billing terms can increase our exposure to working capital and credit risk.

Our products are generally sold under contracts that allow us to bill upon the completion of certain agreed upon milestones or upon actual shipment of the product, and certain contracts include a retention provision. We attempt to negotiate progress-billing milestones on all large contracts to help us manage the working capital and credit risk associated with these large contracts. Consequently, shifts in the billing terms of the contracts in our backlog from period to period can increase our requirement for working capital and can increase our exposure to credit risk.

Currency fluctuations may reduce profits on our foreign sales or increase our costs, either of which could adversely affect our financial results.

Given that approximately 32% of our revenues are outside the United States, we are subject to fluctuations in foreign currency exchange rates. Translation losses resulting from currency fluctuations may adversely affect the profits from our operations and have a negative impact on our financial results. Foreign currency fluctuations may also make our systems and products more expensive for our customers, which could have a negative impact on our sales. In addition, we purchase some foreign-made products directly from and through our subcontractors. Due to the multiple currencies involved in our business, foreign currency positions partially offset and are netted against one another to reduce exposure. We cannot assure that fluctuations in foreign currency exchange rates will not make these products more expensive to purchase. Increases in our direct or indirect cost of purchasing these products could negatively impact our financial results if we are not able to pass those increased costs on to our customers.

If our goodwill or intangibles become impaired, we may be required to recognize charges that would reduce our net income or increase our net loss.

As of December 31, 2017, goodwill and indefinite lived intangibles represented \$186.6 million, or 42.6%, of our total assets. Goodwill and indefinite lived intangible assets are not amortized, but instead are subject to annual impairment evaluations (or more frequently if circumstances require). Major factors that influence our evaluations are our estimates for future revenue and expenses associated with the specific intangible asset or the reporting unit in which our goodwill resides. This is the most sensitive of our estimates related to our evaluations. Other factors considered in our evaluations include assumptions as to the business climate, industry and economic conditions. These assumptions are subjective and different estimates could have a significant impact on the results of our analyses. While management, based on current forecasts and outlooks, believes that the assumptions and estimates are reasonable, we can make no assurances that future actual operating results will be realized as planned and that there will not be material impairment charges as a result. In particular, an economic downturn could have a material adverse impact on our customers thereby forcing them to reduce or curtail doing business with us and such a result may materially affect the amount of cash flow generated by our future operations. Any write-down of goodwill or intangible assets resulting from future periodic evaluations would, as applicable, either decrease our net income or increase our net loss and those decreases or increases could be material.

We may incur costs as a result of certain restructuring activities, which may negatively impact our financial results, and we may not achieve some or all of the expected benefits of our restructuring plans.

We are continuously seeking the most cost-effective means and structure to serve our customers, protect our shareholders and respond to changes in our markets. Beginning in the fourth quarter of 2017, as part of our ongoing effort to drive efficiencies throughout our organization, we engaged in restructuring activities as part of an ongoing

and comprehensive review of our organizational structure, primarily within our Energy segment due to end market dynamics. In connection with these restructuring activities, our business will occasionally incur restructuring costs. From time to time, we may continue to engage in restructuring activities in an effort to improve cost competitiveness and profitability. We may not achieve the desired or anticipated benefits from these restructuring activities. As a result, restructuring costs may vary significantly from year to year depending on the scope of such activities. Such restructuring costs and expenses could adversely impact our financial results.

Changes in laws or regulations or the manner of their interpretation or enforcement could adversely impact our financial performance and restrict our ability to operate our business or execute our strategies.

New laws or regulations, or changes in existing laws or regulations, or the manner of their interpretation or enforcement, could increase our cost of doing business and restrict our ability to operate our business or execute our strategies. In particular, there may be significant changes in U.S. laws and regulations and existing international trade agreements by the current U.S. presidential administration that could affect a wide variety of industries and businesses, including those businesses we own and operate. If the current U.S. presidential administration materially modifies U.S. laws and regulations and international trade agreements, our business, financial condition, and results of operations could be adversely affected.

On December 22, 2017, U.S. tax reform legislation informally known as the Tax Cuts and Jobs Act (the "Tax Act") was signed into law. The Tax Act makes substantial changes to U.S. tax law, including a reduction in the corporate tax rate, a limitation on deductibility of interest expense, a limitation on the use of net operating losses to offset future taxable income, the allowance of immediate expensing of capital expenditures, deemed repatriation of foreign earnings and significant changes to the taxation of foreign earnings going forward. We expect the Tax Act to have significant effects on us, some of which may be adverse. For example, we would expect impacts on the amount of tax expense and deferred tax assets and liabilities recognized in the financial statements. The extent of the impact remains uncertain at this time and is subject to any other regulatory or administrative developments including any regulations or other guidance promulgated by the U.S. Internal Revenue Service. The Tax Act contains numerous, complex provisions impacting U.S. multinational companies, and we continue to review and assess the legislative language and its potential impact on us.

We are party to asbestos-containing product litigation that could adversely affect our financial condition, results of operations and cash flows.

Our subsidiary, Met-Pro, beginning in 2002, began to be named in asbestos-related lawsuits filed against a large number of industrial companies including, in particular, those in the pump and fluid handling industries. In management's opinion, the complaints typically have been vague, general and speculative, alleging that Met-Pro, along with the numerous other defendants, sold unidentified asbestos-containing products and engaged in other related actions that caused injuries (including death) and loss to the plaintiffs. Counsel has advised that more recent cases typically allege more serious claims of mesothelioma. The Company's insurers have hired attorneys who, together with the Company, are vigorously defending these cases. Many cases have been dismissed after the plaintiff fails to produce evidence of exposure to Met-Pro's products. In those cases where evidence has been produced, the Company's experience has been that the exposure levels are low and the Company's position has been that its products were not a cause of death, injury or loss. The Company has been dismissed from or settled a large number of these cases. Cumulative settlement payments of all legal fees other than corporate counsel expenses from 2002 through December 31, 2017 for cases involving asbestos-related claims were \$1.3 million, of which \$1.2 million has been paid by the Company's insurers. The average cost per settled claim, excluding legal fees, was approximately \$28,000.

Based upon the most recent information available to the Company regarding such claims, there were a total of 218 cases pending against the Company as of December 31, 2017 (with Connecticut, New York, Pennsylvania and West Virginia having the largest number of cases), as compared with 229 cases that were pending as of December 31, 2016. During 2017, 51 new cases were filed against the Company, and the Company was dismissed from 56 cases and settled six cases. Most of the pending cases have not advanced beyond the early stages of discovery, although a number of cases are on schedules leading to, or are scheduled for trial. The Company believes that its insurance coverage is adequate for the cases currently pending against the Company and for the foreseeable future, assuming a continuation of the current volume, nature of cases and settlement amounts. However, the Company has no control over the number and nature of cases that are filed against it, nor as to the financial health of its insurers or their position as to coverage. The Company also presently believes that none of the pending cases will have a material adverse impact upon the Company's results of operations, liquidity or financial condition.

Our ability to obtain financing for future growth opportunities may be limited.

Our ability to execute our growth strategies may be limited by our ability to secure and retain additional financing on terms reasonably acceptable to us or at all. Certain of our competitors are larger companies that may have greater access to capital, and therefore, may have a competitive advantage over us should our access to capital be limited.

We have a substantial amount of indebtedness, and incurrence of additional indebtedness could adversely affect our ability to operate our business, remain in compliance with debt covenants, make payments on our debt and limit our

growth.

As of December 31, 2017, we had outstanding indebtedness of \$120.1 million. Our outstanding indebtedness could have important consequences for investors, including the following:

- it may be more difficult for us to satisfy our obligations with respect to our Credit Agreement, and any failure to comply with the obligations of any of the agreements governing any additional indebtedness, including financial and other restrictive covenants, could result in an event of default under such agreements;
- the covenants contained in our debt agreements, including our Credit Agreement, limit our ability to borrow money in the future for acquisitions, capital expenditures or to meet our operating expenses or other general corporate obligations;
- the amount of our interest expense may increase because a substantial portion of our borrowings are at variable rates of interest, which, if interest rates increase, could result in higher interest expense;

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- we may need to use a portion of our cash flows to pay principal and interest on our debt, which will reduce the amount of money we have for operations, working capital, capital expenditures, expansion, acquisitions or general corporate or other business activities;
- we may have a higher level of debt than some of our competitors, which could put us at a competitive disadvantage;
- we may be more vulnerable to economic downturns and adverse developments in our industry or the economy in general; and
- our debt level could limit our flexibility in planning for, or reacting to, changes in our business and the industry in which we operate.

Our ability to meet our expenses and debt obligations will depend on our future performance, which will be affected by financial, business, economic, regulatory and other factors. We will not be able to control many of these factors. We cannot be certain that our earnings will be sufficient to allow us to pay the principal and interest on our existing or future debt and meet our other obligations. If we do not have enough money to service our existing or future debt, we may be required to refinance all or part of our existing or future debt, sell assets, borrow more money or raise equity. We may not be able to refinance our existing or future debt, sell assets, borrow more money or raise equity on terms acceptable to us, if at all.

We might be unable to protect our intellectual property rights and our products could infringe the intellectual property rights of others, which could expose us to costly disputes.

Although we believe that our products do not infringe patents or violate the proprietary rights of others, it is possible that our existing patent rights may not be valid or that infringement of existing or future patents or proprietary rights may occur. In the event our products infringe patents or proprietary rights of others, we may be required to modify the design of our products or obtain a license for certain technology. We cannot guarantee that we will be able to do so in a timely manner, upon acceptable terms and conditions, or at all. Failure to do any of the foregoing could have a material adverse effect upon our business. Moreover, if our products infringe patents or proprietary rights of others, we could, under certain circumstances, become liable for damages, which also could have a material adverse effect on our business.

Risks related to our pension and other post-retirement plans may adversely impact our results of operations and cash flow.

Significant changes in actual investment return on pension assets, discount rates, and other factors may adversely affect our results of operations and pension contributions in future periods. GAAP requires that we calculate income or expense for the plans using actuarial valuations. These valuations reflect assumptions about financial markets and interest rates. We establish the discount rate used to determine the present value of the projected and accumulated benefit obligation at the end of each year based upon the available market rates for high quality, fixed-income investments. An increase in the discount rate would increase future pension expense and, conversely, a decrease in the discount rate would decrease future pension expense. Funding requirements for our United States pension plans may become more significant. The ultimate amounts to be contributed are dependent upon, among other things, interest rates, underlying asset returns and the impact of legislative or regulatory changes related to pension funding obligations. For a discussion regarding the significant assumptions used to estimate pension expense, including discount rate and the expected long-term rate of return on plan assets, and how our financial statements can be affected by pension plan accounting policies, see “Critical Accounting Policies” included in this Annual Report on Form 10-K in “Item 7. Management’s Discussion and Analysis of Financial Condition and Results of Operations.”

We may be subject to substantial withdrawal liability assessments in the future related to multiemployer pension plans to which certain of our subsidiaries make contributions pursuant to collective bargaining agreements.

Under applicable federal law, any employer contributing to a multiemployer pension plan that completely ceases participating in the plan while the plan is underfunded is subject to payment of such employer's assessed share of the aggregate unfunded vested benefits of the plan. In certain circumstances, an employer can be assessed a withdrawal liability for a partial withdrawal from a multiemployer pension plan. If any of these adverse events were to occur in the future, it could result in a substantial withdrawal liability assessment that could have a material adverse effect on our business, financial condition, results of operations or cash flows.

We rely on several key employees whose absence or loss could disrupt our operations or be adverse to our business.

We are highly dependent on the experience of our management in the continuing development of our operations. The loss of the services of certain of these individuals would have a material adverse effect on our business. Although we have employment and non-competition agreements with certain of our key employees, as a practical matter, those agreements will not assure the retention of our employees, and we may not be able to enforce all of the provisions in any employment or non-competition agreement. Our future

success will depend in part on our ability to attract and retain qualified personnel to manage our development and future growth. We cannot guarantee that we will be successful in attracting and retaining such personnel. Our failure to recruit additional key personnel could have a material adverse effect on our financial condition, results of operations and cash flows.

Work stoppages or similar difficulties could significantly disrupt our operations.

As of December 31, 2017, approximately 160 of our approximately 900 employees are represented by international or independent labor unions under various union contracts that expire from May 31, 2018 to May 31, 2020. It is possible that our workforce will become more unionized in the future. Although we consider our employee relations to generally be good, our existing labor agreements may not prevent a strike or work stoppage at one or more of our facilities in the future and we may be affected by other labor disputes. A work stoppage at one or more of our facilities may have a material adverse effect on our business. Unionization activities could also increase our costs, which could have an adverse effect on our profitability.

Additionally, a work stoppage at one of our suppliers could adversely affect our operations if an alternative source of supply were not readily available. Work stoppages by employees of our customers also could result in reduced demand for our products.

Failure to maintain adequate internal controls could adversely affect our business.

Under Section 404 of Sarbanes-Oxley, we are required to include in each of our Annual Reports on Form 10-K, a report containing our management's assessment of the effectiveness of our internal control over financial reporting and an attestation report of our independent auditor. These laws, rules and regulations continue to evolve and could become increasingly stringent in the future. We have undertaken actions to enhance our ability to comply with the requirements of Sarbanes-Oxley, including, but not limited to, the engagement of consultants, the documentation of existing controls and the implementation of new controls or modification of existing controls as deemed appropriate.

We continue to devote substantial time and resources to the documentation and testing of our controls, and to plan for and the implementation of remedial efforts in those instances where remediation is indicated. If we fail to maintain the adequacy of our internal controls, including remediating any material weaknesses or deficiencies in our internal controls, as such standards are modified, supplemented or amended in the future, we could be subject to regulatory actions, civil or criminal penalties or shareholder litigation. In addition, failure to maintain adequate internal controls could result in financial statements that do not accurately reflect our financial condition, results of operations and cash flows. We believe that the out-of-pocket costs, the diversion of management's attention from running our day-to-day operations and operational changes caused by the need to comply with the requirements of Section 404 will continue to be significant.

There are inherent limitations in all internal control systems over financial reporting, and misstatements due to error or fraud may occur and not be detected.

While we continue to take action to ensure compliance with the internal control, disclosure control and other requirements of Sarbanes-Oxley and the rules and regulations promulgated thereunder by the SEC, there are inherent limitations in our ability to control all circumstances. Our management, including our Chief Executive Officer and Chief Financial Officer, does not expect that our internal controls and disclosure controls can prevent all errors and all frauds. A control system, no matter how well conceived and operated, can provide only reasonable assurance that the objectives of the control system are met. In addition, the design of a control system must reflect the fact that there are resource constraints and the benefit of controls must be evaluated in relation to their costs. Because of the inherent limitations in all control systems, no evaluation of controls can provide absolute assurance that all control issues and

instances of fraud, if any, have been detected. These inherent limitations include the realities that judgments in decision-making can be faulty and that breakdowns can occur because of simple error or mistake. Further, controls can be circumvented by individual acts of some persons, by collusion of two or more persons, or by management override of the controls. The design of any system of controls also is based in part upon certain assumptions about the likelihood of future events, and there can be no assurance that any design will succeed in achieving its stated goals under all potential future conditions. Over time, a control may be inadequate because of changes in conditions or the degree of compliance with the policies or procedures may deteriorate. Because of inherent limitations in a cost-effective control system, misstatements due to error or fraud may occur and not be detected.

If we are not able to maintain the adequacy of our internal control over financial reporting, including any failure to implement required new or improved controls, or if we experience difficulties in their implementation, our business, financial condition and operating results could be harmed. We can give no assurances that any additional material weaknesses will not arise in the future due to our failure to implement and maintain adequate internal control over financial reporting.

We have made and may make future acquisitions or divestitures, which involve numerous risks that could impact our financial condition, results of operations and cash flows.

Our operating strategy has involved expanding or contracting our scope of products and services through selective acquisitions or divestitures and the formation or elimination of new business units that are then integrated or separated into or out of our growing family of turnkey system providers. We have acquired other businesses, product or service lines, assets or technologies that are complementary to our business. We may be unable to find or consummate future acquisitions at acceptable prices and terms. We continually evaluate potential acquisition opportunities in the ordinary course of business.

Although we conduct what we believe to be a prudent level of investigation regarding the operating and financial condition of the businesses, product or service lines, assets or technologies we purchase, an unavoidable level of risk remains regarding their actual operating and financial condition. Until we actually assume operating control of these businesses, product or service lines, assets or technologies, we may not be able to ascertain their actual value or understand potential liabilities. This is particularly true with respect to acquisitions outside the United States.

In addition, acquisitions of businesses may require additional debt or equity financing, resulting in additional leverage or dilution of ownership. Our Credit Agreement (“Credit Agreement”) contains certain covenants that limit, or which may have the effect of limiting, among other things, acquisitions, capital expenditures, the sale of assets and the incurrence of additional indebtedness.

Increased information technology security threats and more sophisticated and targeted computer crime could pose a risk to our systems, networks, and products.

Increased global information technology security threats and more sophisticated and targeted computer crime pose a risk to the security of our systems and networks and the confidentiality, availability and integrity of our data and communications. While we attempt to mitigate these risks by employing a number of measures, including employee training, comprehensive monitoring of our networks and systems, and maintenance of backup and protective systems, our systems, networks and products remain potentially vulnerable to advanced persistent threats. Depending on their nature and scope, such threats could potentially lead to the compromising of confidential information and communications, improper use of our systems and networks, manipulation and destruction of data, defective products, production downtimes and operational disruptions, which in turn could adversely affect our reputation, competitiveness and results of operations.

In addition, we could be subject to legal claims or proceedings, liability under laws that protect the privacy of personal information and regulatory penalties if confidential information relating to our employees or other parties is misappropriated from our systems and networks.

Risks Related to Our Common Stock

The market price of our common stock may be volatile or may decline regardless of our operating performance and investors may not be able to resell shares they purchase at their purchase price.

The stock market has experienced and may in the future experience volatility that has often been unrelated to the operating performance of particular companies. The market price of our common stock has experienced, and may continue to experience, substantial volatility. During the year ended December 31, 2017, the sales price of our common stock on the NASDAQ ranged from \$4.68 to \$14.46 per share. We expect our common stock to continue to be subject to fluctuations. Broad market and industry factors may adversely affect the market price of our common stock, regardless of our actual operating performance. Factors that could cause fluctuation in the common stock price

may include, among other things:

- actual or anticipated variations in quarterly operating results;
- adverse general economic conditions, including, but not limited to, withdrawals of investments in the stock markets generally or a tightening of credit available to potential acquirers of businesses, that result in a lower average prices being paid for public company shares and lower valuations being placed on businesses;
- other domestic and international macroeconomic factors unrelated to our performance;
- our failure to meet the expectations of the investment community;
- industry trends and the business success of our customers;
- loss of key customers;
- announcements of technological advances by us or our competitors;

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current events affecting the political and economic environment in the United States; conditions or trends in our industry, including demand for our products and services, technological advances and governmental regulations; litigation or other proceedings involving or affecting us; and additions or departures of our key personnel.

The realization of any of these risks and other factors beyond our control could cause the market price of our common stock to decline significantly.

We are not currently paying dividends and cannot make assurances that we will pay dividends on our common stock and our indebtedness could limit our ability to pay dividends.

The timing, declaration, amount and payment of future dividends to our shareholders fall within the discretion of our Board of Directors and will depend on many factors, including our financial condition, results of operations and capital requirements, as well as applicable law, regulatory constraints, industry practice and other business considerations that our Board of Directors considers relevant. There can be no assurance that we will pay a dividend in the future.

Additionally, if we cannot generate sufficient cash flow from operations to meet our debt payment obligations, then our ability to pay dividends, if so determined by the Board of Directors will be impaired and we may be required to attempt to restructure or refinance our debt, raise additional capital or take other actions such as selling assets, or reducing or delaying capital expenditures. There can be no assurance, however, that any such actions could be undertaken on satisfactory terms, if at all, or would be permitted by the terms of our debt or our other credit and contractual arrangements.

The number of shares of our common stock eligible for future sale could adversely affect the market price of our stock.

We have reserved 1.9 million shares of our common stock for issuance under our 2017 Equity Incentive Plan (the "2017 Plan"), which may include option grants, stock grants, performance unit grants and restricted stock grants. We had outstanding options to purchase approximately 589,000 shares of our common stock and 263,000 outstanding restricted stock units under our 2007 Equity Incentive Plan (the "2007 Plan"), and outstanding options to purchase approximately 67,000 shares of our common stock and 291,000 outstanding restricted stock units under our 2017 Plan as of December 31, 2017. The shares under both plans are registered for resale on currently effective registration statements.

We may issue additional restricted securities or register additional shares of common stock under the Securities Act in the future. The issuance of a significant number of shares of common stock upon the exercise of stock options or warrants, vesting of restricted stock units, or the availability for sale, or resale, of a substantial number of the shares of common stock under registration statements, under Rule 144 or otherwise, could adversely affect the market price of our common stock.

One or more issuances of shares of our common stock under our stock incentive plan or securities in connection with financing transactions or the conversion of warrants will dilute current shareholders.

Pursuant to our stock incentive plan, we may grant stock awards to our employees, directors and consultants. Dilution will occur upon exercise of any outstanding stock awards convertible into or exchangeable or exercisable for common stock. Moreover, if we raise additional funds by issuing additional common stock, or securities, further dilution to our existing shareholders will result. In addition, we have historically issued warrants to purchase common shares in conjunction with business acquisitions, debt issuances and employment contracts, which may cause dilution when

exercised.

Our ability to issue preferred stock could adversely affect the rights of holders of our common stock.

Our certificate of incorporation authorizes us to issue up to 10,000 shares of preferred stock in one or more series on terms that may be determined at the time of issuance by our board of directors. Accordingly, we may issue shares of any series of preferred stock that would rank senior to our common stock as to voting or dividend rights or rights upon our liquidation, dissolution or winding up.

Certain provisions in our charter documents have anti-takeover effects.

Certain provisions of our certificate of incorporation and bylaws may have the effect of delaying, deferring or preventing a change in control of us. Such provisions, including those limiting who may call special shareholders' meetings, together with the possible issuance of our preferred stock without shareholder approval, may make it more difficult for other persons, without the

approval of our board of directors, to make a tender offer or otherwise acquire substantial amounts of our common stock or to launch other takeover attempts that a shareholder might consider to be in such shareholder's best interest.

Item 1B. Unresolved Staff Comments

Not Applicable.

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Item 2. Properties

The following facilities were owned or leased by the Company as of December 31, 2017.

Owned and Leased Locations	Type	Square Footage	Leased or Owned
Energy Segment:			
Moorpark, California	Sales	4,300	Leased
Cincinnati, Ohio	Manufacturing	96,400	Leased
Nunspeet, the Netherlands	Manufacturing	58,125	Leased
Nunspeet, the Netherlands	Sales	6,545	Leased
JiangYin City, People's Republic of China	Manufacturing	181,447	Leased
Montreal, Canada	Sales	3,514	Leased
Orchard Park, New York	Sales	17,900	Leased
Denton, Texas	Manufacturing	80,000	Leased
Monroe, Connecticut	Sales	8,825	Leased
Alberta, Canada	Sales	1,100	Leased
Dubai, United Arab Emirates	Sales	2,463	Leased
Dubai, United Arab Emirates	Sales	906	Leased
Singapore	Sales	4,643	Leased
Essex, United Kingdom	Sales	120	Leased
Zhenjiang, People's Republic of China	Held for Sale	175,000	Owned
Wichita Falls, Texas	Held for Sale	128,000	Owned
Michigan City, Indiana	Held for Sale	5,000	Owned
Environmental Segment:			
Anaheim, California	Sales	7,000	Leased
Wood Dale, Illinois	Sales/Warehouse	16,000	Leased
Lennon, Michigan	Sales/Warehouse	8,000	Leased
Louisville, Kentucky	Manufacturing	35,000	Owned
Louisville, Kentucky	Sales	5,450	Leased
Lebanon, Pennsylvania	Sales	4,221	Leased
Pittsburgh, Pennsylvania	Sales	4,000	Leased
Columbia, Tennessee	Manufacturing	34,800	Leased
Shanghai, People's Republic of China	Sales	270	Leased
Pune, India	Sales	678	Leased
Islandia, New York	Sales	8,178	Leased
Cambridgeshire, United Kingdom	Sales	1,600	Leased
Shanghai, People's Republic of China	Sales	5,608	Leased
Cincinnati, Ohio	Sales/Warehouse	53,210	Leased
Greensboro, North Carolina	Manufacturing	30,000	Leased
Fluid Handling and Filtration Segment:			
Telford, Pennsylvania	Manufacturing	93,500	Leased
Indianapolis, Indiana	Manufacturing	66,000	Leased
Pottstown, Pennsylvania	Sales/Warehouse	11,800	Leased
Heerenveen, the Netherlands	Manufacturing	34,000	Owned
Guangzhou, People's Republic of China	Manufacturing	17,168	Leased
Corporate offices:			
Cincinnati, Ohio	Administrative	7,000	Leased
Toronto, Canada	Administrative	4,000	Leased

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Wayne, Pennsylvania	Administrative	2,600	Leased
Dallas, Texas (a)	Administrative	18,267	Leased

(a) Location is also used by the Company's Energy Segment as a management office.

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It is anticipated that most leases coming due in the near future will be renewed at expiration. The property we own is subject to collateral mortgages to secure the amounts owed under the Credit Agreement. Our current capacity, with limited capital additions, is expected to be sufficient to meet production requirements for the near future. We believe our production facilities are suitable and can meet our future production needs.

Item 3. Legal Proceedings

See Note 13 “Commitments and Contingencies – Legal Proceedings” to the Consolidated Financial Statements contained in Part II, Item 8 of this Annual Report on Form 10-K for information regarding legal proceedings in which we are involved.

Item 4. Mine Safety Disclosures

Not applicable.

PART II

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

Market Information

Our common stock is traded on the NASDAQ under the symbol "CECE." The following table sets forth the high and low sales prices of our common stock as reported by the NASDAQ during the periods indicated.

	2017				2016			
	4 th	3 rd	2 nd	1 st	4 th	3 rd	2 nd	1 st
	Qtr.	Qtr.	Qtr.	Qtr.	Qtr.	Qtr.	Qtr.	Qtr.
High	\$9.41	\$10.69	\$12.03	\$14.46	\$14.88	\$11.75	\$8.87	\$7.85
Low	4.68	6.94	8.94	9.84	9.53	8.50	5.92	5.60

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Performance Graph

The following graph sets forth the cumulative total return to CECO's shareholders during the five years ended December 31, 2017, as well as the following indices: Russell 2000 Index, Standard and Poor's ("S&P") 600 Small Cap Industrial Machinery Index, and S&P 500 Index. Assumes \$100 was invested on December 31, 2012, including the reinvestment of dividends, in each category.

Dividends

Our dividend policy and the payment of cash dividends under that policy are subject to the Board of Director's continuing determination that the dividend policy and the declaration of dividends are in the best interest of our shareholders. On November 6, 2017, the Board of Directors reviewed the Company's dividend policy and determined that it would be in the best interest of the stockholders to suspend dividend payments. Future dividends and the dividend policy may be changed at the Board of Director's discretion at any time. Payment of dividends is also subject to the continuing compliance with our financial covenants under our Credit Agreement. During 2017 and 2016, our Board of Directors declared the following quarterly cash dividends on our common stock:

Dividend

Per Share	Record Date	Payment Date
\$0.075	September 15, 2017	September 29, 2017
\$0.075	June 16, 2017	June 30, 2017
\$0.075	March 17, 2017	March 31, 2017
\$0.066	December 16, 2016	December 30, 2016
\$0.066	September 16, 2016	September 30, 2016
\$0.066	June 18, 2016	June 30, 2016
\$0.066	March 18, 2016	March 31, 2016

Holdings

The approximate number of registered shareholders of record of our common stock as of March 2, 2018 was 328, although there are a larger number of beneficial owners.

Purchases of Equity Securities by the Issuer and Affiliated Purchasers

We did not repurchase any shares of our common stock during 2017.

Recent Sales of Unregistered Securities

Not applicable.

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Item 6. Selected Financial Data

(In thousands, except share and per share data)

	Year Ended December 31,				
	2017	2016	2015	2014	2013
Net sales	\$345,051	\$417,011	\$367,422	\$263,217	\$197,317
Gross profit	113,194	134,859	109,171	84,823	61,555
Amortization and earnout expenses	7,132	20,231	25,613	10,151	6,761
Intangible asset and goodwill impairment	7,168	57,923	3,340	—	—
Restructuring expenses	1,895	—	—	—	—
Income (loss) from operations	8,024	(25,562)	4,949	21,663	6,972
Net (loss) income	(3,029)	(38,254)	(5,734)	13,077	6,557
Net (loss) income attributable to CECO Environmental Corp.	(3,029)	(38,218)	(5,602)	13,077	6,557
Basic (loss) earnings per common share	\$(0.09)	\$(1.12)	\$(0.19)	\$0.51	\$0.33
Diluted (loss) earnings per common share	\$(0.09)	\$(1.12)	\$(0.19)	\$0.50	\$0.32
Weighted average shares outstanding – basic	34,445,256	33,979,549	28,791,662	25,750,972	20,116,991
Weighted average shares outstanding – diluted	34,445,256	33,979,549	28,791,662	26,196,901	20,719,951
Dividends declared per common share	\$0.225	\$0.264	\$0.264	\$0.230	\$0.200
Dividends paid	\$7,792	\$8,995	\$7,977	\$5,937	\$4,337
Total assets	\$438,549	\$498,634	\$598,819	\$412,107	\$349,210
Short-term debt	11,296	8,827	19,494	8,887	9,922
Long-term debt	103,537	114,366	157,834	102,969	79,160
Short-term capital lease and sale-leaseback financing liability	703	764	—	—	—
Long-term capital lease and sale-leaseback financing liability	11,880	12,533	—	—	—
Shareholders' equity	\$186,569	\$190,082	\$245,021	\$181,224	\$170,406

Results of operations from acquired businesses are included from the date of acquisition forward. The fair value of assets and liabilities, inclusive of changes resulting from operating the businesses, are included in the first period ended after the date of each acquisition, and all periods thereafter. Acquisitions consist of the following: (i) Aarding Thermal Acoustics B.V. (“Aarding”) in March 2013, (ii) Met-Pro in August 2013, (iii) HEE Environmental Engineering (“HEE”) in August 2014, (iv) SAT Technology, Inc. (“SAT”) in September 2014, (v) Emtrol LLC (“Emtrol”) in November 2014, (vi) Jiangyin Zhongli Industrial Technology Co. Ltd. (“Zhongli”) in December 2014, and (vii) PMFG in September 2015.

Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations

Management's discussion and analysis ("MD&A") should be read in conjunction with the consolidated financial statements and accompanying notes included in Item 8 of this Annual Report on Form 10-K, which include additional information about our accounting policies, practices and the transactions underlying our financial results. The preparation of our consolidated financial statements in conformity with GAAP requires us to make estimates and assumptions that affect the reported amounts in our consolidated financial statements and the accompanying notes including various claims and contingencies related to lawsuits, taxes, environmental and other matters arising during the normal course of business. We apply our best judgment, our knowledge of existing facts and circumstances and actions that we may undertake in the future in determining the estimates that affect our consolidated financial statements. We evaluate our estimates on an ongoing basis using our historical experience, as well as other factors we believe appropriate under the circumstances, such as current economic conditions, and adjust or revise our estimates as circumstances change. As future events and their effects cannot be determined with precision, actual results may differ from these estimates.

Overview

Business Overview

CECO Environmental is a global leader in industrial air quality and fluid handling serving the energy, industrial and other niche markets through an attractive asset-light business model. CECO provides innovative technology and application expertise that helps companies grow their businesses with safe, clean, and more efficient solutions to help protect our shared environment. CECO serves both established and emerging industries in regions around the world working to improve air quality, optimize the energy value chain, and provide customized engineered solutions in multiple applications that include oil and gas, power generation, water and wastewater, battery production, poly silicon fabrication, chemical and petrochemical processing, along with a wide range of other industries.

Industry Trends and Corporate Strategy

We are a global corporation with worldwide operations. As a global business, our operations are affected by worldwide, regional and industry-specific economic factors, wherever we operate or do business. Our geographic and industry diversity, and the breadth of our product and services portfolios, have helped mitigate the impact of any one industry or the economy of any single country on our consolidated operating results.

We believe growth for our products and services is driven by the increasing demand for energy consumption and a shift towards cleaner sources such as natural gas, nuclear, and renewable sources. These trends should stimulate investment in new power generation facilities, pipeline expansion and related infrastructure, and in upgrading of existing facilities.

With a shift to cleaner, more environmentally responsible power generation, power providers and industrial power consumers are building new facilities that use cleaner fuels. In developed markets, natural gas is increasingly becoming one of the energy sources of choice. We supply product offerings throughout the entire natural gas infrastructure value chain and believe expansion will drive growth within our Energy segment for our pressure products and SCR systems for natural-gas-fired power plants. Increased global natural gas production as a percent of total energy consumption, miles of new pipeline being added globally, and an increase in liquification capacity all stand to drive the need for our products.

We also believe there is a trend in both developed and emerging markets to control and reduce emissions of harsher fuel sources for which our air pollution control equipment is required. In emerging markets including China, India,

and South East Asia our business is positioned to benefit from tightening of air pollution standards. In developed markets, growth of industrialization will drive greater output of emissions requiring our equipment as well. In both markets, we expect capital expenditures for our equipment to increase and the need for our aftermarket services to grow as companies seek to meet new standards.

We continue to focus on increasing revenues and profitability globally while continuing to strengthen and expand our presence domestically. Our operating strategy has historically involved horizontally expanding our scope of technology, products, and services through selective acquisitions and the formation of new business units that are then vertically integrated into our growing group of turnkey system providers. Our continuing focus will be on global growth, market coverage, and expansion of our Asia operations. Operational excellence, margin expansion, after-market recurring revenue growth, and safety leadership are also critical to our growth strategy.

Operations Overview

During 2017, the Company concluded its strategic plan assessment and made several decisions to transform the business to win market share and create value. The Company implemented a restructuring program during the second half of 2017 to reduce costs by approximately \$7 million per annum and refocus the Company's portfolio including exiting non-core and low critical mass products. As a result of implementing the restructuring program, the Company incurred restructuring expenses of \$1.9 million in 2017. The Company also modified the debt covenants in 2017 within the Credit Agreement to allow for covenant flexibility to invest in a tough market cycle. Additionally, the Company's Board of Directors suspended the current quarterly dividend so that cash can be used towards investment for growth in people, systems and customer focused product innovation.

We operate under a "hub and spoke" business model in which executive management, finance, administrative and marketing staff serves as the hub while the sales channels serve as spokes. We use this model throughout our operations. This has provided us with certain efficiencies over a more decentralized model. The Company's segment presidents manage our division managers who are responsible for successfully running their operations, that is, sales, gross margins, manufacturing, pricing, purchasing, safety, employee development and customer service excellence. The segment presidents work closely with our Chief Executive Officer on global growth strategies, operational excellence, and employee development. The headquarters (hub) focuses on enabling the core back-office key functions for scale and efficiency, that is, accounting, payroll, human resources/benefits, information technology, safety support, internal control over financial reporting, and administration. We have excellent organizational focus from headquarters throughout our divisional businesses with clarity and minimal duplicative work streams.

Our three reportable segments are: the Energy segment, which produces customized solutions for the power and petrochemical industry, the Environmental segment, which provides a variety of air pollution control and catalytic product recovery technologies, and the Fluid Handling and Filtration segment, which produces high quality pump, filtration and fume exhaust solutions. It is through combining the efforts of some or all of these groups that we are able to offer complete turnkey systems to our customers and leverage operational efficiencies.

Our contracts are obtained either through competitive bidding or as a result of negotiations with our customers. Contract terms offered by us are generally dependent on the complexity and risk of the project as well as the resources that will be required to complete the project. Our focus is on increasing our operating margins as well as our gross margin percentage, which translates into higher net income.

Our cost of sales is principally driven by a number of factors, including material prices and labor cost and availability. Changes in these factors may have a material impact on our overall gross profit margins.

We break down costs of sales into five categories. They are:

• **Subcontracts**—Electrical work, concrete work, subcomponents and other subcontracts necessary to produce our products;

• **Labor**—Our direct labor both in the shop and in the field;

• **Material**—Raw material that we buy to build our products;

• **Equipment**—Fans, motors, control panels and other equipment necessary for turnkey systems; and

• **Factory overhead**—Costs of facilities and supervision wages necessary to produce our products.

In general, subcontracts provide us the most flexibility in margin followed by labor, material, and equipment. Across our various product lines, the relative relationships of these factors change and cause variations in gross margin percentage. Material costs have also increased faster than labor costs, which also reduces gross margin percentage. As material cost inflation occurs, the Company seeks to pass this cost onto our customers as price increases.

Selling and administrative expense principally includes sales payroll and related fringes, advertising and marketing expenditures as well as all corporate and administrative functions and other costs that support our operations. The majority of these expenses are fixed. We expect to leverage our fixed operating structure as we continue to grow our revenue.

Note Regarding Use of Non-GAAP Financial Measures

The Company's consolidated financial statements are prepared in accordance with GAAP. These GAAP financial statements include certain charges the Company believes are not indicative of its ongoing operational performance.

As a result, the Company provides financial information in this MD&A that was not prepared in accordance with GAAP and should not be considered as an alternative to the information prepared in accordance with GAAP. The Company provides this supplemental non-GAAP financial information, which the Company's management utilizes to evaluate its ongoing financial performance, and which the Company believes provides greater transparency to investors as supplemental information to its GAAP results.

The Company has provided the non-GAAP financial measures of non-GAAP gross profit and non-GAAP gross profit margin, non-GAAP operating income, non-GAAP operating margin, and non-GAAP net income attributable to CECO Environmental Corp. as a result of items that the Company believes are not indicative of its ongoing operations. These items include charges associated with the Company's acquisition and integration of acquisitions and the items described below in "Consolidated Results." The Company believes that evaluation of its financial performance compared with prior and future periods can be enhanced by a presentation of results that exclude the impact of these items. As a result of the Company's completed acquisitions, the Company has incurred substantial charges associated with the acquisition and integration. See Note 17 to the consolidated financial statements for further information. The Company has incurred additional charges related to its restructuring program that occurred in the fourth quarter of 2017. While the Company cannot predict the exact timing or amounts of such charges, it does expect to treat these charges as special items in its future presentation of non-GAAP results.

Results of Operations

Consolidated Results

Our consolidated statements of operations for the years ended December 31, 2017, 2016 and 2015 are as follows:

(dollars in millions)	Year ended		
	December 31, 2017	2016	2015
Net sales	\$345.1	\$417.0	\$367.4
Cost of goods sold	231.9	282.1	258.2
Gross profit	\$113.2	\$134.9	\$109.2
Percent of sales	32.8 %	32.4 %	29.7 %
Selling and administrative expenses	\$89.0	\$81.9	\$67.5
Percent of sales	25.8 %	19.6 %	18.4 %
Acquisition and integration expenses	\$—	\$0.5	\$7.9
Percent of sales	—	0.1 %	2.2 %
Amortization and earnout expenses	\$7.1	\$20.2	\$25.6
Percent of sales	2.1 %	4.8 %	7.0 %
Intangible asset and goodwill impairment	\$7.2	\$57.9	\$3.3
Percent of sales	2.1 %	13.9 %	0.9 %
Restructuring expenses	\$1.9	\$—	\$—
Percent of sales	0.6 %	—	—
Operating (loss) income	\$8.0	\$(25.6)	\$4.9
Percent of sales	2.3 %	(6.1)%	1.3 %

To compare operating performance between the years ended December 31, 2017, 2016 and 2015, the Company has adjusted GAAP operating income to exclude (1) executive transition expenses, including severance for its former Chief Executive Officer, fees incurred in the search for a new Chief Executive Officer, and expenses associated with hiring a new Chief Financial Officer, (2) acquisition and integration related expenses, including legal, accounting, and banking expenses, (3) amortization and contingent acquisition expenses, including amortization of acquisition related intangibles, retention, severance, and earnout expenses, (4) gain on insurance settlement, (5) facility exit expenses associated with the closure of certain leased facilities, (6) legacy design repair expenses related to costs to rectify issues on products that are no longer in production, (7) restructuring expenses primarily relating to severance, facility exit, legal and property, plant and equipment impairment, (8) intangible asset and goodwill impairment, and (9) inventory valuation and plant, property and equipment valuation adjustments related to acquisitions. See “Note Regarding Use of Non-GAAP Financial Measures” above. The following tables present the reconciliation of GAAP gross profit and GAAP gross profit margin to non-GAAP gross profit and non-GAAP gross profit margin, GAAP operating (loss) income and GAAP operating margin to non-GAAP operating income and non-GAAP operating margin, and GAAP net (loss) income attributable to CECO Environmental Corp. to non-GAAP net income attributable to CECO Environmental Corp.:

(dollars in millions)	Year Ended December 31,		
	2017	2016	2015
Gross profit as reported in accordance with GAAP	\$ 113.2	\$ 134.9	\$ 109.2
Gross profit margin in accordance with GAAP	32.8 %	32.4 %	29.7 %
Legacy design repairs	2.0	—	—
Inventory valuation adjustment	—	0.1	0.5
Plant, property and equipment valuation adjustment	0.6	0.6	0.6
Non-GAAP gross profit	\$ 115.8	\$ 135.6	\$ 110.3
Non-GAAP gross profit margin	33.6 %	32.5 %	30.0 %

(dollars in millions)	Year Ended December 31,		
	2017	2016	2015
Operating (loss) income as reported in accordance with GAAP	\$ 8.0	\$ (25.6)	\$ 4.9
Operating margin in accordance with GAAP	2.3 %	(6.1)%	1.3 %
Legacy design repairs	2.0	—	—
Inventory valuation adjustment	—	0.1	0.5
Plant, property and equipment valuation adjustment	0.6	0.6	0.6
Gain on insurance settlement	—	(1.0)	—
Acquisition and integration expenses	—	0.5	7.9
Amortization and earnout expenses	7.1	20.2	25.6
Intangible asset and goodwill impairment	7.2	57.9	3.3
Restructuring expenses	1.9	—	—
Executive transition expenses	1.3	—	—
Facility exit expenses	0.2	—	—
Non-GAAP operating income	\$ 28.3	\$ 52.7	\$ 42.8
Non-GAAP operating margin	8.2 %	12.6 %	11.6 %

(dollars in millions)	Year Ended December		
	31, 2017	2016	2015
Net loss attributable to CECO Environmental Corp. as reported in accordance with GAAP	\$(3.0)	\$(38.2)	\$(5.6)
Legacy design repairs	2.0	—	—
Inventory valuation adjustment	—	0.1	0.5
Plant, property and equipment valuation adjustment	0.6	0.6	0.6
Gain on insurance settlement	—	(1.0)	—
Acquisition and integration expenses	—	0.5	7.9
Amortization and earnout expenses	7.1	20.2	25.6
Intangible asset and goodwill impairment	7.2	57.9	3.3
Restructuring expenses	1.9	—	—
Executive transition expenses	1.3	—	—
Facility exit expenses	0.2	—	—
Deferred financing fee adjustment	—	—	0.3
Foreign currency remeasurement	(2.1)	0.8	2.5
Tax benefit of expenses	(5.7)	(7.4)	(7.1)
Non-GAAP net income attributable to CECO Environmental Corp.	\$9.5	\$33.5	\$28.0
Non-GAAP net income as a percentage of sales	2.7 %	8.0 %	7.6 %

Comparison of the years ended December 31, 2017 and 2016

Consolidated sales in 2017 were \$345.1 million compared with \$417.0 million in 2016, a decrease of \$71.9 million. The decrease is primarily attributable to a decline in demand for solid fuel power generation and natural gas turbine exhaust systems within the Company's Energy segment and a decline in demand for ventilation duct work and related equipment, and refinery related products within the Company's Environmental segment. These declines were partially offset by increased sales in the Company's Fluid Handling & Filtration segment.

Gross profit decreased by \$21.7 million, or 16.1%, to \$113.2 million in 2017 compared with \$134.9 million in 2016. Gross profit as a percentage of sales increased to 32.8% in 2017 compared with 32.4% in 2016. The decrease in gross profit was primarily attributable to a sales volume decline period over period. On an as adjusted basis, non-GAAP gross profit was \$115.8 million, or 33.6% as a percentage of sales for 2017, a decrease of \$19.8 million on a dollar basis compared with non-GAAP gross profit of \$135.6 million, or 32.5% as a percentage of sales in 2016. The higher gross profit margin in 2017 was primarily due to favorable project mix and was partially offset by the Company incurring \$3.0 million in warranty expense and \$2.0 million in legacy design repairs in 2017, compared with warranty expense of \$0.5 million during in 2016. The increase in warranty expense is primarily attributable to a legacy product design issue. The increase in legacy design repairs is primarily attributable to specific issues on certain pre-acquisition projects.

Selling and administrative expenses were \$89.0 million in 2017 compared with \$81.9 million in 2016. Selling and administrative expenses as a percentage of sales were 25.8% in 2017 compared with 19.6% in 2016. The increase is primarily attributable to executive transition expenses related to the Company's transition and search for a new Chief Executive Officer and expenses associated with the hiring of a new Chief Financial Officer of \$1.3 million in 2017, an increase of \$3.0 million of allowance for bad debt expense during 2017 compared with 2016 and additional investments in selling and finance personnel in 2017. Other factors leading to the increase are related to the Company recording gains of \$1.6 million during 2016, which consisted of \$1.0 million related to a life insurance settlement and \$0.6 million related to a warranty settlement received from an external service provider of the Company.

Acquisition and integration expenses were zero in 2017 and \$0.5 million in 2016. The acquisition and integration expenses in 2016 were related to the PMFG acquisition, which occurred during 2015.

Amortization and earnout expense was \$7.1 million in 2017 and \$20.2 million in 2016. The adjustment recorded to the fair value of the earnout from the Zhongli acquisition was \$6.6 million of income in 2017 and \$6.5 million of expense in 2016, respectively. The fair value adjustments to the earnout that were recorded in 2017 were the result of Zhongli performing below operational expectations set for 2017. The fair value adjustments to the earnout that were recorded in 2016 were the result of Zhongli performing above initial acquisition date operational expectations. Payments of the Zhongli earnout are based upon a multiple of specified financial results through December 31, 2017. Amortization expense was \$11.6 million and \$14.0 million in 2017 and 2016, respectively.

In 2017, after conducting the annual impairment testing for goodwill and indefinite lived intangible assets in 2017, the Company recorded a total impairment charge of \$7.2 million. A charge of \$4.5 million was recorded to fully impair the carrying value of the goodwill at the Company's Zhongli reporting unit in China. This impairment was recorded due to lower operating performance at this reporting unit due to the declining coal market in China. An additional charge of \$2.7 million was recorded to reduce the carrying value of four tradenames within the Energy segment to their fair value.

In 2016, after conducting the annual impairment testing for goodwill and indefinite lived intangible assets, the Company recorded a total impairment charge of \$57.9 million. A charge of \$53.8 million was recorded to reduce the carrying value of the goodwill at three reporting units to their fair value. The first step of the impairment test indicated potential impairment for one of the reporting units due to lower operating performance as a result of increased competition caused by market and pricing pressures. This impairment was measured in the second step. The first step of the impairment test indicated potential impairment for the remaining two reporting units due to changes in sales forecasts for future years in the fourth quarter of fiscal 2016. These changes were influenced by weaker market conditions, partially due to depressed oil prices. This impairment was measured in the second step. An additional charge of \$4.2 million was recorded to reduce the carrying value of four tradenames to their fair value.

The Company concluded its strategic plan assessment in the third quarter of fiscal 2017 and made several decisions to transform the business to win market share and create value. The Company also implemented a restructuring program during the fourth quarter of 2017 to reduce costs by approximately \$7 million per annum and refocus the Company's portfolio including exiting non-core and low critical mass products. The Company incurred restructuring expenses of \$1.9 million in 2017, as a result of implementing the restructuring program.

Operating income for 2017 was \$8.0 million, an increase of \$33.6 million from a (loss) of \$(25.6) million in 2016. Operating income as a percentage of sales for 2017 was 2.3% compared with a negative (6.1)% for 2016. The increase in operating income was attributable to the prior year intangible asset and goodwill impairment of \$57.9 million, compared to intangible asset and goodwill impairment recorded in the current year of \$7.2 million. The increase in operating income was partially offset by decreased gross profit of \$21.7 million, primarily due to a sales volume decline period over period. On an as adjusted basis, non-GAAP operating income was \$28.3 million for 2017, a decrease of \$24.4 million from \$52.7 million in 2016. Non-GAAP operating income as a percentage of sales for 2017 was 8.2% compared with 12.6% for 2016. The decrease in non-GAAP operating income was due to decreased gross profit, which is the result of a sales volume decline period over period.

Other income for 2017 was \$0.1 million of income compared with \$0.3 million of income in 2016, and was comprised primarily of foreign currency transaction gains and losses.

Interest expense decreased to \$6.7 million in 2017 from \$7.7 million in 2016. The decrease is attributable to debt repayments made throughout 2016 and 2017 that decreased the amount of outstanding debt throughout 2017.

Income tax expense was \$4.4 million and \$5.3 million in 2017 and 2016, respectively. The effective tax rate for 2017 was 315.0% compared with (16.0)% in 2016. Income tax expense and the effective tax rate for 2017 were significantly impacted by certain aspects of the Tax Cuts and Jobs Act ("Tax Act"), which was enacted on December 22, 2017. As a result of the Tax Act, the effective tax rate was adversely impacted in 2017 by a \$6.4 million charge related to the deemed, one-time repatriation of foreign earnings, but it was favorably impacted by a \$4.8 million benefit related to the revaluation of net deferred tax assets and liabilities as a result of the reduction in the U.S. corporate income tax rate from 35% to 21%. Other significant impacts to the 2017 effective tax rate include the adverse effect of nondeductible \$1.8 million of intangible asset and goodwill impairment charges, as well as a benefit

of nondeductible \$1.8 million related to an adjustment to estimated earnout expenses. The amounts reported related to changes brought about by the Tax Act are provisional amounts, subject to change within the measurement period ending one year from the December 22, 2017 effective date of the Tax Act.

Comparison of the years ended December 31, 2016 and 2015

Consolidated sales in 2016 were \$417.0 million compared with \$367.4 million in 2015, an increase of \$49.6 million. The increase in sales was due primarily to the acquisition of PMFG at the beginning of September 2015. This acquisition contributed an incremental \$60.9 million of sales in 2016. This increase is partially offset by a decreased volume of sales of the Company's air pollution control equipment.

Gross profit increased by \$25.7 million, or 23.5%, to \$134.9 million in 2016 compared with \$109.2 million in 2015. Gross profit as a percentage of sales was 32.4% in 2016 compared with 29.7% in 2015. The increase in gross profit on a dollar basis was the result of the aforementioned acquisition, which contributed an incremental \$25.0 million. On an as adjusted basis, non-GAAP gross profit was \$135.6 million or 32.5% as a percentage of sales for 2016, an increase of \$25.3 million on a dollar basis compared with non-GAAP gross profit of \$110.3 million or 30.0% as a percentage of sales in 2015. The higher gross profit margin in 2016 was primarily due to higher than average margins earned throughout the year by PMFG.

Selling and administrative expenses were \$81.9 million in 2016 compared with \$67.5 million in 2015. The increase in selling and administrative expenses is primarily attributable to incremental selling and administrative expenses from the PMFG acquisition. The increase is partially offset by the Company recording gains of \$1.6 million during 2016, which consisted of \$1.0 million related to a life insurance settlement and \$0.6 million related to a warranty settlement received from an external service provider of the Company. Selling and administrative expenses as a percentage of sales were 19.6% in 2016 compared with 18.4% in 2015.

Acquisition and integration expenses of \$0.5 million in 2016 and \$7.9 million in 2015 relate to acquisition activities, which include legal, accounting, and banking expenses. The decrease in acquisition and integration expenses was primarily due to costs incurred as a result of the PMFG acquisition, which occurred during 2015.

Amortization and earnout expense was \$20.2 million in 2016 and \$25.6 million in 2015. The adjustment recorded to the fair value of the earnout from the Zhongli acquisition was \$6.5 million and \$11.2 million in 2016 and 2015, respectively. The fair value adjustments to the earnout were the result of Zhongli performing above initial acquisition date operational expectations. Fair value adjustments that resulted in income of \$1.3 million and \$1.0 million were recorded in 2016 related to the HEE and SAT earnouts, respectively. The fair value of the adjustments to the earnout were the result of HEE and SAT performing below initial acquisition date operational expectations. Payments of the Zhongli earnout are based upon a multiple of specified financial results through December 31, 2017.

In 2016, after conducting the annual impairment testing for goodwill and indefinite lived intangible assets, the Company recorded a total impairment charge of \$57.9 million. A charge of \$53.8 million was recorded to reduce the carrying value of the goodwill at three reporting units to their fair value. The first step of the impairment test indicated potential impairment for one of the reporting units due to lower operating performance as a result of increased competition caused by market and pricing pressures. This impairment was measured in the second step. The first step of the impairment test indicated potential impairment for the remaining two reporting units due to changes in sales forecasts for future years in the fourth quarter of fiscal 2016. These changes were influenced by weaker market conditions, partially due to depressed oil prices. This impairment was measured in the second step. An additional charge of \$4.2 million was recorded to reduce the carrying value of four tradenames to their fair value.

Operating (loss) income for 2016 was \$(25.6) million, a decrease of \$30.5 million from income of \$4.9 million in 2015. Operating income as a percentage of sales for 2016 was (6.1)% compared with 1.3% for 2015. The decrease in operating income was attributable to the aforementioned intangible asset and goodwill impairment, which was partially offset by increased gross profit and decreased acquisition and integration expenses. PMFG contributed an incremental \$10.0 million in operating profit in 2016. On an as adjusted basis, non-GAAP operating income was \$52.7 million for 2016, an increase of \$9.9 million from 2015. Non-GAAP operating income as a percentage of sales for 2016 was 12.6% compared with 11.6% for 2015, up slightly year over year. The increase in non-GAAP operating income was primarily due to higher gross margins, which were partially offset by increased selling and administrative expenses.

Other income / expense for 2016 was \$0.3 million of income compared with \$2.1 million of expense in 2015, and was comprised primarily of foreign currency transaction gains of \$0.8 million in 2016 and foreign currency transaction losses of \$1.7 million in 2015. The expense in 2015 is primarily attributable to a translation remeasurement on U.S. Dollar denominated intercompany debt at our subsidiary in the Netherlands.

Interest expense increased to \$7.7 million in 2016 from \$6.0 million in 2015, related to higher debt levels outstanding for a longer period of time in 2016 in connection with the PMFG acquisition.

Income tax expense was \$5.3 million and \$2.6 million in 2016 and 2015, respectively. The effective tax rate for 2016 was (16.0)% compared with (85.2)% in 2015. The effective tax rate was adversely impacted in 2016 by \$2.6 million of nondeductible earnout expenses and \$17.9 million of nondeductible intangible asset and goodwill impairment charges, which more than offset the benefits of \$1.7 million from foreign rate differences, \$0.6 million of the domestic production activities deduction, \$1.0 million related to United States and Foreign tax incentives and deferred tax asset movement, and \$0.6 million of changes in uncertain tax position reserves.

Business Segments

The Company's operations in 2017, 2016 and 2015 are organized and reviewed by management along its product lines or end market that the segment serves and are presented in three reportable segments. The results of the segments are reviewed through to the "Income (loss) from operations" line on the Consolidated Statements of Operations. The amounts presented in the Net Sales table below and in the following comments regarding our net sales at the reportable business segment level exclude both intra-segment and inter-segment net sales. The Income (loss) from Operations table and corresponding comments regarding operating income (loss) at the reportable segment level include both intra-segment and inter-segment operating income.

	2017	2016	2015
Net Sales (less intra-, inter-segment sales) (Table only in thousands)			
Energy Segment	\$ 149,514	\$ 203,376	\$ 142,150
Environmental Segment	127,279	153,344	158,371
Fluid Handling and Filtration Segment	69,159	61,783	67,610
Corporate and Other (1)	(901)	(1,492)	(709)
Net sales	\$345,051	\$417,011	\$367,422

(1) Includes adjustment for revenue on intercompany jobs.

	2017	2016	2015
Income (loss) from Operations (Table only in thousands)			
Energy Segment	\$8,987	\$23,575	\$3,488
Environmental Segment	13,703	15,652	17,021
Fluid Handling and Filtration Segment	14,734	(36,209)	11,741
Corporate and Other (2)	(26,649)	(26,981)	(26,592)
Eliminations	(2,751)	(1,599)	(709)
Income (loss) from operations	\$8,024	\$(25,562)	\$4,949

(2) Includes corporate compensation, professional services, information technology, acquisition and integration expenses, and other general and administrative corporate expenses. This figure excludes earnout expenses / income, which are recorded in the segment in which the expense / income occurs. See Note 7 to the consolidated financial statements for further information.

Comparison of the years ended December 31, 2017 and 2016

Energy Segment

Our Energy segment net sales decreased \$53.9 million to \$149.5 million in the year ended December 31, 2017 compared with \$203.4 million in the year ended December 31, 2016, a decrease of 26.5%. The decrease is due primarily to decreased sales volume for the Company's natural gas turbine exhaust systems related products and services and solid fuel power generation because of a weakening of this market in Europe and China and a temporary weakening in the gas turbine powered market due to over-capacity.

Operating income from the Energy segment decreased \$14.6 million to \$9.0 million for the year ended December 31, 2017 compared with \$23.6 million in the year ended December 31, 2016, a decrease of 61.9%. The decrease in operating income in 2017 was due to a decrease in revenues, which resulted in a decrease in gross profit of \$16.9 million. The decrease in operating income was also attributable to a non-cash impairment charge of \$7.2 million in 2017 to reduce the carrying value of goodwill at one reporting unit and tradename intangible assets at four reporting units within the Energy segment to their fair value. The decrease in operating income was partially offset by adjustments recorded to the fair value of the earnout from the Zhongli acquisition, which resulted in \$6.6 million of income in 2017 and \$6.5 million of expense in 2016, respectively. The fair value adjustments to the earnout that were recorded in 2017 were the result of Zhongli performing below operational expectations set for 2017. The fair value adjustments to the earnout that were recorded in 2016 were the result of Zhongli performing above initial acquisition date operational expectations. The earnout period for the Zhongli acquisition ended as of December 31, 2017.

Environmental Segment

Our Environmental segment net sales decreased \$26.0 million to \$127.3 million in the year ended December 31, 2017 compared with \$153.3 million in the year ended December 31, 2016, a decrease of 17.0%. The decrease is primarily due to decreased sales volume for the Company's refinery related products and services as well as decreased sales volume related to the installation and fabrication of ventilation duct work and related equipment, which is primarily attributable to a cyclical deferral of maintenance and capital expenditures by the Company's customers in refinery related end markets.

Operating income from the Environmental segment decreased \$2.0 million to \$13.7 million for the year ended December 31, 2017 compared with \$15.7 million in the year ended December 31, 2016, a decrease of 12.7%. The decrease in operating income was primarily due to a decrease in revenues, which resulted in a decrease in gross profit of \$7.7 million. Additionally, operating income in 2016 was higher due to \$2.3 million of income recorded in 2016 as a result of adjustments to the fair value of the earnouts of two subsidiaries within the Environmental Segment, which was lower partially offset by a non-cash impairment charge of \$6.8 million recorded in 2016 to reduce the carrying value of the goodwill at two reporting units within the Environmental Segment to their fair value.

Fluid Handling and Filtration ("FHF") Segment

Our FHF segment net sales increased \$7.4 million to \$69.2 million in the year ended December 31, 2017 compared with \$61.8 million in the year ended December 31, 2016, an increase of 12.0%. The increase is due to increased international demand for the FHF Segment's products and a strengthening of the FHF Segment's North American Industrial Market in 2017.

Operating income from the FHF segment increased \$50.9 million to \$14.7 million for the year ended December 31, 2017 compared with an operating loss of \$(36.2) million for the year ended December 31, 2016, an increase of 140.6%. The increase was primarily due to a non-cash impairment charge of \$46.9 million in 2016, which was recorded to reduce the carrying value of the goodwill at a reporting unit within the FHF Segment to its fair value and an additional non-cash intangible asset impairment charge of \$1.8 million in 2016 related to a tradename intangible asset within the segment. In addition to this, the increase in operating income was primarily due to an increase in revenue, which resulted in an increase in gross profit of \$2.7 million.

Comparison of the years ended December 31, 2016 and 2015

Energy Segment

Our Energy segment net sales increased \$61.2 million to \$203.4 million in the year ended December 31, 2016 compared with \$142.2 million in the year ended December 31, 2015, an increase of 43.1%. The increase is primarily due to the PMFG acquisition, which contributed an incremental \$60.9 million in net sales, for the year ended December 31, 2016.

Operating income from the Energy segment increased \$20.1 million to \$23.6 million for the year ended December 31, 2016 compared with \$3.5 million in the year ended December 31, 2015, an increase of 575.9%. PMFG contributed an incremental \$10.0 million in operating profit in 2016. The increase is additionally attributable to a more favorable project mix in 2016 as well as a reduction of the adjustment recorded to the fair value of the earnout from the Zhongli acquisition. The adjustment recorded was \$6.5 million of expense in 2016 compared with \$11.2 million of expense in 2015.

Environmental Segment

Our Environmental segment net sales decreased \$5.0 million to \$153.3 million in the year ended December 31, 2016 compared with \$158.4 million in the year ended December 31, 2015, a decrease of 3.2%. The decrease is due primarily to a decreased volume of the Company's scrubbers and mist eliminators product lines.

Operating income from the Environmental segment decreased \$1.4 million to \$15.7 million for the year ended December 31, 2016 compared with \$17.0 million in the year ended December 31, 2015, a decrease of 8.0%. The decrease was due in part to a non-cash \$0.8 million intangible asset impairment charge recorded in 2016 related to two tradenames. An additional non-cash charge of \$6.8 million was recorded in 2016 to reduce the carrying value of the goodwill at two reporting units within the Environmental Segment to their fair value. These charges were partially offset by higher gross margins on decreased sales and a reduction in selling and administrative expenses attributable to a more favorable project mix. In addition, the decrease in operating income was partially offset by \$2.3 million of income as a result of an adjustment to the fair value of the earnouts from two subsidiaries within the Environmental Segment.

Fluid Handling and Filtration Segment

Our FHF segment net sales decreased \$5.8 million to \$61.8 million in the year ended December 31, 2016 compared with \$67.6 million in the year ended December 31, 2015, a decrease of 8.6%. The decrease is due to sales volume decline within the segment period over period related to pumps, which is primarily attributable to a temporary weakness in the North American industrial market.

Operating income (loss) from the FHF segment decreased \$48.0 million to a \$36.2 million operating loss for the year ended December 31, 2016 compared with \$11.7 million in operating income for the year ended December 31, 2015, a decrease of 208.4%. The decrease was due primarily to a non-cash charge of \$46.9 million, which was recorded to reduce the carrying value of the goodwill at a reporting unit within the Fluid Handling and Filtration Segment to its fair value. There was also an additional non-cash intangible asset impairment charge of \$1.8 million in 2016 related to a tradename intangible asset within the segment.

Non-GAAP Measures for the Three Months Ended December 31

The following tables present the reconciliation of GAAP gross profit and GAAP gross margin to non-GAAP gross profit and non-GAAP gross profit margin, GAAP operating (loss) income and GAAP operating margin to non-GAAP operating income and non-GAAP operating margin:

(dollars in millions)	Three Months Ended December 31,		
	2017	2016	2015
Net sales as reported in accordance with GAAP	\$73.5	\$100.0	\$101.2
Gross profit as reported in accordance with GAAP	\$25.6	\$35.7	\$30.8
Gross profit margin in accordance with GAAP	34.8%	35.7%	30.4%
Inventory valuation adjustment	—	—	0.5
Plant, property and equipment valuation adjustment	0.1	0.1	0.1
Non-GAAP gross profit	\$25.7	\$35.8	\$31.4
Non-GAAP gross profit margin	35.0%	35.8%	31.0%

(dollars in millions)	Three Months Ended December 31,		
	2017	2016	2015
Operating loss as reported in accordance with GAAP	\$(8.2)	\$(50.4)	\$(0.3)
Operating margin in accordance with GAAP	(11.2)%	(50.4)%	(0.3)%
Inventory valuation adjustment	—	—	0.5
Plant, property and equipment valuation adjustment	0.1	0.1	0.1
Acquisition and integration expenses	—	—	0.9
Amortization and earnout expenses	2.5	7.1	5.6
Intangible asset and goodwill impairment	7.2	57.9	3.3
Restructuring expense	1.9	—	—
Non-GAAP operating income	\$3.5	\$14.7	\$10.1
Non-GAAP operating margin	4.8%	14.7%	10.0%

Gross profit was \$25.6 million or 34.8% as a percentage of sales for the three months ended December 31, 2017, a decrease of \$10.1 million compared to gross profit of \$35.7 million or 35.7% as a percentage of sales for the three months ended December 31, 2016. The lower gross profit was primarily attributable to a sales volume decline period over period. Operating loss was \$(8.2) million or (11.2)% as a percentage of sales for the three months ended December 31, 2017, an increase of \$42.2 million compared with \$(50.4) million loss or (50.4)% as a percentage of sales for the three months ended December 31, 2016. The increase in operating income was primarily due to an intangible asset and goodwill impairment charge of \$57.9 million recorded in the fourth quarter of 2016 as compared to a \$7.2 million intangible asset and goodwill impairment charge in 2017.

Gross profit was \$35.7 million or 35.7% as a percentage of sales for the three months ended December 31, 2016, an increase of \$4.9 million compared to gross margin of \$30.8 million or 30.4% as a percentage of sales for the three months ended December 31, 2015. The higher gross profit margin and gross profit in 2016 was primarily due to higher than average margins earned throughout the quarter by PMFG and a more favorable project mix in 2016. Operating loss was \$(50.4) million or (50.4)% as a percentage of sales for the three months ended December 31, 2016, a decrease of \$50.1 million compared with \$(0.3) million loss or (0.3%) as a

percentage of sales for the three months ended December 31, 2015. The decrease in operating income was primarily due to an intangible asset and goodwill impairment charge of \$57.9 million recorded in the fourth quarter of 2016.

On an adjusted basis, non-GAAP gross profit was \$25.7 million or 35.0% as a percentage of sales for the three months ended December 31, 2017, a decrease of \$10.1 million compared with non-GAAP gross margin of \$35.8 million or 35.8% as a percentage of sales for the three months ended December 31, 2016. On an as adjusted basis, non-GAAP operating income was \$3.5 million or 4.8% as a percentage of sales for the three months ended December 31, 2017, a decrease of \$11.2 million compared with \$14.7 million or 14.7% as a percentage of sales for the three months ended December 31, 2016. The lower gross profit is primarily attributable to a sales volume decline period over period. The lower operating income is primarily attributable to decreased gross profit.

On an as adjusted basis, non-GAAP gross profit was \$35.8 million or 35.8% as a percentage of sales for the three months ended December 31, 2016, an increase of \$4.4 million compared with non-GAAP gross margin of \$31.4 million or 31.0% as a percentage of sales for the three months ended December 31, 2015. On an as adjusted basis, non-GAAP operating income was \$14.7 million or 14.7% as a percentage of sales for the three months ended December 31, 2016, an increase of \$4.6 million compared with \$10.1 million or 10.0% as a percentage of sales for the three months ended December 31, 2015. The higher gross profit margin, gross profit and operating income in 2016 was primarily due to higher than average margins earned throughout the quarter by PMFG and a more favorable project mix in 2016.

Backlog

Backlog is a representation of the amount of revenue expected from complete performance of firm fixed-price contracts that have not been completed for products and services we expect to substantially deliver within the next twelve-month to eighteen-month period. Our customers may have the right to cancel a given order. Our backlog as of December 31, 2017 was \$168.9 million compared with \$197.0 million as of December 31, 2016. During 2017, the Company removed \$12.6 million of orders that were previously disclosed as backlog in prior quarters, which were idle due to inactivity by the customer.

Liquidity and Capital Resources

Our principal sources of liquidity are cash flow from operations and available borrowings under our Credit Facility (defined below). Our principal uses of cash are operating costs, payment of principal and interest on our outstanding debt, working capital and other corporate requirements.

When we undertake large jobs, our working capital objective is to make these projects self-funding. We work to achieve this by obtaining initial down payments, progress billing contracts, when possible, utilizing extended payment terms from material suppliers, and paying sub-contractors after payment from our customers, which is an industry practice. Our investment in net working capital is funded by cash flow from operations and by our revolving line of credit.

At December 31, 2017, the Company had working capital of \$66.1 million, compared with \$66.6 million at December 31, 2016. The ratio of current assets to current liabilities was 1.61 to 1 as compared with a ratio of 1.46 to 1 at December 31, 2016. The \$0.5 million decrease in working capital from December 31, 2016 to December 31, 2017 was primarily related to a decrease in cash and cash equivalents (\$15.9 million), a decrease in accounts receivable (\$15.1 million), a decrease in costs and estimated earnings on uncompleted contracts (\$4.2 million), a decrease in the prepaid expenses and other current assets (\$2.8 million), an increase in the current portion of long-term debt (\$2.5

million), and a decrease in restricted cash (\$0.9 million) partially offset by a decrease in accounts payable and accrued expenses (\$24.8 million) and a decrease in billings in excess of costs and estimated earnings on uncompleted contracts (\$14.6 million). During the year ended December 31, 2017, the Company made prepayments of \$4.3 million on the outstanding balance of the term loan, of which \$3 million was applied to the long-term portion of the debt balance, which caused a reduction in working capital. The Company entered into a note payable agreement for \$5.3 million during the year ended December 31, 2016, which becomes due subsequent to the sale of building and land that the Company owns in China, which is classified as held for sale within the Consolidated Balance Sheets as of December 31, 2017 and 2016. As the Company entered into an agreement to sell the building and related assets classified within assets held for sale on our Consolidated Balance Sheets subsequent to the year ended December 31, 2017, the note payable for \$5.3 million will become due in fiscal year 2018.

At December 31, 2017 and 2016, cash and cash equivalents totaled \$29.9 million and \$45.8 million, respectively. As of December 31, 2017 and 2016, \$19.7 million and \$25.6 million, respectively, of our cash and cash equivalents were held by certain non-U.S. subsidiaries, as well as being denominated in foreign currencies.

Debt consisted of the following at December 31, 2017 and 2016:

	December 31,	December 31,
(Table only in thousands)	2017	2016
Outstanding borrowings under Credit Facility.		
Term loan payable in quarterly principal installments of \$2.0 million through September 2018, \$2.5 million thereafter with balance due upon maturity in September 2020.		
– Term loan	\$ 113,903	\$ 125,072
– U.S. Dollar revolving loans	1,000	—
– Unamortized debt discount	(2,834)	(3,175)
Total outstanding borrowings under Credit Facility	112,069	121,897
Outstanding borrowings (U.S. dollar equivalent) under		
China Facility	—	1,296
Outstanding borrowings (U.S. dollar equivalent) under		
Aarding Facility	2,764	—
Total outstanding borrowings	\$ 114,833	\$ 123,193
Less: current portion	11,296	8,827
Total debt, less current portion	\$ 103,537	\$ 114,366

The Company entered into a credit agreement (the “Credit Agreement”) with various lenders and letter of credit issuers providing for various senior secured credit facilities (collectively, the “Credit Facility”). The Credit Agreement contains customary affirmative and negative covenants, including the requirement to maintain compliance with a consolidated leverage ratio of less than 3.75 and a consolidated fixed charge coverage ratio of more than 1.25. Per the Credit Agreement, the maximum consolidated leverage ratio of 3.75 will remain constant at this ratio through March 31, 2019, when it will decrease to 3.50 through September 30, 2019. The consolidated leverage ratio will then decrease to 3.25 where it will remain until the end of the Credit Agreement. As of December 31, 2017 and 2016, the Company was in compliance with all related financial and other restrictive covenants under the Credit Facility.

A subsidiary of the Company located in the Netherlands has a Euro denominated facilities agreement with ING Bank N.V. as the lender (“Aarding Facility”). All of the borrowers’ assets are pledged for this facility, and the borrowers’ solvency ratio must be at least 30% and net debt/last twelve months EBITDA less than 3.0. As of December 31, 2016 the borrowers were in compliance with all related financial and other restrictive covenants. As of December 31, 2017, the borrowers were not in compliance with certain financial covenants under the Aarding Facility. As such, in March 2018, the Company settled the outstanding amount of \$2.8 million of the overdraft facility, which is classified as current portion of debt in the Consolidated Balance Sheets. The Company plans to exit this facility and consolidate it with the existing Credit Facility.

See Note 9 to the consolidated financial statements for further information on the Company’s debt facilities.

Total unused credit availability under our Credit Facility and other non-U.S. credit facilities and agreements, exclusive of any potential asset base limitations, is as follows:

	December 31,	
	2017	2016
(dollars in millions)		
Credit Facility, U.S. Dollar revolving loans	\$60.5	\$60.5
Draw down	(1.0)	—
Letters of credit open	(24.4)	(18.0)
Credit Facility, Multi-currency revolving facilities	19.5	19.5
Netherlands facilities (€13.0 million at December 31, 2017		
and €13.0 million at December 31, 2016 in U.S. Dollar equivalent)	15.6	13.7
Draw down	(2.8)	—
Letters of credit open	(3.9)	(5.3)
China Facility	4.6	4.3
Draw down	—	(1.3)
Total unused credit availability	\$68.1	\$73.4
Amount available based on borrowing limitations	\$18.7	\$71.1

Overview of Cash Flows and Liquidity

	For the year ended December		
	31,		
	2017	2016	2015
(dollars in thousands)			
Total operating cash flow provided by operating activities	\$6,570	\$69,599	\$12,637
Net cash used in investing activities	(660)	(419)	(35,039)
Net cash (used in) provided by financing activities	(22,713)	(55,838)	38,920
Effect of exchange rate changes on cash and cash equivalents	881	(1,712)	(486)
Net increase (decrease) in cash and cash equivalents	\$(15,922)	\$11,630	\$16,032

In 2017, \$6.6 million of cash was provided by operating activities as compared with \$69.6 million provided in 2016. The \$63.0 million decrease in cash flow from operating activities was due to several factors. First, non-cash items relating to goodwill and intangible asset impairments, depreciation and amortization, fair value adjustments to the earnout liability and foreign currency had a significant impact on the 2017 and 2016 net loss, resulting in an additional loss of \$18.3 million. Additionally, Zhongli earnout payments, classified as operating activities, were \$7.8 million in 2017 with no corresponding charge in 2016. Further, payments on accounts payable and accrued expenses increased \$9.2 million in 2017 compared to 2016 and billings in excess of costs decreased by \$22.6 million in 2017 compared to 2016. Overall, these factors primarily contributed to the \$63.0 million decrease in cash flow from operating activities.

In 2016, \$69.6 million of cash was provided by operating activities as compared with \$12.6 million provided in 2015. The \$57.0 million increase in cash flow from operating activities was due primarily to the net loss in 2016 being attributable to non-cash charges of impairment of intangible assets and goodwill of \$57.9 million, depreciation and amortization of \$18.9 million, and fair value adjustments of earnout liabilities of \$4.2 million that was partially offset

by a net loss of \$38.3 million. Cash provided by operating activities was positively impacted by favorable net working capital items in 2016 compared with 2015. The incremental cash provided was comprised of \$13.3 million in accounts receivable, \$9.4 million in inventories, \$2.5 million in costs and estimated earnings in excess of billings on uncompleted contracts, and \$7.4 million in billings in excess of costs and estimated earnings on uncompleted contracts.

In 2017, \$0.7 million of cash was used in investing activities as compared with \$0.4 million in 2016. Investing activities in 2017 were comprised of \$1.0 million for capital expenditures for property and equipment and offset by \$0.4 million proceeds from sale of property and equipment, as compared with \$1.1 million paid for capital expenditures for property and equipment partially offset by \$0.7 million in proceeds from sale of property and equipment in 2016. In 2015, \$37.5 million in cash was paid for acquisitions and \$0.8 million was paid for capital expenditures for property and equipment, which was partially offset by \$3.2 million in proceeds from sale of property and equipment

Financing activities in 2017 used net cash of \$22.7 million, which consisted primarily of net repayments on debt instruments of \$8.9 million, earnout payments of \$7.4 million, and dividends paid to our shareholders of \$7.8 million, less cash received from net borrowings on revolving credit lines of \$2.3 million, decreases in restricted cash of \$1.4 million and proceeds from stock option exercises and employee stock purchases of \$1.4 million.

Financing activities in 2016 used net cash of \$55.8 million, which consisted primarily of net repayments on debt instruments of \$55.2 million, earnout payments of \$9.3 million, and dividends paid to our shareholders of \$9.0 million, less cash received from sale-leaseback transactions of \$14.2 million, decreases in restricted cash of \$3.1 million and proceeds from stock option exercises and employee stock purchases of \$1.7 million.

Financing activities in 2015 provided net cash of \$38.9 million, which consisted primarily of net borrowings of \$51.6 million and proceeds from employee stock purchase plan and exercise of stock options of \$0.2 million, less dividends paid to our shareholders of \$8.0 million, cash used to pay deferred financing fees of \$2.9 million, and earnout payments of \$2.5 million.

Our dividend policy and the payment of cash dividends under that policy are subject to the Board of Directors' continuing determination that the dividend policy and the declaration of dividends are in the best interest of the Company's shareholders. On November 6, 2017, the Board of Directors reviewed the Company's dividend policy and determined that it would be in the best interest of the stockholders to suspend dividend payments. Future dividends and the dividend policy may be changed or cancelled at the Company's discretion at any time. Payment of dividends is also subject to the continuing compliance with our financial covenants under our Credit Facility. During 2017 and 2016, our Board declared the following quarterly cash dividends on our common stock:

Dividend

Per Share	Record Date	Payment Date
\$0.075	September 15, 2017	September 29, 2017
\$0.075	June 16, 2017	June 30, 2017
\$0.075	March 17, 2017	March 31, 2017
\$0.066	December 16, 2016	December 30, 2016
\$0.066	September 16, 2016	September 30, 2016
\$0.066	June 18, 2016	June 30, 2016
\$0.066	March 18, 2016	March 31, 2016

The Company maintained a Dividend Reinvestment Plan (the "Plan"), under which the Company may issue up to 750,000 shares of common stock. The Plan provided a way for interested shareholders to increase their holdings in our common stock. Participation in the Plan was strictly voluntary and was open only to existing shareholders. If the dividend is reinstated, the Company may periodically issue new shares of common stock under the Plan.

We believe that cash flows from operating activities, together with our existing cash and borrowings available under our Credit Facility, will be sufficient for at least the next twelve months to fund our current anticipated uses of cash. After that, our ability to fund these expected uses of cash and to comply with the financial covenants under our debt agreements will depend on the results of future operations, performance and cash flow. Our ability to fund these expected uses from the results of future operations will be subject to prevailing economic conditions and to financial, business, regulatory, legislative and other factors, many of which are beyond our control.

Employee Benefit Obligations

Based on current assumptions, estimated contributions of \$0.8 million may be required in 2018 for the pension plan and \$24,000 for the retiree healthcare plan. The amount and timing of required contributions to the pension trust depends on future investment performance of the pension funds and interest rate movements, among other things and, accordingly, we cannot reasonably estimate actual required payments. Currently, our pension plan is under-funded. As a result, absent major increases in long-term interest rates, above average returns on pension assets and/or changes in legislated funding requirements, we will be required to make contributions to our pension trust of varying amounts in the long-term.

Off Balance Sheet Arrangements

None.

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Contractual Obligations

The following table summarizes the Company's contractual obligations as of December 31, 2017 (in thousands):

	Payments Due by Period				
	Total	Less than 1 year	1-3 years	3-5 years	More than 5 years
Long-term debt	\$113,903	\$8,533	\$105,370	\$—	\$—
Revolver	1,000	—	1,000	—	—
Note payable (1)	5,300	5,300	—	—	—
Interest expense (estimated)	11,436	4,918	6,518	—	—
Unconditional purchase obligations (2)	91,985	89,146	2,839	—	—
Pension and post retirement obligations (3)	4,047	847	1,568	1,632	—
Operating lease obligations	17,264	4,470	5,674	3,992	3,128
Capital lease & sale leaseback financing obligations	15,925	1,165	2,400	2,497	9,863
Contingent liabilities related to acquisitions	4,474	2,988	1,486	—	—
Totals	\$265,334	\$117,367	\$126,855	\$8,121	\$12,991

(1) The note above is payable at the earlier of July 11, 2019, or thirty days subsequent to the sale of the building and land that the Company owns in China. As the Company intends to sell the building and land within one year of December 31, 2017, this note payable is currently classified as a current liability in the Consolidated Balance Sheets as of December 31, 2017. As the related asset held for sale was agreed to be sold subsequent to the year ended December 31, 2017, the note payable for \$5.3 million will become due in fiscal year 2018.

(2) Primarily consists of purchase obligations for various costs associated with uncompleted sales contracts.

(3) Future expected obligations under the Company's pension and post retirement plans are included in the contractual cash obligations table above, up to, but not more than five years. The Company's pension and post retirement plan policy allows it to fund an amount, which could be in excess of the pension and post retirement cost expensed, subject to the limitations imposed by current tax regulations. The Company projects that it will contribute \$0.8 million to its pension and post-retirement plans during the fiscal year ended December 31, 2018.

Critical Accounting Policies and Estimates

Our consolidated financial statements are prepared in conformity with GAAP. The preparation of these financial statements requires the use of estimates, judgments, and assumptions that affect the reported amounts of assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the periods presented. We believe that, of our significant accounting policies, the following accounting policies involve a higher degree of judgments, estimates, and complexity.

Use of Estimates

Preparation of the consolidated financial statements in accordance with GAAP requires management to make estimates and assumptions affecting the reported amounts of assets, liabilities, revenues and expenses and related contingent liabilities. On an on-going basis, we evaluate our estimates, including those related to revenues, bad debts, share based compensation, income taxes, earnouts, goodwill and intangible asset valuation, and contingencies and litigation. We base our estimates on historical experience and on various other assumptions that we believe are reasonable under the circumstances. Actual results may differ from these estimates under different assumptions or conditions.

Revenue Recognition

A substantial portion of our revenue is derived from contracts, which are primarily accounted for under the percentage of completion method of accounting. Percentage completion is measured by the percentage of contract costs incurred to date compared with estimated total contract costs to be the best available measure of progress on these contracts. Contract costs include direct material and labor costs related to contract performance. This method requires a higher degree of management judgment and use of estimates than other revenue recognition methods. The judgments and estimates involved include management's ability to accurately estimate the contracts' percentage of completion and the reasonableness of the estimated costs to complete, among other factors, at each financial reporting period. In addition, certain contracts are highly dependent on the work of contractors and other subcontractors participating in a project, over which we have no or limited control, and their performance on such project could have an adverse effect on the profitability of our contracts. Delays resulting from these contractors and subcontractors, changes in the scope of the project, weather, and labor availability also can have an effect on a contract's profitability. Changes to job performance, job conditions, and estimated profitability may result in revisions to contract revenue and costs and are recognized in the period in which the revisions are made. For contracts where the duration is short, total contract revenue is insignificant, or reasonably dependable

estimates cannot be made, revenues are recognized on a completed contract basis, when risk and title passes to the customer, which is generally upon shipment of product.

Provisions for estimated losses on uncompleted contracts are made in the period in which such losses are determined. No provision for estimated losses on uncompleted contracts was needed at December 31, 2017, 2016 and 2015.

Credit and Collections

The Company maintains allowances for doubtful accounts receivable for probable estimated losses resulting from either customer disputes or the inability of its customers to make required payments. If the financial condition of the Company's customers were to deteriorate, resulting in their inability to make the required payments, the Company may be required to record additional allowances or charges against income. The Company determines its allowance for doubtful accounts by considering all known collectability problems of customer' accounts and reviewing the aging of the outstanding receivables. The resulting allowance for doubtful accounts receivable is an estimate based upon the Company's knowledge of its business and customer base, and historical trends. The amount ultimately not collected may differ from the reserve established.

Inventories

The Company's inventories are primarily valued at the lower of cost or net realizable value using the first-in, first-out inventory costing method as well as the last-in, first-out method. As of December 31, 2017 and 2016, approximately 14% and 8%, respectively, of our inventory is valued on the last-in, first-out method. Inventory quantities are regularly reviewed and provisions for excess or obsolete inventory are recorded primarily based on the Company's forecast of future demand and market conditions. Significant unanticipated changes to the Company's forecasts could require a change in the provision for excess or obsolete inventory.

Assets Held for Sale

The Company classifies properties as held for sale when certain criteria are met. At such time, the properties, including significant assets that are expected to be transferred as part of a sale transaction, are presented separately on the consolidated balance sheet at the lower of carrying value or estimated fair value less costs to sell and depreciation is no longer recognized. As of December 31, 2017, the Company had three buildings, two tracts of land and equipment classified as held for sale. As of December 31, 2016, the Company had two buildings and two tracts of land classified as held for sale.

Property, plant and equipment

Property, plant and equipment are carried at the cost of acquisition or construction and depreciated over the estimated useful lives of the assets. Depreciation and amortization are provided using the straight-line method in amounts sufficient to amortize the cost of the assets over their estimated useful lives (buildings and improvements—generally five to 40 years; machinery and equipment—generally two to 15 years).

Intangible assets

Indefinite life intangible assets are comprised of tradenames, while finite life intangible assets are comprised of technology, customer lists, noncompetition agreements, and tradenames. Finite life intangible assets are amortized on a straight line or accelerated basis over their estimated useful lives of seven to 10 years for technology, five to 20 years for customer lists, five years for noncompetition agreements, and 10 years for tradenames.

Long-lived assets

Property, plant and equipment and finite life intangible assets are reviewed whenever events or changes in circumstances occur that indicate possible impairment. If events or changes in circumstances occur that indicate possible impairment, our impairment review is based on an undiscounted cash flow analysis at the lowest level at which cash flows of the long-lived assets are largely independent of other groups of our assets and liabilities. This analysis requires management judgment with respect to changes in technology, the continued success of product lines, and future volume, revenue and expense growth rates. We conduct annual reviews for idle and underutilized equipment, and review business plans for possible impairment. Impairment occurs when the carrying value of the assets exceeds the future undiscounted cash flows expected to be earned by the use of the asset or asset group. When impairment is indicated, the estimated future cash flows are then discounted to determine the estimated fair value of the asset or asset group and an impairment charge is recorded for the difference between the carrying value and the estimated fair value.

Additionally, we also evaluate the remaining useful life each reporting period to determine whether events and circumstances warrant a revision to the remaining period of depreciation or amortization. If the estimate of a long lived asset's remaining useful life is changed, the remaining carrying amount of the asset is amortized prospectively over that revised remaining useful life.

The Company completes an annual (or more often if circumstances require) impairment assessment of its indefinite life intangible assets. As a part of its annual assessment, typically, the Company first qualitatively assesses whether current events or changes in circumstances lead to a determination that it is more likely than not (defined as a likelihood of more than 50 percent) that the fair value of an asset is less than its carrying amount. If there is a qualitative determination that the fair value of a particular asset is more likely than not greater than its carrying value, we do not need to proceed to the traditional quantitative estimated fair value test for that asset. If this qualitative assessment indicates a more likely than not potential that the asset may be impaired, the estimated fair value is calculated by the relief from royalty method. If the estimated fair value of an asset is less than its carrying value, an impairment charge is recorded for the amount by which the carrying value of the asset exceeds its calculated implied fair value. For the 2017 and 2016 annual assessments, given the lower than expected results for certain reporting units, we determined that a quantitative assessment of fair value for all indefinite life intangible assets using the relief from royalty method was appropriate.

During 2017 and 2016, our annual impairment test indicated that four of our indefinite-lived tradenames were impaired during each respective year. Accordingly, we recognized impairment charges in our financial results of \$2.7 million and \$4.2 million for the years ended December 31, 2017 and 2016, respectively. See Note 7 to the consolidated financial statements for further information regarding goodwill and intangible assets.

Goodwill

The Company completes an annual (or more often if circumstances require) impairment assessment on October 1 of its goodwill on a reporting unit level, at or below the operating segment level. As a part of its annual assessment, the Company first qualitatively assesses whether current events or changes in circumstances lead to a determination that it is more likely than not (defined as a likelihood of more than 50 percent) that the fair value of a reporting unit is less than its carrying amount. If there is a qualitative determination that the fair value of a particular reporting unit is more likely than not greater than its carrying value, the Company does not need to quantitatively test for goodwill impairment for that reporting unit. If this qualitative assessment indicates a more likely than not potential that the asset may be impaired, the estimated fair value is calculated using a weighting of the income method and the market method. If the estimated fair value of a reporting unit is less than its carrying value, an impairment charge is recorded. In 2016, the Company recognized an impairment charge for the amount by which the carrying value of the goodwill exceeds its calculated implied fair value (formerly known as "Step 2"). In fiscal year 2017, the Company prospectively adopted ASU 2017-04, which eliminates Step 2 and instead, an impairment charge was recorded based on the excess of the reporting unit's carrying amount over its fair value with the loss not exceeding the total amount of goodwill allocated to that reporting unit.

The Company bases its measurement of the fair value of a reporting unit using a weighting of the income method and the market method on a 50/50 basis. The income method is based on a discounted future cash flow approach that uses the significant assumptions of projected revenue, projected operational profit, terminal growth rates, and the cost of capital. Projected revenue, projected operational profit and terminal growth rates were determined to be significant assumptions because they are three primary drivers of the projected cash flows in the discounted future cash flow approach. Cost of capital was also determined to be a significant assumption as it is the discount rate used to calculate the current fair value of those projected cash flows. The market method is based on financial multiples of comparable companies and applies a control premium. Significant estimates in the market approach include identifying similar companies with comparable business factors such as size, growth, profitability, risk and return on investment and

assessing comparable revenue and operating income multiples in estimating the fair value of a reporting unit. Based on the analysis, the resultant estimated fair value of all but one reporting unit exceeded their carrying value as of December 31, 2017. The impairment test indicated full goodwill impairment for the Zhongli reporting unit of \$4.4 million, which was recorded in the fourth quarter of fiscal 2017. In the 2017 impairment analysis for reporting unit one, two and three, which carry goodwill of \$32.4 million, \$59.9 million and \$5.7 million, respectively, the fair value only exceeded the carrying value by 6%, 3% and 2%. For additional information on goodwill impairment testing results, see Note 7 to the consolidated financial statements.

Income Taxes

On December 22, 2017, Tax Act was signed into law making significant changes to the U.S. tax code. Changes affecting the Company's consolidated 2017 financial statements include, but are not limited to, a U.S. federal corporate tax rate decrease from 35% to 21% effective for tax years beginning after December 31, 2017 and a one-time transition tax, payable over eight years, on the mandatory deemed repatriation of cumulative foreign earnings as of December 31, 2017. Several other provisions of the Tax Act take effect beginning January 1, 2018.

On December 22, 2017, the SEC staff issued Staff Accounting Bulletin No. 118 (“SAB 118”), which provides guidance on accounting for the tax effects of the Tax Act when a registrant does not have the necessary information available, prepared, or analyzed (including computations) in reasonable detail to complete the accounting for certain income tax effects of the Tax Act. In accordance with SAB 118, the Company has recognized provisional amounts related to the tax effects of the Tax Act for which the company was able to make reasonable estimates. We have not completed our accounting for the income tax effect of all elements of the Tax Act. For the provisions of the Tax Act for which the Company was unable to determine a provisional amount, the Company has continued to apply ASC 740 on the basis of the provisions of the tax laws that were in effect immediately before the enactment of the Tax Act.

Tax effects of the Tax Act will be recognized or adjusted as additional implementation guidance is released and analyses are finalized, but no later than the end of the measurement period prescribed by SAB 118, which is one year from the enactment date of the Tax Act.

Income taxes are determined using the asset and liability method of accounting for income taxes in accordance with Financial Accounting Standards Board (“FASB”) Accounting Standards Codification Topic 740, “Income Taxes”. Under ASC Topic 740, tax expense includes U.S. and international income taxes. The Company’s 2017 results include a one-time “transition tax” on the deemed repatriation of previously undistributed foreign earnings. For distributions of such earnings after December 31, 2017, no U.S. taxes will be imposed. However, certain foreign jurisdictions may still apply withholding taxes to such distributions; certain states may also impose income taxes on such distributions.

Tax credits and other incentives reduce tax expense in the year the credits are claimed. Deferred income taxes are provided using the asset and liability method whereby deferred tax assets are recognized for deductible temporary differences and operating loss and tax credit carry-forwards and deferred tax liabilities are recognized for taxable temporary differences. Temporary differences are the differences between the reported amounts of assets and liabilities and their tax bases, and are measured using enacted tax rates expected to apply to taxable income in the year in which those temporary differences are expected to be recovered or settled. Deferred tax assets and liabilities are adjusted for the effects of changes in tax laws and rates on the date of enactment. As of December 31, 2017, ending deferred tax assets and liabilities have been provisionally revalued to reflect the estimated effect of the change in the U.S. federal income tax rate from 35% to 21%.

In addition, from time to time, management must assess the need to accrue or disclose uncertain tax positions for proposed potential adjustments from various federal, state and foreign tax authorities who regularly audit the Company in the normal course of business. In making these assessments, management must often analyze complex tax laws of multiple jurisdictions, including many foreign jurisdictions. The accounting guidance prescribes a recognition threshold and measurement attribute for the financial statement recognition and measurement of a tax position taken or expected to be taken in a tax return. The Company records the related interest expense and penalties, if any, as tax expense in the tax provision.

Another change brought about by the Tax Act is a provision designed to currently tax global intangible low-taxed income (“GILTI”). Although the provision is one of the many that will take effect for the Company’s 2018 consolidated financial statements, an accounting policy election with respect to GILTI could have an impact on deferred tax balances as of December 31, 2017. The company may either elect to record the U.S. income tax effect of future GILTI inclusions in the period in which they arise or establish deferred taxes with respect to the expected future tax liabilities associated with future GILTI inclusions. The Company has not yet made a policy election and no provisional amounts for the GILTI provisions were recorded as of December 31, 2017.

The Company has not historically recorded deferred income taxes on the undistributed earnings of its foreign subsidiaries because of management’s intent to indefinitely reinvest such earnings. Management intends to continue to indefinitely reinvest such earnings, but the provisions of the Tax Act could cause management to reevaluate this

position.

Pension and Postretirement Benefit Plan Assumptions

We sponsor a pension plan for certain employees. We also sponsor a postretirement healthcare benefit plan for certain office employees retiring before January 1, 1990. Several statistical and other factors that attempt to anticipate future events are used in calculating the expense and liability related to these plans. These factors include key assumptions, such as a discount rate and expected return on plan assets. In addition, our actuarial consultants use subjective factors such as withdrawal and mortality rates to estimate these liabilities. The actuarial assumptions we use may differ materially from actual results due to changing market and economic conditions, higher or lower withdrawal rates or longer or shorter life spans of participants. These differences may result in a significant impact to the amount of pension or postretirement healthcare benefit expenses we have recorded or may record in the future. An analysis for the expense associated with our pension plan is difficult due to the variety of assumptions utilized. For example, one of the significant assumptions used to determine projected benefit obligation is the discount rate. At December 31, 2017, a 25 basis point change in the discount rate would change the projected benefit obligation by approximately \$1.1 million and the annual pension

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expense by approximately \$9,000. Additionally, a 25 basis point change in the expected return on plan assets would change the pension expense by approximately \$66,000.

Share-Based Compensation

We measure the cost of employee services received in exchange for an award of equity instruments and recognize this cost over the period during which an employee is required to provide the services, based on the fair value of the award at the date of the grant as determined by the Black-Scholes valuation method for stock options, or current publicly traded market price on the grant date for restricted stock units.

Product Warranties

The Company's warranty reserve is to cover the products sold. The warranty accrual is based on historical claims information. The warranty reserve is reviewed and adjusted as necessary on a quarterly basis and is presented within Note 8 of the consolidated financial statements.

Other significant accounting policies

Other significant accounting policies, not involving the same level of uncertainties as those discussed above, are nevertheless important to an understanding of our financial statements. See Note 1 to the consolidated financial statements, Summary of Significant Accounting Policies, which discusses accounting policies that must be selected by us when there are acceptable alternatives.

New Accounting Pronouncements

Accounting Standards Adopted in Fiscal 2017

In January 2017, the FASB issued Accounting Standards Update ("ASU") 2017-04, "Intangibles – Goodwill and Other (Topic 350): Simplifying the Test for Goodwill Impairment." ASU 2017-04 eliminates Step 2 of the former goodwill impairment test along with amending other parts of the goodwill impairment test. Under this ASU, an entity should perform its annual or interim goodwill impairment test by comparing the fair value of the reporting unit with its carrying amount, and should recognize an impairment charge for the amount by which the carrying amount exceeds the reporting unit's fair value with the loss not exceeding the total amount of goodwill allocated to that reporting unit. This ASU is effective for annual periods beginning after December 15, 2019, and interim periods therein with early adoption permitted for interim or annual goodwill impairment tests performed after January 1, 2017. The Company has adopted ASU 2017-04 effective as of January 1, 2017. The provisions of ASU 2017-04 did not have a material effect on the Company's financial condition, results of operations, or cash flows.

In March 2016, the FASB issued ASU 2016-09, "Compensation—Stock Compensation: Improvements to Employee Share-Based Payment Accounting," which changes the accounting for certain aspects of share-based payments to employees. The new guidance requires, among its other provisions, that excess tax benefits (which represent the excess of actual tax benefits received at the date of vesting or settlement over the benefits recognized over the vesting period or upon issuance of share-based payments) and tax deficiencies (which represent the amount by which actual tax benefits received at the date of vesting or settlement is lower than the benefits recognized over the vesting period or upon issuance of share-based payments) be recorded in the income statement as an increase or decrease in income taxes when the awards vest or are settled. This is in comparison to the prior requirement that these excess tax benefits be recognized in additional paid-in capital and these tax deficiencies be recognized either as an offset to accumulated excess tax benefits, if any, or in the income statement. The new guidance also requires excess tax benefits to be classified along with other income tax cash flows as an operating activity in the statement of cash flows rather than, as

previously required, a financing activity. The new guidance allows companies to elect a change to an accounting policy to account for forfeitures as they occur. The new guidance is effective for the first quarter of our fiscal year ended December 31, 2017, with early adoption permitted.

We have adopted ASU 2016-09 effective January 1, 2017 on a prospective basis where permitted by the new standard. As a result of this adoption:

- We recognized discrete tax benefits of \$0.4 million in the income tax expense line item of our Consolidated Statement of Operations for the year ended December 31, 2017 related to excess tax benefits upon vesting or settlement in that period.

- We elected to adopt the cash flow presentation of the excess tax benefits prospectively, commencing with our Consolidated Statements of Cash Flows for the year ended December 31, 2017, where these benefits are classified along with other income tax cash flows as an operating activity.

•We have elected to change our accounting policy to account for forfeitures as they occur. This change was applied on a modified retrospective basis with a cumulative effect adjustment to reduce retained earnings by \$0.1 million as of January 1, 2017.

•We excluded the excess tax benefits from the assumed proceeds available to repurchase shares in the computation of our diluted earnings per share for the year ended December 31, 2017.

In March 2016, the FASB issued ASU 2016-05, “Derivatives and Hedging: Effect of Derivative Contract Novations on Existing Hedge Accounting Relationships.” ASU 2016-05 amends Topic 815 to clarify that novation of a derivative (replacing one of the parties to a derivative instrument with a new party) designated as the hedging instrument would not, in and of itself, be considered a termination of the derivative instrument or a change in critical terms requiring discontinuation of the designated hedging relationship. ASU 2016-05 is effective for annual periods beginning after December 15, 2016, and interim periods within those annual periods. The Company has adopted ASU 2016-05 on a prospective basis. The provisions of ASU 2016-05 had no effect on the Company’s financial condition, results of operations, or cash flows.

In July 2015, the FASB issued ASU 2015-11, “Simplifying the Measurement of Inventory.” ASU 2015-11 requires inventory within the scope of the ASU (i.e., first-in, first-out (“FIFO”) or average cost) to be measured using the lower of cost and net realizable value. Inventory excluded from the scope of the ASU (i.e., last-in, first-out (“LIFO”) or the retail inventory method) will continue to be measured at the lower of cost or market. The ASU also amends some of the other guidance in Topic 330, “Inventory,” to more clearly articulate the requirements for the measurement and disclosure of inventory. ASU 2015-11 is effective for annual periods beginning after December 15, 2016, and interim periods within those annual periods. The Company has adopted ASU 2015-11 on a prospective basis. The provisions of ASU 2015-11 did not have a material effect on the Company’s financial condition, results of operations, or cash flows.

Accounting Standards Yet to be Adopted

In August 2017, the FASB issued ASU 2017-12, “Derivatives and Hedging (Topic 815): Targeted Improvements to Accounting for Hedging Activities.” ASU 2017-12 expands an entity’s ability to apply hedge accounting for nonfinancial and financial risk components and allow for a simplified approach for fair value hedging of interest rate risk. ASU 2017-12 eliminates the need to separately measure and report hedge ineffectiveness and generally requires the entire change in fair value of a hedging instrument to be presented in the same income statement line as the hedged item. Additionally, ASU 2017-12 simplifies the hedge documentation and effectiveness assessment under the previous guidance. The guidance is effective for annual periods, and interim periods within those annual periods, beginning after December 15, 2018. Early adoption is permitted. We plan to adopt the standard on January 1, 2019. We do not expect the adoption of this guidance to have a material impact on our consolidated financial statements.

In May 2017, the FASB issued ASU 2017-09, “Compensation – Stock Compensation (Topic 718): Scope of Modification Accounting.” ASU 2017-09 clarifies when changes to the terms or conditions of a share-based payment award must be accounted for as a modification. The new guidance will reduce diversity in practice and result in fewer changes to the terms of an award being accounted for as a modification. Under ASU 2017-09, an entity will not apply modification accounting to a share-based payment award if the award’s fair value, vesting conditions and classification as an equity or liability instrument are the same immediately before and after the change. ASU 2017-09 will be applied prospectively to awards modified on or after the adoption date. The guidance is effective for annual periods, and interim periods within those annual periods, beginning after December 15, 2017. Early adoption is permitted. We plan to adopt the standard on January 1, 2018. We do not expect the adoption of this guidance to have a material impact on our consolidated financial statements.

In March 2017, the FASB issued ASU 2017-07, “Compensation – Retirement Benefits (Topic 715): Improving the Presentation of Net Periodic Pension Cost and Net Periodic Postretirement Benefit Cost.” Under existing GAAP, an entity is required to present all components of net periodic pension cost and net periodic postretirement benefit cost aggregated as a net amount in the income statement, and this net amount may be capitalized as part of an asset where appropriate. ASU 2017-07 requires that an employer report the service cost component in the same line item or items as other compensation costs arising from services rendered by the pertinent employees during the period, and requires the other components of net periodic pension cost and net periodic postretirement benefit cost to be presented in the income statement separately from the service cost component and outside a subtotal of income from operations, if one is presented. Additionally, only the service cost component is eligible for capitalization, when applicable. The amendments in ASU 2017-07 shall be applied retrospectively for the presentation of the service cost component and the other components of net periodic pension cost and net periodic postretirement benefit cost in the income statement and prospectively, on and after the effective date, for the capitalization of the service cost component of net periodic pension cost and net periodic postretirement benefit in assets. ASU 2017-07 becomes effective for the Company on January 1, 2018. Early adoption is permitted. We plan to adopt this standard on January 1, 2018. We do not expect the adoption of this guidance to have a material impact on our consolidated financial statements.

In January 2017, the FASB issued ASU 2017-01, “Business Combinations (Topic 805): Clarifying the Definition of a Business.” ASU 2017-01 clarifies the definition of a business with the objective of adding guidance to assist entities with evaluating

whether transactions should be accounted for as acquisitions (or disposals) of assets or businesses. The definition of a business affects many areas of accounting including acquisitions, disposals, goodwill, and consolidation. The adoption of ASU 2017-01 is effective for annual periods beginning after December 15, 2017, including interim periods within those periods. The amendments should be applied prospectively on or after the effective dates. We plan to adopt the standard on January 1, 2018. We do not expect the adoption of this guidance to have a material impact on our consolidated financial statements.

In November 2016, the FASB issued ASU 2016-18, "Statement of Cash Flows (Topic 230): Restricted Cash." ASU 2016-18 will require a change during the period in the total of cash, cash equivalents, and amounts generally described as restricted cash or restricted cash equivalents to be included with cash and cash equivalents when reconciling the beginning-of-period and end-of-period total amounts shown on the statement of cash flows. ASU 2016-18 is effective for annual reporting periods beginning after December 15, 2017, including interim periods within that year. The Company plans to adopt the provisions of this standard on January 1, 2018, and will begin presenting segregated cash and restricted cash activity on the consolidated statements of cash flows using a retrospective transition method for each period presented.

In August 2016, the FASB issued ASU 2016-15, "Statement of Cash Flows (Topic 230): Classification of Certain Cash Receipts and Cash Payments." ASU 2016-15 provides guidance on how certain cash receipts and cash payments are presented and classified in the statement of cash flows. ASU 2016-15 is effective for annual periods beginning after December 15, 2017, and interim periods within those fiscal years. ASU 2016-15 will require adoption on a retrospective basis, unless it is impracticable to apply, in which case we would be required to apply the amendments prospectively as of the earliest date practicable. Early adoption is permitted, including adoption in an interim period. We plan to adopt this standard on January 1, 2018. The Company is currently in the process of evaluating the impact of ASU 2016-15 on its consolidated financial statements.

In February 2016, the FASB issued ASU 2016-02, "Leases." ASU 2016-02 establishes a right-of-use ("ROU") model that requires a lessee to record a ROU asset and a lease liability on the balance sheet for all leases with terms longer than 12 months. Leases will be classified as either finance or operating, with classification affecting the pattern of expense recognition in the income statement. For public companies, this guidance is effective for annual periods beginning after December 15, 2018. We currently expect to adopt ASU 2016-02 as of January 1, 2019, under the modified prospective method. Our evaluation of ASU 2016-02 is ongoing and not complete. The Company believes that the new standard will have a material impact on its consolidated balance sheet due to the recognition of ROU assets and liabilities for the Company's operating leases but it will not have a material impact on its income statement or liquidity. We expect our accounting for capital leases to remain substantially unchanged. The ASU also will require disclosures to help investors and other financial statement users better understand the amount, timing and uncertainty of cash flows arising from leases. These disclosures include qualitative and quantitative requirements, providing additional information about the amounts recorded in the financial statements. Our leasing activity is primarily related to buildings and we have various sale-leaseback transactions. The Company is continuing to evaluate potential impacts to our financial statements.

In May 2014, the FASB issued ASU 2014-09, "Revenue From Contracts With Customers." ASU 2014-09 supersedes nearly all existing revenue recognition principles under GAAP. The core principle of ASU 2014-09 is to recognize revenues when promised goods or services are transferred to customers in an amount that reflects the consideration an entity expects to be entitled to for those goods or services using a defined five-step process. More judgment and estimates may be required to achieve this principle than under existing GAAP. In 2016, the FASB issued accounting standards updates to address implementation issues and to clarify the guidance for identifying performance obligations, licenses and determining if a company is the principal or agent in a revenue arrangement. ASU 2014-09 and its clarifying amendments are effective for annual periods beginning after December 15, 2017, including interim periods therein, using either of the following transition methods: (i) a full retrospective approach reflecting the

application of the standard in each prior reporting period with the option to elect certain practical expedients or (ii) a modified retrospective approach with the cumulative effect upon initial adoption recognized at the date of adoption, which includes additional footnote disclosures.

We adopted ASU 2014-09 on January 1, 2018, under the modified retrospective method where the cumulative effect is recognized through retained earnings as of the date of adoption. Historically, we have recognized revenue related to contracts predominantly under the percentage of completion method of accounting for revenue recognition. Given our diverse customer base and product lines, there are varying fact patterns that must be evaluated within each of our contracts to determine the appropriate pattern of revenue recognition upon the adoption of ASU 2014-09. Certain contract arrangements that were historically recognized over time under our previous policies will now be recognized at a point in time upon completion of the contracts under the new standard. However, based on the Company's evaluation of existing contracts that were not substantially complete as of January 1, 2018, the Company has estimated that the cumulative adjustment to beginning retained earnings will not be material. Additionally, the Company's future disclosures will be expanded to comply with the standard.

Item 7A. Quantitative and Qualitative Disclosures About Market Risk

We are exposed to certain market risks, primarily changes in interest rates. Market risk is the potential loss arising from adverse changes in market rates and prices, such as foreign currency exchange and interest rates. For the Company, these exposures are primarily related to changes in interest rates. We do not currently hold any derivatives or other financial instruments purely for trading

or speculative purposes. However, we do have an interest rate swap in place as of December 31, 2017 to hedge against a portion of our interest rate exposure related to debt indexed to LIBOR market rates. See Note 9 to the consolidated financial statements for further information on this interest rate swap.

The carrying value of the Company's total long-term debt and current maturities of long-term debt at December 31, 2017 was \$114.8 million. Market risk was estimated as the potential decrease (increase) in future earnings and cash flows resulting from a hypothetical 10% increase (decrease) in the Company's estimated weighted average borrowing rate at December 31, 2017. Most of the interest on the Company's debt is indexed to either the LIBOR or EURIBOR market rates. The estimated impact of a hypothetical 10% change in the estimated weighted average borrowing rate, excluding the portion of debt which has an interest rate fixed by the interest rate swap described above, at December 31, 2017 is \$0.3 million on an annual basis.

The Company has wholly-owned subsidiaries located in the Netherlands, Canada, the People's Republic of China, Mexico, United Kingdom, Singapore, and Chile. In the past, we have not hedged our foreign currency exposure, and fluctuations in exchange rates have not materially affected our operating results. Future changes in exchange rates may positively or negatively impact our revenues, operating expenses and earnings. Due to the fact that most of our foreign sales are denominated in the local currency, we do not anticipate that exposure to foreign currency rate fluctuations will be material in the year ending December 31, 2018.

Item 8. Financial Statements and Supplementary Data

The consolidated financial statements of CECO Environmental Corp. and subsidiaries for the years ended December 31, 2017, 2016 and 2015 and other data are included in this report following the signature page of this report and incorporated into this Item 8 by reference:

<u>Cover Page</u>	F-1
<u>Report of Independent Registered Public Accounting Firm</u>	F-2
<u>Consolidated Balance Sheets</u>	F-3
<u>Consolidated Statements of Operations</u>	F-4
<u>Consolidated Statements of Comprehensive Income (Loss)</u>	F-5
<u>Consolidated Statements of Shareholders' Equity</u>	F-6 to F-7
<u>Consolidated Statements of Cash Flows</u>	F-8 to F-9
<u>Notes to Consolidated Financial Statements for the Years Ended December 31, 2017, 2016 and 2015</u>	F-10 to F-44

Item 9. Changes in and Disagreements with Accountants on Accounting and Financial Disclosure
None.

Item 9A. Controls and Procedures
Disclosure Controls and Procedures

Disclosure controls and procedures (as defined in Rule 13a-15(e) and 15d-15(e) under the Exchange Act) are controls and other procedures that are designed to provide reasonable assurance that information required to be disclosed in the reports that we file or submit under the Exchange Act is recorded, processed, summarized, and reported within the time periods specified in the SEC's rules and forms, and that such information is accumulated and made known to our management, including our Chief Executive Officer and Chief Financial Officer, as appropriate, to allow timely decisions regarding required disclosure.

In connection with the preparation of this Annual Report on Form 10-K, our management, with the participation of our Chief Executive Officer and Chief Financial Officer, carried out an evaluation of the effectiveness of the design and operation of our disclosure controls and procedures as of December 31, 2017. Based on that evaluation, our management, including our Chief Executive Officer and Chief Financial Officer, concluded that our disclosure controls and procedures were effective as of December 31, 2017.

The management of the Company does not expect that its disclosure controls and procedures will prevent all errors and all fraud. A control system, no matter how well designed and operated, can provide only reasonable, not absolute, assurance that the control system's objectives will be met. Further, the design of a control system must reflect the fact that there are resource constraints, and the benefits of controls must be considered relative to their costs. Because of the inherent limitations in all control systems, no evaluation of controls can provide absolute assurance that all control issues and instance of fraud, if any, have been detected. These inherent limitations include the realities that judgments in decision-making can be faulty, and that breakdowns can occur due to simple errors or mistakes. The design of any system of controls is based in part upon certain assumptions regarding the likelihood of future events, and there can be no assurance that any design will succeed in achieving its stated goals under all potential future conditions.

Management's Report on Internal Control over Financial Reporting

The management of the Company is responsible for the preparation and accuracy of the financial statements and other information included in this report. Under the supervision and with the participation of management, including the Company's Chief Executive Officer and Chief Financial Officer, the Company conducted an evaluation of the effectiveness of internal control over financial reporting as of December 31, 2017, based on the criteria set forth in Internal Control – Integrated Framework (2013) (the "Framework") issued by the Committee of Sponsoring Organizations of the Treadway Commission ("COSO"). Based on this assessment, management concluded that, as of December 31, 2017, its internal control over financial reporting was effective based on the Framework.

There are inherent limitations on the effectiveness of any system of internal controls and procedures, including the possibility of human error and the circumvention or overriding of the controls and procedures. Accordingly, even effective internal controls and procedures can only provide reasonable assurance of achieving their control objectives.

Item 9A includes the audit report of BDO USA, LLP on the Company's internal control over financial reporting as of December 31, 2017.

Changes in Internal Control Over Financial Reporting

There were no changes in our internal control over financial reporting during the quarter ended December 31, 2017 that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting. During fiscal year 2017, we implemented internal controls to ensure we have adequately evaluated our contracts and properly assessed the impact of the new accounting standards related to revenue recognition on our financial statements to facilitate the adoption on January 1, 2018. We do not expect significant changes to our internal control over financial reporting due to the adoption of the new standards.

Report of Independent Registered Public Accounting Firm

Shareholders and Board of Directors

CECO Environmental Corp. and Subsidiaries

Cincinnati, Ohio

Opinion on Internal Control over Financial Reporting

We have audited CECO Environmental Corp. and Subsidiaries' (the "Company's") internal control over financial reporting as of December 31, 2017, based on criteria established in Internal Control – Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission (the "COSO criteria"). In our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2017, based on the COSO criteria.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) ("PCAOB"), the consolidated balance sheets of the Company as of December 31, 2017 and 2016, the related consolidated statements of operations and comprehensive income (loss), shareholders' equity, and cash flows for each of the three years in the period ended December 31, 2017, and the related notes and our report dated March 9, 2018, expressed an unqualified opinion thereon.

Basis for Opinion

The Company's management is responsible for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting, included in the accompanying Item 9A, Management's Report on Internal Control over Financial Reporting. Our responsibility is to express an opinion on the Company's internal control over financial reporting based on our audit. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audit of internal control over financial reporting in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects. Our audit included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audit also included performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

Definition and Limitations of Internal Control over Financial Reporting

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding

prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

/s/ BDO USA, LLP

Chicago, Illinois

March 9, 2018

Item 9B. Other Information

None.

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PART III

Item 10. Directors, Executive Officers and Corporate Governance

The information called for by this Item 10 of Part III of Form 10-K is incorporated by reference to the information set forth in our definitive proxy statement relating to our 2018 Annual Meeting of Stockholders to be filed pursuant to Regulation 14A under the Exchange Act within 120 days from December 31, 2017 (the “Proxy Statement”). Reference is also made to the information appearing in Item 1 of Part I of this Annual Report on Form 10-K under the caption “Business— Executive Officers of the Registrant.”

Item 11. Executive Compensation

The information called for by this Item 11 of Part III of Form 10-K is incorporated by reference to the Proxy Statement.

Item 12. Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters

The information called for by this Item 12 of Part III of Form 10-K is incorporated by reference to the Proxy Statement.

Securities Authorized for Issuance Under Equity Compensation Plans

EQUITY COMPENSATION PLAN INFORMATION

December 31, 2017	(a)	(b)	(c)
			Number of securities
			remaining available for
	Number of securities	Weighted-average	future issuance under
	to be issued upon	exercise price of	equity compensation
	exercise of outstanding	outstanding options and	plans (excluding
	options and	rights,	securities reflected in
Plan Category	rights	compensation plans	column (a))
Equity compensation plans approved by security holders			
2007 Equity Incentive Plan ¹	852,255	\$ 7.39	—
2017 Equity and Incentive Plan ²	435,749	\$ 1.41	2,048,355
Employee Stock Purchase Plan ³	22,368	\$ 4.36	1,353,879
Equity compensation plans not approved by security holders			
TOTAL	1,310,372	\$ 7.68	3,402,234

- 1 The 1997 Plan was replaced with the 2007 Plan. The 2007 Plan was replaced with the 2017 Equity and Incentive Plan. In 2017, 54,000 restricted stock units were awarded to plan participants. As of May 16, 2017 no further grants will be made under the 2007 Plan. The 1997 Plan and 2007 Plan remain in effect solely for the purpose of the continued administration of the options currently outstanding under the 1997 Plan and 2007 Plan.
- 2 The 2017 Equity and Incentive Plan was approved by our shareholders on May 16, 2017. We have reserved 1.9 million shares of our common stock for issuance under our 2017 Equity Incentive Plan. In 2017, 128,000 options, 351,000 restricted stock units and 700,000 performance units were awarded to plan participants under the 2017 Equity and Incentive Plan.
- 3 The Employee Stock Purchase Plan was approved by our shareholders on May 21, 2009.

Item 13. Certain Relationships and Related Transactions, and Director Independence

The information called for by this Item 13 of Part III of Form 10-K is incorporated by reference to the Proxy Statement.

Item 14. Principal Accounting Fees and Services

The information called for by this Item 14 of Part III of Form 10-K is incorporated by reference to the Proxy Statement.

PART IV

Item 15. Exhibits and Financial Statement Schedules

1. Financial statements are set forth in this report following the signature page of this report.
2. Financial statement schedules are omitted because they are not applicable or because the required information is shown in the financial statements or in the notes thereto.
3. Exhibit Index. The exhibits listed below, as part of Form 10-K, are numbered in conformity with the numbering used in Item 601 of Regulation S-K and relate to SEC File No. 0-07099, unless otherwise indicated.

Exhibit

Number

- ¥2.1 Agreement and Plan of Merger, by and among PMFG, Inc. the Company, Top Gear Acquisition Inc. and Top Gear Acquisition II LLC, dated as of May 3, 2015 (Incorporated by reference to Exhibit 2.1 to the Company's Current Report on Form 8-K filed with the SEC on May 4, 2015)
- 3(i) Certificate of Incorporation (Incorporated by reference to Exhibit 3(i) to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2001)
- 3(ii) Amended and Restated Bylaws (Incorporated by reference to Exhibit 3.1 to the Company's Current Report on Form 8-K filed with the SEC on December 13, 2017)
- **10.1 CECO Environmental Corp. 1997 Stock Option Plan and Amendment (Incorporated by reference to Exhibit 4 to the Company's Form S-8 filed with the SEC on March 24, 2000)
- **10.2 Summary term sheet of arrangement governing consulting services provided by Icarus Investment Corp. (Incorporated by reference to Exhibit 10.4 to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2012)
- 10.3 Warrant Agreement, dated as of December 28, 2006, by and between the Company and Icarus Investment Corp. (Incorporated by reference to Exhibit 10.3 to the Company's Current Report on Form 8-K filed with the SEC on December 28, 2006)
- 10.4 Amendment No. 1 to Warrant Agreement, dated as of December 7, 2016, by and between the Company and Icarus Investment Corp. (Incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed with the SEC on December 9, 2016)
- **10.5 Second Amended and Restated CECO Environmental Corp. 2007 Equity Incentive Plan (Incorporated by reference to Exhibit 10.6 to the Company's Current Report on Form 8-K filed with the SEC on September 3, 2015)

- **10.6 Form of Restricted Stock Award Agreement (Incorporated by reference to Exhibit 10.41 to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2008)
- **10.7 Form of Incentive Stock Option Agreement (Incorporated by reference to Exhibit 10.12 to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2010)
- **10.8 Form of Non-Statutory Stock Option Agreement (Incorporated by reference to Exhibit 10.13 to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2010)
- **10.9 CECO Environmental Corp. Employee Stock Purchase Plan (Incorporated by reference to Exhibit A to the Company's definitive proxy statement on Schedule 14A filed with the SEC on April 13, 2009)
- **10.10 Executive Employment Agreement, effective as of February 15, 2010, by and between the Company and Jeffrey Lang. (Incorporated by reference to Exhibit 10.4 to the Company's Quarterly Report on Form 10-Q filed with the SEC on May 14, 2010)
- **10.11 First Amendment to Executive Employment Agreement, effective as of September 4, 2013, by and between the Company and Jeffrey Lang (Incorporated by reference to Exhibit 10.6 to the Company's Quarterly Report on Form 10-Q filed with the SEC on November 8, 2013)

Exhibit

Number

- **10.12 Summary term sheet of arrangement governing consulting services provided by JMP Fam Holdings Inc. to the Company (Incorporated by reference to Exhibit 10.22 to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2011)
- 10.13 Amended and Restated Credit Agreement, dated as of September 3, 2015, among the Company and certain of its subsidiaries, the Lenders party thereto, and Bank of America, N.A. (Incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed with the SEC on September 3, 2015)
- 10.14 Securities Pledge Agreement, dated August 27, 2013, by and among the Company, the Subsidiaries named therein and Bank of America, N.A., as Administrative Agent (Incorporated by reference to Exhibit 10.5 to the Company's Current Report on Form 8-K filed with the SEC on September 3, 2015)
- 10.15 Director and Officer Indemnification Agreement, dated as of May 12, 2016, by and between the Company and the Directors and Officers of the Company (Incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed with the SEC on May 16, 2016)
- **10.16 Executive Employment Agreement, effective as of January 9, 2017, by and between the Company and Matthew Eckl (Incorporated by reference to Exhibit 10.1 to the Company's Quarterly Report on Form 10-Q filed with the SEC on May 10, 2017)
- **10.17 Separation Agreement, effective as of February 1, 2017, by and between the Company and Jeff Lang (Incorporated by reference to Exhibit 10.2 to the Company's Quarterly Report on Form 10-Q filed with the SEC on May 10, 2017)
- **10.18 Executive Employment Agreement, effective as of January 26, 2017, by and between the Company and Dennis Sadlowski (Incorporated by reference to Exhibit 10.3 to the Company's Quarterly Report on Form 10-Q filed with the SEC on May 10, 2017)
- **10.19 Form of Incentive Stock Option Agreement (Incorporated by reference to Exhibit 10.2 to the Company's Quarterly Report on Form 10-Q filed with the SEC on August 9, 2017)
- **10.20 Form of Nonqualified Stock Option Agreement (Incorporated by reference to Exhibit 10.3 to the Company's Quarterly Report on Form 10-Q filed with the SEC on August 9, 2017)
- **10.21 Form of Restricted Stock Units Agreement for Directors (Incorporated by reference to Exhibit 10.4 to the Company's Quarterly Report on Form 10-Q filed with the SEC on August 9, 2017)
- **10.22 Form of Restricted Stock Units Agreement for Employees (Incorporated by reference to Exhibit 10.5 to the Company's Quarterly Report on Form 10-Q filed with the SEC on August 9, 2017)
- **10.23 Executive Employment Agreement, dated as of June 10, 2017, between the Company and Dennis Sadlowski (Incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed with the SEC on June 12, 2017)
- **10.24 CECO Environmental Corp. 2017 Equity and Incentive Compensation Plan (Incorporated by reference to Exhibit 4.3 to the Registrant's Registration Statement on Form S-8 filed on May 16, 2017 (Registration No.

333-218030))

- **10.25 Separation Agreement, effective as of July 21, 2017, by and between the Company and Edward J. Prajzner (Incorporated by reference to Exhibit 10.1 to the Company's Quarterly Report on Form 10-Q filed with the SEC on November 8, 2017)
- *10.26 Amendment No. 1 to Amended and Restated Credit Agreement
- 10.27 Amendment No. 2 to Amended and Restated Credit Agreement (Incorporated by reference to Exhibit 10.1 to the Company's Quarterly Report on Form 10-Q filed with the SEC on August 9, 2017)
- 10.28 Amendment No. 3 to Amended and Restated Credit Agreement (Incorporated by reference to Exhibit 10.2 to the Company's Quarterly Report on Form 10-Q filed with the SEC on November 8, 2017)
- *21 Subsidiaries of the Company
- *23.1 Consent of BDO USA, LLP

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Exhibit

Number

- *31.1 [Rule 13\(a\)/15d-14\(a\) Certification by Chief Executive Officer](#)
- *31.2 [Rule 13\(a\)/15d-14\(a\) Certification by Chief Financial Officer](#)
- *32.1 [Certification of Chief Executive Officer \(18 U.S. Section 1350\)](#)
- *32.2 [Certification of Chief Financial Officer \(18 U.S. Section 1350\)](#)
- *101.INS XBRL Instance Document
- *101.SCH XBRL Taxonomy Extension Schema Document
- *101.CAL XBRL Taxonomy Extension Calculation Linkbase Document
- *101.DEF XBRL Taxonomy Extension Definition Linkbase Document
- *101.LAB XBRL Taxonomy Extension Label Linkbase Document
- *101.PRE XBRL Taxonomy Extension Presentation Linkbase Document

‡ Schedules, exhibits and similar attachments to the agreement have been omitted pursuant to Item 601(b)(2) of Regulation S-K. The Company will furnish supplementally a copy of any omitted schedule, exhibit or similar attachment to the SEC upon request.

* Filed or furnished herewith

** Management contracts or compensation plans or arrangement

Item 16. Form 10-K Summary

Not applicable.

SIGNATURES

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

CECO ENVIRONMENTAL CORP.

By: /S/ MATTHEW ECKL
Matthew Eckl
Chief Financial Officer and Secretary
March 9, 2018

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

Principal Executive Officer:

/S/ DENNIS SADLOWSKI March 9, 2018
Dennis Sadlowski

Chief Executive Officer and Director

Principal Financial Officer:

/S/ MATTHEW ECKL March 9, 2018
Matthew Eckl

Chief Financial Officer and Secretary

Principal Accounting Officer:

/S/ PAUL GOHR March 9, 2018
Paul Gohr

Chief Accounting Officer

/S/ JASON DEZWIREK March 9, 2018
Jason DeZwirek

Chairman of the Board and Director

/S/ ERIC M. GOLDBERG March 9, 2018
Eric M. Goldberg

CECO ENVIRONMENTAL CORP. AND SUBSIDIARIES

CONSOLIDATED FINANCIAL STATEMENTS

F-1

Report of Independent Registered Public Accounting Firm

Shareholders and Board of Directors

CECO Environmental Corp. and Subsidiaries

Cincinnati, Ohio

Opinion on the Consolidated Financial Statements

We have audited the accompanying consolidated balance sheets of CECO Environmental Corp. and Subsidiaries (the “Company”) as of December 31, 2017 and 2016, the related consolidated statements of operations and comprehensive income (loss), shareholders’ equity, and cash flows for each of the three years in the period ended December 31, 2017, and the related notes (collectively referred to as the “consolidated financial statements”). In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Company and subsidiaries at December 31, 2017 and 2016, and the results of their operations and their cash flows for each of the three years in the period ended December 31, 2017, in conformity with accounting principles generally accepted in the United States of America.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (“PCAOB”), the Company's internal control over financial reporting as of December 31, 2017, based on criteria established in Internal Control – Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission (“COSO”) and our report dated March 9, 2018 expressed an unqualified opinion thereon.

Basis for Opinion

These consolidated financial statements are the responsibility of the Company’s management. Our responsibility is to express an opinion on the Company’s consolidated financial statements based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) (“PCAOB”) and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud.

Our audits included performing procedures to assess the risks of material misstatement of the consolidated financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the consolidated financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements. We believe that our audits provide a reasonable basis for our opinion.

/s/ BDO USA, LLP

We have served as the Company's auditor since 2008.

Chicago, Illinois

March 9, 2018

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CECO ENVIRONMENTAL CORP. AND SUBSIDIARIES

CONSOLIDATED BALANCE SHEETS

(\$ in thousands, except share data)	December 31,	
	2017	2016
ASSETS		
Current assets:		
Cash and cash equivalents	\$29,902	\$45,824
Restricted cash	591	1,498
Accounts receivable, net	67,990	83,062
Costs and estimated earnings in excess of billings on uncompleted contracts	33,947	38,123
Inventories, net	20,969	21,487
Prepaid expenses and other current assets	10,760	13,560
Prepaid income taxes	1,930	1,590
Assets held for sale	7,853	7,834
Total current assets	173,942	212,978
Property, plant and equipment, net	23,400	27,270
Goodwill	166,951	170,153
Intangible assets – finite life, net	49,956	60,728
Intangible assets – indefinite life	19,691	22,042
Deferred charges and other assets	4,609	5,463
Total assets	\$438,549	\$498,634
LIABILITIES AND SHAREHOLDERS' EQUITY		
Current liabilities:		
Current portion of debt	\$11,296	\$8,827
Accounts payable and accrued expenses	70,786	95,610
Billings in excess of costs and estimated earnings on uncompleted contracts	20,469	35,085
Note payable	5,300	5,300
Income taxes payable	—	1,536
Total current liabilities	107,851	146,358
Other liabilities	30,382	34,864
Debt, less current portion	103,537	114,366
Deferred income tax liability, net	10,210	12,964
Total liabilities	251,980	308,552
Commitments and contingencies		
Shareholders' equity:		
Preferred stock, \$.01 par value; 10,000 shares authorized, none issued	—	—
Common stock, \$.01 par value; 100,000,000 shares authorized, 34,707,924 and 34,300,209 shares issued and outstanding at December 31, 2017 and 2016, respectively	347	343
Capital in excess of par value	248,170	244,878
Accumulated loss	(52,673)	(41,741)
Accumulated other comprehensive loss	(8,919)	(13,042)
	186,925	190,438

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Less treasury stock, at cost, 137,920 shares at December 31, 2017 and 2016	(356)	(356)
Total shareholders' equity	186,569	190,082
Total liabilities and shareholders' equity	\$438,549	\$498,634

The notes to consolidated financial statements are an integral part of the above statements.

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CECO ENVIRONMENTAL CORP. AND SUBSIDIARIES

CONSOLIDATED STATEMENTS OF OPERATIONS

(\$ in thousands, except share and per share data)	Year Ended December 31,		
	2017	2016	2015
Net sales	\$345,051	\$417,011	\$367,422
Cost of sales	231,857	282,152	258,251
Gross profit	113,194	134,859	109,171
Selling and administrative expenses	88,975	81,743	67,329
Acquisition and integration expenses	—	524	7,940
Amortization and earnout expenses	7,132	20,231	25,613
Intangible asset and goodwill impairment	7,168	57,923	3,340
Restructuring expenses	1,895	—	—
Income (loss) from operations	8,024	(25,562)	4,949
Other income (expense), net	106	310	(2,081)
Interest expense	(6,721)	(7,712)	(5,964)
Income (loss) before income taxes	1,409	(32,964)	(3,096)
Income tax expense	4,438	5,290	2,638
Net loss	\$(3,029)	\$(38,254)	\$(5,734)
Net loss attributable to noncontrolling interest	\$—	\$(36)	\$(132)
Net loss attributable to CECO Environmental Corp.	\$(3,029)	\$(38,218)	\$(5,602)
Loss per share:			
Basic	\$(0.09)	\$(1.12)	\$(0.19)
Diluted	\$(0.09)	\$(1.12)	\$(0.19)
Weighted average number of common shares outstanding:			
Basic	34,445,256	33,979,549	28,791,662
Diluted	34,445,256	33,979,549	28,791,662

The notes to consolidated financial statements are an integral part of the above statements.

CECO ENVIRONMENTAL CORP. AND SUBSIDIARIES

CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME (LOSS)

(\$ in thousands)	Year Ended December 31,		
	2017	2016	2015
Net loss	\$(3,029)	\$(38,254)	\$(5,734)
Other comprehensive income (loss), net of tax:			
Translation income (loss)	4,021	(3,864)	(2,664)
Interest rate swap	180	312	—
Minimum pension/postretirement liability adjustment	(78)	87	(292)
Comprehensive income (loss)	1,094	(41,719)	(8,690)
Net loss attributable to noncontrolling interest	—	(36)	(132)
Comprehensive income (loss) attributable to CECO Environmental Corp.	\$1,094	\$(41,683)	\$(8,558)

The notes to consolidated financial statements are an integral part of the above statements.

CECO ENVIRONMENTAL CORP. AND SUBSIDIARIES

CONSOLIDATED STATEMENTS OF SHAREHOLDERS' EQUITY

(in thousands)

	Common Stock Shares	Amount	Capital in excess of par value	Accum. Earnings (Loss)	Accum. Other Comp. Loss	Treasury Stock Shares	Amount	Total CECO Shareholder Equity	Noncontro Interest	Total Shareholders' Equity
Balance January 1, 2015	26,405	\$ 264	\$ 168,886	\$ 19,051	\$(6,621)	(138)	\$(356)	\$ 181,224	\$ —	\$ 181,224
Net loss for the year ended										
December 31, 2015				(5,602)				(5,602)	(132)	(5,734)
Common stock dividends				(7,977)				(7,977)		(7,977)
Exercise of stock options and dividend reinvestment										
issuances	36	—	205					205		205
Excess tax benefit from stock options exercised		—	44					44		44
Share based compensation earned	13	—	2,070					2,070		2,070
Stock issued for acquisition	7,602	76	72,069					72,145		72,145
Fair value of noncontrolling interest acquired								—	6,000	6,000
Adjustment for minimum pension/post retirement										
liability, net of tax of \$(178)					(292)			(292)		(292)

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Translation loss					(2,664)		(2,664)		(2,664)	
Balance December 31, 2015	34,056	\$ 340	\$ 243,274	\$ 5,472	\$(9,577)	(138)	\$(356)	\$ 239,153	\$ 5,868	\$ 245,021
Net loss for the year ended										
December 31, 2016					(38,218)		(38,218)	(36)	(38,254)	
Common stock dividends					(8,995)		(8,995)		(8,995)	
Exercise of stock options and dividend reinvestment										
issuances	215	2	1,513				1,515		1,515	
Excess tax benefit from stock options exercised								137	137	
Restricted stock units issued	17		(9)				(9)		(9)	
Share based compensation earned	27	1	2,457				2,458		2,458	
Issuance of shares for cashless warrant exercise (See Note 10)	90	1	(1)							
Stock repurchase and retirement	(105)	(1)	(1,237)				(1,238)		(1,238)	
Noncontrolling interest acquisitions (See Note 17)					(1,256)		(1,256)	(5,832)	(7,088)	
Adjustment for minimum pension/post retirement liability, net of tax of \$53					87		87		87	
Adjustment for interest rate swap					312		312		312	

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liability, net of tax of \$181										
Translation										
loss				(3,864)			(3,864)			(3,864)
Balance										
December 31, 2016	34,300	\$ 343	\$ 244,878	\$(41,741)	\$(13,042)	(138)	\$(356)	\$ 190,082	\$ -	\$ 190,082
Net loss for the year ended										
December 31, 2017				(3,029)			(3,029)			(3,029)
Cumulative effect adjustment adopting ASU 2016-09 (See Note 1)			177	(111)			66			66
Common stock dividends				(7,792)			(7,792)			(7,792)
Exercise of stock options and dividend reinvestment										
issuances	291	3	1,292				1,295			1,295
Restricted stock units issued	92	1	(136)				(135)			(135)
Share based compensation earned	25	—	1,959				1,959			1,959
Adjustment for minimum pension/post retirement										
liability, net of tax of \$(48)				(78)			(78)			(78)
Adjustment for interest rate swap										
liability, net of tax of \$103				180			180			180
Translation income				4,021			4,021			4,021
Balance										
December 31, 2017	34,708	\$ 347	\$ 248,170	\$(52,673)	\$(8,919)	(138)	\$(356)	\$ 186,569	\$ -	\$ 186,569

The notes to consolidated financial statements are an integral part of the above statements.

Accumulated Other Comprehensive Loss

Components of accumulated other comprehensive loss in shareholders' equity:

	Translation loss	Interest rate swap liability adjustment	Minimum pension/ post retirement liability adjustment	Accumulated other comprehensive loss
(\$ in thousands)				
January 1, 2015	\$ (1,743)	—	\$ (4,878)	\$ (6,621)
2015 activity	(2,664)	—	(292)	(2,956)
Balance December 31, 2015	\$ (4,407)	—	\$ (5,170)	\$ (9,577)
2016 activity	(3,864)	312	87	(3,465)
Balance December 31, 2016	\$ (8,271)	312	\$ (5,083)	\$ (13,042)
2017 activity	4,021	180	(78)	4,123
Balance December 31, 2017	\$ (4,250)	\$ 492	\$ (5,161)	\$ (8,919)

The notes to consolidated financial statements are an integral part of the above statements.

CECO ENVIRONMENTAL CORP. AND SUBSIDIARIES

CONSOLIDATED STATEMENTS OF CASH FLOWS

(\$ in thousands)	Year Ended December 31,		
	2017	2016	2015
Cash flows from operating activities:			
Net loss	\$(3,029)	\$(38,254)	\$(5,734)
Adjustments to reconcile net loss to net cash provided by			
operating activities:			
Depreciation and amortization	16,088	18,903	16,520
Unrealized foreign currency (gain) loss	(2,103)	777	2,364
Net (gain) loss on interest rate swaps	(327)	95	—
Impairment of property and equipment	695	—	—
Impairment of intangible assets and goodwill	7,168	57,923	3,340
Fair value adjustments to earnout liabilities	(6,610)	4,218	11,222
Earnout payments	(7,797)	—	—
Loss on sale of property and equipment	130	217	397
Amortization of debt discount	1,033	1,054	1,062
Share based compensation expense	1,768	2,280	2,070
Bad debt expense	3,895	848	702
Inventory reserve expense	240	1,167	680
Excess tax benefit from stock options exercised	—	(137)	(44)
Deferred income tax benefit	(3,123)	(3,750)	(3,488)
Changes in operating assets and liabilities, net of acquisitions:			
Accounts receivable	14,107	13,294	(15,605)
Costs and estimated earnings in excess of billings on uncompleted			
contracts	6,232	2,537	4,447
Inventories	887	9,449	(3,477)
Prepaid expenses and other current assets	3,530	(2,218)	3,132
Deferred charges and other assets	1,585	(73)	(191)
Accounts payable and accrued expenses	(15,847)	(6,593)	(8,582)
Billings in excess of costs and estimated earnings on uncompleted			
contracts	(15,186)	7,440	4,324
Income taxes payable	(1,827)	143	1,166
Other liabilities	5,061	279	(1,668)
Net cash provided by operating activities	6,570	69,599	12,637
Cash flows from investing activities:			
Acquisitions of property and equipment	(1,028)	(1,076)	(763)
Cash paid for acquisitions, net of cash acquired	—	—	(37,481)
Net proceeds from sale of assets	368	657	3,205
Net cash used in investing activities	(660)	(419)	(35,039)
Cash flows from financing activities:			
Decrease in restricted cash	1,425	3,137	481
Net borrowings (repayments) on revolving credit lines	2,269	(13,407)	(10,727)
Borrowings of long-term debt	—	—	170,000

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Repayments of long-term debt	(11,168)	(41,768)	(107,695)
Deferred financing fees paid	(692)	—	(2,923)
Payoff of loans on life insurance policies	—	(987)	—
Earnout payments	(7,396)	(9,270)	(2,488)
Proceeds from sale-leaseback transactions	—	14,244	—
Payments on capital leases and sale-leaseback financing liability	(711)	(426)	—
Proceeds from employee stock purchase plan, exercise of stock options, and dividend reinvestment plan	1,352	1,685	205
Cash paid for repurchase of common shares	—	(188)	—
Excess tax benefit from stock options exercised	—	137	44
Dividends paid to common shareholders	(7,792)	(8,995)	(7,977)
Net cash (used in) provided by financing activities	(22,713)	(55,838)	38,920
Effect of exchange rate changes on cash and cash equivalents	881	(1,712)	(486)
Net (decrease) increase in cash and cash equivalents	(15,922)	11,630	16,032
Cash and cash equivalents at beginning of year	45,824	34,194	18,162
Cash and cash equivalents at end of year	\$29,902	\$45,824	\$34,194

The notes to consolidated financial statements are an integral part of the above statements.

CECO ENVIRONMENTAL CORP. AND SUBSIDIARIES

SUPPLEMENTAL DISCLOSURES OF CASH FLOW INFORMATION

(\$ in thousands)	Year Ended December 31,		
	2017	2016	2015
Non-cash transactions			
Common stock issued in business acquisitions	\$—	\$—	\$72,145
Property, plant and equipment acquired under capital leases	\$—	\$4,385	\$—
Noncontrolling interest acquired through an issuance of a note payable (See Note 17)	\$—	\$5,300	\$—
Earnout settled through an exchange of accounts receivable	\$—	\$3,272	\$—
Accrual of share repurchase	\$—	\$1,050	\$—
Cash paid during the year for:			
Interest	\$5,686	\$6,923	\$4,742
Income taxes	\$3,048	\$6,415	\$5,080

The notes to consolidated financial statements are an integral part of the above statements.

CECO ENVIRONMENTAL CORP. AND SUBSIDIARIES

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

For the Years Ended December 31, 2017, 2016 and 2015

1. Nature of Business and Summary of Significant Accounting Policies

Nature of business— CECO Environmental Corp. and its consolidated subsidiaries (“CECO,” the “Company,” “we,” “us,” or “our”) is a diversified global provider of leading highly engineered technologies to the environmental, energy, and fluid handling and filtration industrial segments, targeting specific niche-focused end markets through an attractive asset-light business model, strategically balanced across the world. CECO has over \$5 billion of installed equipment base with end users, which we target to expand and grow a higher recurring revenue of aftermarket products and services. CECO’s well-respected brands, technologies and solutions have been evolving for well over 50 years to become leading-edge technologies in specific niche global end markets.

Principles of consolidation—Our consolidated financial statements include the accounts of the following subsidiaries:

	% Owned As Of	
	December 31, 2017	
CECO Group, Inc.	100	%
CECO Group Global Holdings LLC	100	%
CECO Filters, Inc. and Subsidiaries (“CFI”)	99	%
The Kirk & Blum Manufacturing Company	100	%
CECO Air Quality Solutions, Inc.	100	%
EFFOX, Inc. (“Effox”)	100	%
Fisher-Klosterman, Inc. (“FKI”)	100	%
Flextor, Inc. (“Flextor”)	100	%
Adwest Technologies, Inc. (“Adwest”)	100	%
Aarding Thermal Acoustics B.V. (“Aarding”)	100	%
Met-Pro Technologies LLC (“Met-Pro”)	100	%
Peerless Mfg. Co. (“PMFG”)	100	%

In fiscal 2017, a new subsidiary, CECO Air Quality Solutions, Inc., was formed and merged with former subsidiary CECO Abatement Systems, Inc. Additionally, New Busch Co., Inc. (“Busch”) merged with CFI. Further, Met-Pro wholly owned subsidiaries MPC Inc., Met-Pro Industrial Services and Bio-Reaction Industries merged with Met-Pro. The Company will continue to optimize its legal entity structure through consolidation and mergers of subsidiaries in the future.

CFI includes one wholly owned subsidiary, CECO Environmental India Private Limited (f/k/a. CECO Filter India Private Limited). The noncontrolling interest in CFI is not material.

FKI includes three wholly owned subsidiaries, AVC, Inc. (“AVC.”), Emtrol LLC (“Emtrol”) and SAT Technology, Inc. (“SAT”).

Met-Pro includes eight wholly owned subsidiaries, Mefiag B. V., Met-Pro Recovery/Pollution Control Technologies, Inc., Strobic Air Corporation, Mefiag (Guangzhou) Filter Systems Ltd., Met-Pro (Hong Kong) Company Limited, Met-Pro Holding LLC, Jiangyin Zhongli Industrial Technology Co., Ltd. (“Zhongli”) and Met-Pro Chile Limitada.

CECO Group, Inc. has two wholly owned subsidiaries in Mexico, CECO Environmental Mexico S de RL de CV and CECO Environmental Services Mexico S de RL de CV.

PMFG has five wholly owned subsidiaries, Nitram Energy, Inc., PMC Acquisition, Inc., Peerless Europe, Ltd., Peerless Manufacturing Canada, Ltd., and Peerless Asia-Pacific Pte. Ltd. Additionally, PMFG was the majority owner of Peerless Propulsys China Holdings LLC (“Peerless Propulsys”). The Company’s former 60% equity investment in Peerless Propulsys entitled it to 80% of the earnings. Peerless Propulsys was the sole owner of Peerless China Manufacturing Co. Ltd. (“PCMC”). On July 12, 2016, the Company entered into an agreement with the noncontrolling owner of Peerless Propulsys and acquired 100% ownership in the equity and earnings of Peerless Propulsys of their interest (40%). For a more complete discussion of the transaction, refer to Note 17.

PMFG is a global provider of engineered equipment for the abatement of air pollution, the separation and filtration of contaminants from gases and liquids, and industrial noise control equipment, and was acquired in September 2015.

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Unless indicated, all balances within tables are in thousands except per share amounts. All intercompany balances and transactions have been eliminated.

Use of estimates—The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America (“GAAP”), requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates.

Cash equivalents—We consider all highly liquid investments with original maturities of three months or less to be cash equivalents. At December 31, 2017 and 2016, included in Restricted Cash is cash in support of letters of credit issued by various foreign subsidiaries of the Company. The Company occasionally enters into letters of credit with durations in excess of one year.

Accounts Receivable—Trade receivables are generally uncollateralized customer obligations due under normal trade terms requiring payment generally within 30 days from the invoice date unless otherwise determined by specific contract terms, generally due to retainage provisions. The Company’s estimate of the allowance for doubtful accounts for trade receivables is primarily determined based upon the length of time that the receivables are past due. In addition, management estimates are used to determine probable losses based upon an analysis of prior collection experience, specific account risks and economic conditions. The Company has a series of actions that occur based upon the aging of past due trade receivables, including letters, statements, direct customer contact and liens. Accounts are deemed uncollectible based on past account experience and the current financial condition of the account.

Inventories—As a result of prospectively adopting ASU 2015-11, in fiscal year 2017 the Company’s inventory is primarily valued at the lower of cost or net realizable value. In fiscal year 2016, the Company’s inventories are primarily valued at the lower of cost or market. The impact of the adoption was not material. The Company uses the first-in, first-out inventory costing method as well as the last-in, first-out method as of December 31, 2016 and 2017, respectively. As of December 31, 2017 and 2016, approximately 14% and 8%, respectively, of our inventory is valued on the last-in, first-out method. Inventory quantities are regularly reviewed and provisions for excess or obsolete inventory are recorded based on the Company’s forecast of future demand and market conditions. Significant unanticipated changes to the Company’s forecasts could require a change in the provision for excess or obsolete inventory.

Assets Held for Sale—The Company classifies properties as held for sale when certain criteria are met. At such time, the properties, including significant assets that are expected to be transferred as part of a sale transaction, are presented separately on the consolidated balance sheet at the lower of carrying value or estimated fair value less costs to sell and depreciation is no longer recognized. At December 31, 2017, the Company had three buildings, two tracts of land and equipment classified as held for sale. As of December 31, 2016, the Company had two buildings, two tracts of land and equipment classified as held for sale.

Property, plant and equipment—Property, plant and equipment are carried at the cost of acquisition or construction and depreciated over the estimated useful lives of the assets. Depreciation and amortization are provided using the straight-line method in amounts sufficient to amortize the cost of the assets over their estimated useful lives (buildings and improvements—generally five to 40 years; machinery and equipment—generally two to 15 years). Upon sale or disposal of property, plant and equipment, the applicable amounts of asset cost and accumulated depreciation are removed from the accounts, and the net amount, less any proceeds from sale, is recorded in income.

Intangible assets— Indefinite life intangible assets are comprised of tradenames, while finite life intangible assets are comprised of technology, customer lists, noncompetition agreements and tradenames. Finite life intangible assets are

amortized on a straight line or accelerated basis over their estimated useful lives of seven to 10 years for technology, five to 20 years for customer lists, five years for noncompetition agreements and 10 years for tradenames.

Long-lived assets—Property, plant and equipment and finite life intangible assets are reviewed whenever events or changes in circumstances occur that indicate possible impairment. If events or changes in circumstances occur that indicate possible impairment, our impairment review is based on an undiscounted cash flow analysis at the lowest level at which cash flows of the long-lived assets are largely independent of other groups of our assets and liabilities. This analysis requires management judgment with respect to changes in technology, the continued success of product lines, and future volume, revenue and expense growth rates. We conduct annual reviews for idle and underutilized equipment, and review business plans for possible impairment. Impairment occurs when the carrying value of the assets exceeds the future undiscounted cash flows expected to be earned by the use of the asset or asset group. When impairment is indicated, the estimated future cash flows are then discounted to determine the estimated fair value of the asset or asset group and an impairment charge is recorded for the difference between the carrying value and the estimated fair value.

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Additionally, the Company evaluates the remaining useful life each reporting period to determine whether events and circumstances warrant a revision to the remaining period of depreciation or amortization. If the estimate of a long lived asset's remaining useful life is changed, the remaining carrying amount of the asset is amortized prospectively over that revised remaining useful life.

The Company completes an annual (or more often if circumstances require) impairment assessment of its indefinite life intangible assets. As a part of its annual assessment, typically, the Company first qualitatively assesses whether current events or changes in circumstances lead to a determination that it is more likely than not (defined as a likelihood of more than 50 percent) that the fair value of an asset is less than its carrying amount. If there is a qualitative determination that the fair value of a particular asset is more likely than not greater than its carrying value, we do not need to proceed to the traditional quantitative estimated fair value test for that asset. If this qualitative assessment indicates a more likely than not potential that the asset may be impaired, the estimated fair value is calculated by the relief from royalty method. If the estimated fair value of an asset is less than its carrying value, an impairment charge is recorded for the amount by which the carrying value of the asset exceeds its calculated implied fair value. For the 2017 annual assessment, given the lower than expected results for certain reporting units, we determined that a quantitative assessment of fair value for all indefinite life intangible assets using the relief from royalty method was appropriate. Refer to Note 7 for the results of this quantitative analysis.

Goodwill—The Company completes an annual (or more often if circumstances require) impairment assessment on October 1 of its goodwill on a reporting unit level, at or below the operating segment level. As a part of its annual assessment, the Company first qualitatively assesses whether current events or changes in circumstances lead to a determination that it is more likely than not (defined as a likelihood of more than 50 percent) that the fair value of a reporting unit is less than its carrying amount. If there is a qualitative determination that the fair value of a particular reporting unit is more likely than not greater than its carrying value, the Company does not need to quantitatively test for goodwill impairment for that reporting unit. If this qualitative assessment indicates a more likely than not potential that the asset may be impaired, the estimated fair value is calculated using a weighting of the income method and the market method. If the estimated fair value of a reporting unit is less than its carrying value, an impairment charge is recorded. In fiscal year 2017, the Company prospectively adopted ASU 2017-04, which eliminates Step 2 and recognizes an impairment charge for the amount by which the carrying amount exceeds the reporting unit's fair value with the loss not exceeding the total amount of goodwill allocated to that reporting unit. In 2016, the Company recognized an impairment charge for the amount by which the carrying value of the goodwill exceeds its calculated implied fair value (formerly known as "Step 2"). For the 2017 annual assessment, given the lower than expected results for certain reporting units, we determined that a quantitative assessment of fair value for all reporting units with goodwill was appropriate. Refer to Note 7 for the results of this quantitative analysis.

Deferred charges—Deferred charges include deferred financing costs, which are amortized to interest expense over the life of the related loan. The Company incurred and capitalized \$0.7 million of deferred financing fees in 2017 related to long-term debt modifications. The Company did not incur or capitalize deferred financing fees in 2016. During 2015, the Company capitalized deferred financing fees of \$2.9 million related to the issuance of new debt. Amortization expense was \$1.0 million, \$1.1 million and \$0.8 million for 2017, 2016 and 2015, respectively, and is classified as interest expense. Also, during 2015, an additional \$0.3 million of existing fees were expensed, and classified as interest expense, as a result of the modification of the Credit Agreement (refer to Note 9 for further details of the modification). As of December 31, 2017 and 2016, remaining capitalized deferred financing costs of \$2.8 million and \$3.2 million, respectively, are included as a discount to debt in the accompanying Consolidated Balance Sheets.

Revenue recognition—Revenues from contracts are primarily recognized on the percentage of completion method, measured by the percentage of contract costs incurred to date compared with estimated total contract costs for each contract. This method is used because management considers contract costs to be the best available measure of

progress on these contracts. For contracts where the duration is short, total contract revenue is insignificant, or reasonably dependable estimates cannot be made, revenues are recognized on a completed contract basis, when risk and title passes to the customer, which is generally upon shipment of product.

During 2016, the Company's Zhongli division within the Energy segment has recognized revenue on a percentage of completion method compared with the completed contracts method that was utilized in 2015 (as the division did not meet the criteria to use percentage of completion). This change was made after determining that the Company had designed and implemented appropriate controls to track project costs and estimates to complete. During the year ended December 31, 2016, this division recognized \$7.9 million in percentage of completion revenue related to open projects as of December 31, 2016.

The asset "Costs and estimated earnings in excess of billings on uncompleted contracts" represents revenues recognized in excess of amounts billed. The liability "Billings in excess of costs and estimated earnings on uncompleted contracts" represents billings in excess of revenues recognized. Provisions for estimated losses on uncompleted contracts are made in the period in which such losses are determined. Changes to job performance, job conditions, and estimated profitability may result in revisions to contract revenue and costs and are recognized in the period in which the revisions are made. No provision for estimated losses on uncompleted contracts was required at December 31, 2017, and 2016.

Cost of sales—Cost of sales amounts include materials, direct labor and associated benefits, inbound freight charges, purchasing and receiving, inspection, warehousing, and depreciation. Generally, customer freight charges are included in sales and actual freight expenses are included in cost of sales.

Claims—Change orders arise when the scope of the original project is modified for any of a variety of reasons. The Company will negotiate the extent of the modifications, its expected costs and recovery with the customer. Costs related to change orders are recognized in the period they are incurred and added to the expected total cost of the project. In cases where contract revenues are assured beyond a reasonable doubt to be increased in excess of the expected costs of the change order, incremental profit also is recognized on the contract. Such assurance is generally only achieved when the customer approves in writing the scope and pricing of the change order. Change orders that are in dispute are effectively handled as claims.

Claims are amounts in excess of the agreed contract price that the Company seeks to collect from customers or others for customer-caused delays, errors in specifications and designs, contract terminations, change orders in dispute or unapproved as to both scope and price. Costs attributable to claims are treated as contract costs as incurred.

The Company recognizes certain significant claims for recovery of incurred costs when it is probable that the claim will result in additional contract revenue and when the amount of the claim can be reliably estimated. When the customer or other parties agree in writing to the amount of the claim to be recovered by the Company, the amount of the claim becomes contractual and is accounted for as an increase in the contract's total estimated revenue and estimated cost. As actual costs are incurred and revenues are recognized under percentage-of-completion accounting, a corresponding percentage of the revised total estimated profit will therefore be recognized.

Should it become probable that the claim will not result in additional contract revenue, the Company removes the related contract revenues from its previous estimate of total revenues, which effectively reduces the estimated profit margin on the job and negatively impacts profit for the period.

Pre-contract costs—Pre-contract costs are not significant. The Company expenses all pre-contract costs as incurred regardless of whether or not the bids are successful. A majority of our business is obtained through a bidding process and this activity is on-going with multiple bids in process at any one time. These costs consist primarily of engineering, sales and project manager wages, fringes and general corporate overhead and it is deemed impractical to track activities related to any one specific contract.

Selling and administrative expenses—Selling and administrative expenses on the Consolidated Statements of Operations include sales and administrative wages and associated benefits, selling and office expenses, professional fees, bad debt expense, changes in life insurance cash surrender value and depreciation. Selling and administrative expenses are charged to expense as incurred.

Acquisition and integration expenses—Acquisition and integration expenses on the Consolidated Statements of Operations are related to acquisition activities, which include retention, legal, accounting, banking, and other expenses.

Amortization and earnout expenses—Amortization and earn out expenses on the Consolidated Statements of Operations include amortization of intangible assets, and changes to earnout and contingent compensation amounts related to acquisitions as more fully presented and described in Notes 7 and 8.

Restructuring expenses—Restructuring expense on the Consolidated Statements of Operations include expenses related to a restructuring program implemented during the fourth quarter of fiscal 2017 to reduce operating costs in the future. Within restructuring expenses are charges related to severance, facility exit, legal and property, plant and equipment

impairment. The Company's policy is to recognize restructuring expenses in accordance with the accounting rules related to exit or disposal activities.

Indirect Taxes—The Company records taxes collected from customers and remitted to governmental authorities on a net basis in the Consolidated Statements of Operations.

Product Warranties—The Company's warranty reserve is to cover the products sold. The warranty accrual is based on historical claims information. The warranty reserve is reviewed and adjusted as necessary on a quarterly basis and is presented within Note 8.

Advertising costs—Advertising costs are charged to operations in the year incurred and totaled \$0.9 million, \$0.9 million and \$1.0 million in 2017, 2016 and 2015, respectively.

Research and Development—Although not technically defined as research and development, a significant amount of time, effort and expense is devoted to (a) custom engineering which qualifies products for specific customer applications, (b) developing proprietary process technology and (c) partnering with customers to develop new products.

Income taxes— On December 22, 2017, the Tax Cuts and Jobs Act of 2017 (the “Tax Act”) was signed into law making significant changes to the U.S. tax code. Changes affecting the Company’s consolidated 2017 financial statements include, but are not limited to, a U.S federal corporate tax rate decrease from 35% to 21% effective for tax years beginning after December 31, 2017 and a one-time transition tax, payable over eight years, on the mandatory deemed repatriation of cumulative foreign earnings as of December 31, 2017. Several other provisions of the Tax Act take effect beginning with the Company’s 2018 consolidated financial statements.

On December 22, 2017, the SEC staff issued Staff Accounting Bulletin No. 118 (“SAB 118”), which provides guidance on accounting for the tax effects of the Tax Act when a registrant does not have the necessary information available, prepared, or analyzed (including computations) in reasonable detail to complete the accounting for certain income tax effects of the Tax Act. In accordance with SAB 118, the Company has recognized provisional amounts related to the tax effects of the Tax Act for which the company was able to make reasonable estimates. We have not completed our accounting for the income tax effect of all elements of the Tax Act. For the provisions of the Tax Act for which the Company was unable to determine a provisional amount, the Company has continued to apply ASC 740 on the basis of the provisions of the tax laws that were in effect immediately before the enactment of the Tax Act.

Tax effects of the Tax Act will be recognized or adjusted as additional implementation guidance is released and analyses are finalized, but no later than the end of the measurement period prescribed by SAB 118, which is one year from the enactment date of the Tax Act.

Income taxes are determined using the asset and liability method of accounting for income taxes in accordance with FASB ASC Topic 740, “Income Taxes”. Under ASC Topic 740, tax expense includes U.S. and international income taxes. Until the December 22, 2017 enactment of the Tax Act, tax expense also included the provision for U.S. taxes on undistributed earnings of international subsidiaries not deemed to be indefinitely reinvested. The Company’s 2017 results include a one-time “transition tax” on the deemed repatriation of previously undistributed foreign earnings. For distributions of such earnings after December 31, 2017, no U.S. taxes will be imposed. However, certain foreign jurisdictions may still apply withholding taxes to such distributions; certain states may also impose income taxes on such distributions.

Tax credits and other incentives reduce tax expense in the year the credits are claimed. Deferred income taxes are provided using the asset and liability method whereby deferred tax assets are recognized for deductible temporary differences and operating loss and tax credit carry-forwards and deferred tax liabilities are recognized for taxable temporary differences. Temporary differences are the differences between the reported amounts of assets and liabilities and their tax bases, and are measured using enacted tax rates expected to apply to taxable income in the year in which those temporary differences are expected to be recovered or settled. Deferred tax assets and liabilities are adjusted for the effects of changes in tax laws and rates on the date of enactment. As of December 31, 2017, ending deferred tax assets and liabilities have been provisionally revalued to reflect the estimated effect of the change in the U.S. federal income tax rate from 35% to 21%.

In addition, from time to time, management must assess the need to accrue or disclose uncertain tax positions for proposed potential adjustments from various federal, state and foreign tax authorities who regularly audit the Company in the normal course of business. In making these assessments, management must often analyze complex tax laws of multiple jurisdictions, including many foreign jurisdictions. The accounting guidance prescribes a recognition threshold and measurement attribute for the financial statement recognition and measurement of a tax position taken or expected to be taken in a tax return. The Company records the related interest expense and penalties, if any, as tax expense in the tax provision.

Another change brought about by the Tax Act is a provision designed to currently tax global intangible low-taxed income (“GILTI”). Although the provision is one of the many that will take effect for the Company’s 2018 consolidated

financial statements, an accounting policy election with respect to GILTI could have an impact on deferred tax balances as of December 31, 2017. The company may either elect to record the U.S. income tax effect of future GILTI inclusions in the period in which they arise or establish deferred taxes with respect to the expected future tax liabilities associated with future GILTI inclusions. The Company has not yet made a policy election and no provisional amounts for the GILTI provisions were recorded as of December 31, 2017.

The Company has not historically recorded deferred income taxes on the undistributed earnings of its foreign subsidiaries because of management's intent to indefinitely reinvest such earnings. Management intends to continue to indefinitely reinvest such earnings, but the provisions of the Tax Act could cause management to reevaluate this position.

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Earnings per share—The computational components of basic and diluted earnings per share for 2017, 2016 and 2015 are below.

	For the Year Ended December 31, 2017		
	Numerator	Denominator	Per Share
	(Loss)	(Shares)	Amount
Basic net loss and loss per share	\$(3,029)	34,445	\$ (0.09)
Effect of dilutive securities:			
Common stock equivalents arising from stock options, restricted stock awards, and employee stock purchase plan	—	—	—
Diluted net loss and loss per share	\$(3,029)	34,445	\$ (0.09)

	For the Year Ended December 31, 2016		
	Numerator	Denominator	Per Share
	(Loss)	(Shares)	Amount
Basic net loss and loss per share	\$(38,218)	33,980	\$ (1.12)
Effect of dilutive securities:			
Common stock equivalents arising from stock options, restricted stock awards, and employee stock purchase plan	—	—	—
Diluted net loss and loss per share	\$(38,218)	33,980	\$ (1.12)

	For the Year Ended December 31, 2015		
	Numerator	Denominator	Per Share
	(Loss)	(Shares)	Amount
Basic net loss and loss per share	\$(5,602)	28,792	\$ (0.19)
Effect of dilutive securities:			
Common stock equivalents arising from stock options, restricted stock awards, and employee stock purchase plan	—	—	—
Diluted net loss and loss per share	\$(5,602)	28,792	\$ (0.19)

Options and warrants included in the computation of diluted earnings per share are so included on the treasury stock method. For the year ended December 31, 2017, 2016 and 2015, outstanding options and warrants and unvested restricted stock units of 0.7 million, 1.6 million and 1.5 million, respectively, were excluded from the computation of diluted earnings per share due to their having an anti-dilutive effect.

Once a restricted stock award vests, it is included in the computation of weighted average shares outstanding for purposes of basic and diluted earnings per share.

Foreign Currency Translation—The functional currencies of the Company’s subsidiaries in the Netherlands, United Kingdom, Brazil, Canada, China, Mexico, Chile, and India are the Euro, Pound, Real, Canadian Dollar, Renminbi, Peso, Chilean Peso, and Rupee, respectively, and their books and records are maintained in the local currency. Translation adjustments, which are based upon the exchange rate at the balance sheet date for assets and liabilities and weighted-average rate for the Consolidated Statements of Operations, are recorded in Accumulated Other Comprehensive Loss in Shareholders’ equity on the Consolidated Balance Sheets.

Transaction gain/(loss) of \$0.1 million, \$0.7 million and \$(1.7) million were recognized by the Company in 2017, 2016 and 2015, respectively. The transaction gain/(loss) is recorded on the “Other income (expense), net” line of the Consolidated Statements of Operations.

New Financial Accounting Pronouncements

Accounting Standards Adopted in Fiscal 2017

In January 2017, the Financial Accounting Standards Board (“FASB”) issued Accounting Standards Update (“ASU”) 2017-04, “Intangibles – Goodwill and Other (Topic 350): Simplifying the Test for Goodwill Impairment.” ASU 2017-04 eliminates Step 2 of the former goodwill impairment test along with amending other parts of the goodwill impairment test. Under this ASU, an entity should perform its annual or interim goodwill impairment test by comparing the fair value of the reporting unit with its carrying amount, and should recognize an impairment charge for the amount by which the carrying amount exceeds the reporting unit’s fair value with the loss not exceeding the total amount of goodwill allocated to that reporting unit. This ASU is effective for annual periods beginning after December 15, 2019, and interim periods therein with early adoption permitted for interim or annual goodwill

impairment tests performed after January 1, 2017. The Company has adopted ASU 2017-04 effective as of January 1, 2017. The provisions of ASU 2017-04 did not have a material effect on the Company's financial condition, results of operations, or cash flows.

In March 2016, the FASB issued ASU 2016-09, "Compensation—Stock Compensation: Improvements to Employee Share-Based Payment Accounting," which changes the accounting for certain aspects of share-based payments to employees. The new guidance requires, among its other provisions, that excess tax benefits (which represent the excess of actual tax benefits received at the date of vesting or settlement over the benefits recognized over the vesting period or upon issuance of share-based payments) and tax deficiencies (which represent the amount by which actual tax benefits received at the date of vesting or settlement is lower than the benefits recognized over the vesting period or upon issuance of share-based payments) be recorded in the income statement as an increase or decrease in income taxes when the awards vest or are settled. This is in comparison to the prior requirement that these excess tax benefits be recognized in additional paid-in capital and these tax deficiencies be recognized either as an offset to accumulated excess tax benefits, if any, or in the income statement. The new guidance also requires excess tax benefits to be classified along with other income tax cash flows as an operating activity in the statement of cash flows rather than, as previously required, a financing activity. The new guidance allows companies to elect a change to an accounting policy to account for forfeitures as they occur. The new guidance is effective for the first quarter of our fiscal year ended December 31, 2017, with early adoption permitted.

We have adopted ASU 2016-09 effective January 1, 2017 on a prospective basis where permitted by the new standard. As a result of this adoption:

- We recognized discrete tax benefits of \$0.4 million in the income tax expense line item of our Consolidated Statement of Operations for the year ended December 31, 2017 related to excess tax benefits upon vesting or settlement in that period.
- We elected to adopt the cash flow presentation of the excess tax benefits prospectively, commencing with our Condensed Consolidated Statement of Cash Flows for the year ended December 31, 2017, where these benefits are classified along with other income tax cash flows as an operating activity.
- We have elected to change our accounting policy to account for forfeitures as they occur. This change was applied on a modified retrospective basis with a cumulative effect adjustment to reduce retained earnings by \$0.1 million as of January 1, 2017.
- We excluded the excess tax benefits from the assumed proceeds available to repurchase shares in the computation of our diluted earnings per share for the year ended December 31, 2017.

In March 2016, the FASB issued ASU 2016-05, "Derivatives and Hedging: Effect of Derivative Contract Novations on Existing Hedge Accounting Relationships." ASU 2016-05 amends Topic 815 to clarify that novation of a derivative (replacing one of the parties to a derivative instrument with a new party) designated as the hedging instrument would not, in and of itself, be considered a termination of the derivative instrument or a change in critical terms requiring discontinuation of the designated hedging relationship. ASU 2016-05 is effective for annual periods beginning after December 15, 2016, and interim periods within those annual periods. The Company has adopted ASU 2016-05 on a prospective basis. The provisions of ASU 2016-05 had no effect on the Company's financial condition, results of operations, or cash flows.

In July 2015, the FASB issued ASU 2015-11, "Simplifying the Measurement of Inventory." ASU 2015-11 requires inventory within the scope of the ASU (i.e., first-in, first-out ("FIFO") or average cost) to be measured using the lower of cost and net realizable value. Inventory excluded from the scope of the ASU (i.e., last-in, first-out ("LIFO") or the

retail inventory method) will continue to be measured at the lower of cost or market. The ASU also amends some of the other guidance in Topic 330, "Inventory," to more clearly articulate the requirements for the measurement and disclosure of inventory. ASU 2015-11 is effective for annual periods beginning after December 15, 2016, and interim periods within those annual periods. The Company has adopted ASU 2015-11 on a prospective basis. The provisions of ASU 2015-11 did not have a material effect on the Company's financial condition, results of operations, or cash flows.

Accounting Standards Yet to be Adopted

In August 2017, the FASB issued ASU 2017-12, "Derivatives and Hedging (Topic 815): Targeted Improvements to Accounting for Hedging Activities." ASU 2017-12 expands an entity's ability to apply hedge accounting for nonfinancial and financial risk components and allow for a simplified approach for fair value hedging of interest rate risk. ASU 2017-12 eliminates the need to separately measure and report hedge ineffectiveness and generally requires the entire change in fair value of a hedging instrument to be presented in the same income statement line as the hedged item. Additionally, ASU 2017-12 simplifies the hedge documentation and effectiveness assessment under the previous guidance. The guidance is effective for annual periods, and interim periods within those annual periods, beginning after December 15, 2018. Early adoption is permitted. We plan to adopt the standard on January 1, 2019. We do not expect the adoption of this guidance to have a material impact on our consolidated financial statements.

In May 2017, the FASB issued ASU 2017-09, “Compensation – Stock Compensation (Topic 718): Scope of Modification Accounting.” ASU 2017-09 clarifies when changes to the terms or conditions of a share-based payment award must be accounted for as a modification. The new guidance will reduce diversity in practice and result in fewer changes to the terms of an award being accounted for as a modification. Under ASU 2017-09, an entity will not apply modification accounting to a share-based payment award if the award’s fair value, vesting conditions and classification as an equity or liability instrument are the same immediately before and after the change. ASU 2017-09 will be applied prospectively to awards modified on or after the adoption date. The guidance is effective for annual periods, and interim periods within those annual periods, beginning after December 15, 2017. Early adoption is permitted. We plan to adopt the standard on January 1, 2018. We do not expect the adoption of this guidance to have a material impact on our consolidated financial statements.

In March 2017, the FASB issued ASU 2017-07, “Compensation – Retirement Benefits (Topic 715): Improving the Presentation of Net Periodic Pension Cost and Net Periodic Postretirement Benefit Cost.” Under existing GAAP, an entity is required to present all components of net periodic pension cost and net periodic postretirement benefit cost aggregated as a net amount in the income statement, and this net amount may be capitalized as part of an asset where appropriate. ASU 2017-07 requires that an employer report the service cost component in the same line item or items as other compensation costs arising from services rendered by the pertinent employees during the period, and requires the other components of net periodic pension cost and net periodic postretirement benefit cost to be presented in the income statement separately from the service cost component and outside a subtotal of income from operations, if one is presented. Additionally, only the service cost component is eligible for capitalization, when applicable. The amendments in ASU 2017-07 shall be applied retrospectively for the presentation of the service cost component and the other components of net periodic pension cost and net periodic postretirement benefit cost in the income statement and prospectively, on and after the effective date, for the capitalization of the service cost component of net periodic pension cost and net periodic postretirement benefit in assets. ASU 2017-07 becomes effective for the Company on January 1, 2018. Early adoption is permitted. We plan to adopt this standard on January 1, 2018. We do not expect the adoption of this guidance to have a material impact on our consolidated financial statements.

In January 2017, the FASB issued ASU 2017-01, “Business Combinations (Topic 805): Clarifying the Definition of a Business.” ASU 2017-01 clarifies the definition of a business with the objective of adding guidance to assist entities with evaluating whether transactions should be accounted for as acquisitions (or disposals) of assets or businesses. The definition of a business affects many areas of accounting including acquisitions, disposals, goodwill, and consolidation. The adoption of ASU 2017-01 is effective for annual periods beginning after December 15, 2017, including interim periods within those periods. The amendments should be applied prospectively on or after the effective dates. We plan to adopt the standard on January 1, 2018. We do not expect the adoption of this guidance to have a material impact on our consolidated financial statements.

In November 2016, the FASB issued ASU 2016-18, “Statement of Cash Flows (Topic 230): Restricted Cash.” ASU 2016-18 will require a change during the period in the total of cash, cash equivalents, and amounts generally described as restricted cash or restricted cash equivalents to be included with cash and cash equivalents when reconciling the beginning-of-period and end-of-period total amounts shown on the statement of cash flows. ASU 2016-18 is effective for annual reporting periods beginning after December 15, 2017, including interim periods within that year. The Company plans to adopt the provisions of this standard on January 1, 2018, and will begin presenting segregated cash and restricted cash activity on the consolidated statements of cash flows using a retrospective transition method for each period presented.

In August 2016, the FASB issued ASU 2016-15, “Statement of Cash Flows (Topic 230): Classification of Certain Cash Receipts and Cash Payments.” ASU 2016-15 provides guidance on how certain cash receipts and cash payments are presented and classified in the statement of cash flows. ASU 2016-15 is effective for annual periods beginning after December 15, 2017, and interim periods within those fiscal years. ASU 2016-15 will require adoption on a

retrospective basis, unless it is impracticable to apply, in which case we would be required to apply the amendments prospectively as of the earliest date practicable. Early adoption is permitted, including adoption in an interim period. We plan to adopt this standard on January 1, 2018. The Company is currently in the process of evaluating the impact of ASU 2016-15 on its consolidated financial statements.

In February 2016, the FASB issued ASU 2016-02, "Leases." ASU 2016-02 establishes a right-of-use ("ROU") model that requires a lessee to record a ROU asset and a lease liability on the balance sheet for all leases with terms longer than 12 months. Leases will be classified as either finance or operating, with classification affecting the pattern of expense recognition in the income statement. For public companies, this guidance is effective for annual periods beginning after December 15, 2018. We currently expect to adopt ASU 2016-02 as of January 1, 2019, under the modified prospective method. Our evaluation of ASU 2016-02 is ongoing and not complete. The Company believes that the new standard will have a material impact on its consolidated balance sheet due to the recognition of ROU assets and liabilities for the Company's operating leases but it will not have a material impact on its income statement or liquidity. The ASU also will require disclosures to help investors and other financial statement users better understand the amount, timing and uncertainty of cash flows arising from leases. These disclosures include qualitative and quantitative requirements, providing additional information about the amounts recorded in the financial statements. Our leasing activity is

primarily related to buildings and we have various sale-leaseback transactions. The Company is continuing to evaluate potential impacts to our financial statements.

In May 2014, the FASB issued ASU 2014-09, "Revenue From Contracts With Customers." ASU 2014-09 supersedes nearly all existing revenue recognition principles under GAAP. The core principle of ASU 2014-09 is to recognize revenues when promised goods or services are transferred to customers in an amount that reflects the consideration an entity expects to be entitled to for those goods or services using a defined five-step process. More judgment and estimates may be required to achieve this principle than under existing GAAP. In 2016, the FASB issued accounting standards updates to address implementation issues and to clarify the guidance for identifying performance obligations, licenses and determining if a company is the principal or agent in a revenue arrangement. ASU 2014-09 and its clarifying amendments are effective for annual periods beginning after December 15, 2017, including interim periods therein, using either of the following transition methods: (i) a full retrospective approach reflecting the application of the standard in each prior reporting period with the option to elect certain practical expedients or (ii) a modified retrospective approach with the cumulative effect upon initial adoption recognized at the date of adoption, which includes additional footnote disclosures.

We adopted ASU 2014-09 on January 1, 2018, under the modified retrospective method where the cumulative effect is recognized through retained earnings as of the date of adoption. Historically, we have recognized revenue related to contracts predominantly under the percentage of completion method of accounting for revenue recognition. Given our diverse customer base and product lines, there are varying fact patterns that must be evaluated within each of our contracts to determine the appropriate pattern of revenue recognition upon the adoption of ASU 2014-09. Certain contract arrangements that were historically recognized over time under our previous policies will now be recognized at a point in time upon completion of the contracts under the new standard. However, based on the Company's evaluation of existing contracts that were not substantially complete as of January 1, 2018, the Company has estimated that the cumulative adjustment to beginning retained earnings will not be material. Additionally, the Company's future disclosures will be expanded to comply with the standard.

2. Financial Instruments

Our financial instruments consist primarily of investments in cash and cash equivalents, receivables and certain other assets, foreign debt, and accounts payable, which approximate fair value at December 31, 2017 and 2016, due to their short-term nature or variable, market-driven interest rates.

The fair value of the debt issued under the Credit Agreement was \$114.9 million and \$125.1 million at December 31, 2017 and 2016, respectively. The fair value of the note payable was \$5.3 million at December 31, 2017 and 2016.

In accordance with the terms of the Credit Agreement, the Company entered into an interest rate swap on December 30, 2015 to hedge against interest rate exposure related to a portion of the outstanding debt indexed to LIBOR market rates. See Note 9 for further information regarding the interest rate swap.

At December 31, 2017 and 2016, the Company had cash and cash equivalents of \$29.9 million and \$45.8 million, respectively, of which \$19.7 million and \$25.6 million, respectively, was held outside of the United States, principally in the Netherlands, United Kingdom, China, and Canada.

Concentrations of credit risk:

Financial instruments that potentially subject us to credit risk consist principally of cash and accounts receivable. We maintain cash and cash equivalents with various major financial institutions. We perform periodic evaluations of the financial institutions in which our cash is invested. Concentrations of credit risk with respect to trade and contract receivables are limited due to the large number of customers and various geographic areas. Additionally, we perform ongoing credit evaluations of our customers' financial condition.

3. Accounts Receivable

(Table only in thousands)	2017	2016
Trade receivables	\$11,603	\$11,976
Contract receivables	60,543	72,835
Allowance for doubtful accounts	(4,156)	(1,749)
Total accounts receivable	\$67,990	\$83,062

Balances billed, but not paid by customers under retainage provisions in contracts that are recorded in deferred charges and other assets within the Consolidated Balance Sheets, amounted to approximately \$2.5 million and \$3.2 million at December 31, 2017 and 2016, respectively. Retainage receivables on contracts in progress are generally collected within a year or two subsequent to contract completion.

Provision for doubtful accounts was approximately \$3.9 million, \$0.8 million and \$0.7 million during 2017, 2016 and 2015, respectively, while accounts charged to the allowance were \$1.5 million, \$0.3 million and \$0.2 million during 2017, 2016 and 2015, respectively.

4. Costs and Estimated Earnings on Uncompleted Contracts

(Table only in thousands)	2017	2016
Costs incurred on uncompleted contracts	\$169,665	\$186,609
Estimated earnings	61,556	77,709
Total costs and estimated earnings on uncompleted contracts, gross	231,221	264,318
Less billings to date	(217,743)	(261,280)
Total costs and estimated earnings on uncompleted contracts, net	\$13,478	\$3,038
Included in the accompanying consolidated balance sheets		

under the following captions:

Costs and estimated earnings in excess of billings on		
uncompleted contracts	\$33,947	\$38,123
Billings in excess of costs and estimated earnings on		
uncompleted contracts	(20,469)	(35,085)
Total costs and estimated earnings on uncompleted contracts, net	\$13,478	\$3,038

The Company's contracts have various lengths to completion ranging from a few days to several months. The Company anticipates that a majority of our current contracts will be completed within the next 12 months.

5. Inventories

Inventories consisted of the following:

(Table only in thousands)	2017	2016
Raw materials	\$18,444	\$17,889
Work in process	3,182	3,986
Finished goods	940	1,508
Obsolescence allowance	(1,597)	(1,896)
Total inventories	\$20,969	\$21,487

Amounts credited to the allowance for obsolete inventory and charged to cost of sales amounted to \$(0.2) million, \$(1.2) million and \$(0.7) million during 2017, 2016 and 2015, respectively. Items charged to the allowance for inventory write-offs were \$0.6 million, \$0.2 million and \$0.2 million, during 2017, 2016 and 2015, respectively.

6. Property, Plant and Equipment

(Table only in thousands)	2017	2016
Land	\$1,627	\$1,617
Building and improvements	18,063	19,887
Machinery and equipment	25,068	22,219
Property, plant and equipment, gross	44,758	43,723
Less accumulated depreciation	(21,358)	(16,453)
Property, plant and equipment, net	\$23,400	\$27,270

Depreciation expense was \$4.5 million, \$5.0 million and \$4.2 million for 2017, 2016 and 2015, respectively.

7. Goodwill and Intangible Assets

	Energy	Environmental	Fluid Handling and Filtration	Totals
(Table only in thousands)	Segment	Segment	Segment	Totals
Balance of goodwill at December 31, 2015	\$72,075	\$ 55,031	\$ 93,057	\$220,163
2016 acquisition related adjustments	4,205	—	—	4,205
Impairment charge	—	(6,828)	(46,934)	(53,762)
Foreign currency translation	(453)	—	—	(453)
Balance of goodwill at December 31, 2016	75,827	48,203	46,123	170,153
Impairment charge	(4,443)	—	—	(4,443)
Foreign currency translation	1,241	—	—	1,241
Balance of goodwill at December 31, 2017	\$72,625	\$ 48,203	\$ 46,123	\$166,951

As of December 31, 2017 and 2016, the Company has an aggregate amount of goodwill acquired of \$242.3 million and \$241.1 million, respectively, and an aggregate amount of impairment losses of \$75.3 million and \$70.9 million, respectively.

2016 acquisition related adjustments consisted of the finalization of the purchase accounting for PMFG. These adjustments included decreases of \$5.5 million to property and equipment and \$1.7 million to current assets partially offset by decreases of \$1.1 million to the deferred income tax liability and \$1.8 million to the noncontrolling interest.

The Company's indefinite lived intangible assets as of December 31, 2017 and 2016 consisted of the following:

(Table only in thousands)	Tradenames	
	2017	2016
Beginning balance	\$22,042	\$26,337
Impairment charge	(2,725)	(4,161)
Foreign currency adjustments	374	(134)
Total indefinite lived intangible assets	\$19,691	\$22,042

The Company completes an annual (or more often if circumstances require) impairment assessment of its goodwill and indefinite life intangible assets on October 1 at the reporting unit level. Effective January 1, 2017, the Company prospectively adopted accounting guidance that simplifies goodwill impairment testing by eliminating the requirement to calculate the implied fair value of goodwill (formerly “Step 2”) in the event that an impairment is identified. Instead, an impairment charge is recorded based on the excess of the reporting unit’s carrying amount over its fair value. Prior to 2017, a goodwill impairment test as described in FASB ASC 350-20-35 was performed for all reporting units.

The Company bases its measurement of the fair value of a reporting unit using a weighting of the income method and the market method on a 50/50 basis. The income method is based on a discounted future cash flow approach that uses the significant assumptions of projected revenue, projected operational profit, terminal growth rates, and the cost of capital. Projected revenue, projected operational profit and terminal growth rates were determined to be significant assumptions because they are three primary drivers of the projected cash flows in the discounted future cash flow approach. Cost of capital was also determined to be a significant assumption as it is the discount rate used to calculate the current fair value of those projected cash flows. The market method is based on financial multiples of comparable companies and applies a control premium. Significant estimates in the market approach include

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identifying similar companies with comparable business factors such as size, growth, profitability, risk and return on investment and assessing comparable revenue and operating income multiples in estimating the fair value of a reporting unit.

Based on the analysis, the resultant estimated fair value of the reporting units for all but the Zhongli reporting unit exceeded their carrying value as of October 1, 2017. The impairment test indicated full goodwill impairment for one reporting unit of \$4.4 million, which was recorded in the fourth quarter of fiscal 2017. The impairment was due to lower projected operating performance due primarily to the declining coal market in China. This reporting unit is included in the Energy segment.

In the 2017 impairment analysis for reporting unit one, two and three, which as of December 31, 2017, carry goodwill of \$32.4 million, \$59.9 million and \$5.7 million, and the fair value only exceeded the carrying value by 6%, 3% and 2%, respectively. The reporting units were acquired in 2014, 2015 and 2007, respectively, reporting unit one is reported within the Environmental segment while reporting unit two and three are reported within the Energy segment. Management's projections used to estimate the undiscounted cash flows included increasing sales volumes and operational improvements designed to reduce costs. Changes in any of the significant assumptions used, including if the Company does not successfully achieve its 2018 operating plan, can materially affect the expected cash flows, and such impacts can result in a potentially material non-cash impairment charge. Therefore, the key assumptions most susceptible to change are projected revenue and projected operational profit. We determined that with other assumptions held constant under our weighted income and market method for measuring fair value, a decrease in projected revenue growth rates of approximately 11 basis points, 4 basis points and 1 basis point or a decrease in projected operational profit growth rates of approximately 65 basis points, 16 basis points and 20 basis points for reporting unit one, two and three would result in fair value of the reporting unit being equal to its carrying value.

The Company also performed an impairment analysis for all reporting units with indefinite life intangible assets. The Company based its measurement of the fair value of the indefinite life intangible assets utilizing the relief from royalty method. The significant assumptions used under the relief from royalty method are projected revenue, royalty rates, terminal growth rates, and the cost of capital. Projected revenue, royalty rates and terminal growth rates were determined to be significant assumptions because they are three primary drivers of the projected royalty cash flows in the relief from royalty method. Cost of capital was also determined to be a significant assumption as it is the discount rate used to calculate the current fair value of those projected royalty cash flows. Changes in any of the significant assumptions used can materially affect the expected cash flows, and such impacts can result in material non-cash impairment charges. Under this approach, the resultant estimated fair value of the indefinite life intangible assets exceeded their carrying value for all but four reporting units as of December 31, 2017. For four of the reporting units, which carried combined indefinite life intangible assets of \$13.1 million, our fair value measurement resulted in the aggregate fair value being 20.7% lower than the aggregate carrying value. Accordingly, we recorded an impairment charge of \$2.7 million during the year ended December 31, 2017. The Zhongli reporting unit with indefinite life intangible asset impairment of \$0.9 million, respectively, was acquired in the second half of fiscal 2014. Reporting unit two with indefinite life intangible asset impairment of \$1.0 million was acquired in the second half of 2015. Reporting unit three with indefinite life intangible asset impairment of \$0.3 million was acquired in 2007. Reporting unit four with indefinite life intangible asset impairment of \$0.5 million was acquired in the second half of 2013. The Zhongli and reporting units two, three and four are reported within the Energy Segment. Management's projections used to estimate the fair values at the date of acquisition primarily included increasing sales volumes; however, the units have experienced lower sales than originally projected.

As a result of the impairments noted above, the Company concluded there was a triggering event that required an impairment test to be performed to support the definite lived intangible assets and other long-lived assets carrying value. An undiscounted cash flow analysis was performed at the lowest level of cash flows for each asset group and the sum of the undiscounted cash flows exceeded the long-lived assets' carrying values. As a result of this analysis, no

impairment related to these assets was recorded in 2017.

During the annual impairment test of indefinite life intangible assets in 2016 and 2015, the carrying values of four and three, respectively, reporting units' indefinite life intangible assets exceeded their fair values. The Company recorded a \$4.2 million and \$3.3 million impairment charge during the years ended December 31, 2016 and 2015, respectively. There was goodwill impairment of \$53.8 million in the year ended December 31, 2016 and no goodwill impairment in the year ended December 31, 2015.

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As described above, the fair value measurement methods used in the Company's goodwill and indefinite life intangible assets impairment analyses utilizes a number of significant unobservable inputs or Level 3 assumptions. These assumptions include, among others, projections of our future operating results, the implied fair value of these assets using an income approach by preparing a discounted cash flow analysis and other subjective assumptions.

The Company's finite lived intangible assets as of December 31, 2017 and 2016 consisted of the following:

(Table only in thousands)	2017		2016	
	Cost	Accum. Amort.	Cost	Accum. Amort.
Intangible assets – finite life				
Technology	\$15,867	\$8,609	\$15,867	\$6,360
Customer lists	77,497	35,024	77,497	26,041
Noncompetition agreements	1,118	698	1,118	478
Tradenname	1,390	440	1,390	301
Foreign currency adjustments	(1,214)	(69)	(2,964)	(1,000)
Total finite life intangible assets	\$94,658	\$44,702	\$92,908	\$32,180

Amortization expense of finite life intangible assets was \$11.5 million, \$13.9 million and \$12.3 million for 2017, 2016 and 2015, respectively. Amortization over the next five years for finite life intangibles is \$10.1 million in 2018, \$8.9 million in 2019, \$7.2 million in 2020, \$5.9 million in 2021, and \$4.9 million in 2022.

The weighted average amortization period for the finite lived intangible assets acquired in fiscal 2015 is 8.7 years.

8. Accounts Payable and Accrued Expenses

(Table only in thousands)	2017	2016
Trade accounts payable, including amounts due to subcontractors	\$45,409	\$58,985
Compensation and related benefits	5,246	8,232
Current portion of earnout liability	2,989	13,527
Accrued warranty	4,464	2,684
Other	12,678	12,182
Total accounts payable and accrued expenses	\$70,786	\$95,610

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The activity in the Company's current portion of earnout liability and long term portion of earnout liability was as follows for the twelve months ended December 31, 2017 and 2016:

(Table only in thousands)	Energy Segment	Environmental Segment	Total (1)
Earnout accrued at December 31, 2016	\$24,213	\$ —	\$24,213
Fair value adjustment	(6,610)	—	(6,610)
Compensation expense adjustment	1,240	—	1,240
Foreign currency translation adjustment	825	—	825
Payment	(15,193)	—	(15,193)
Total earnout liability as of December 31, 2017	\$4,475	\$ —	\$4,475
Less: current portion of earnout	(2,989)	—	(2,989)
Balance of long term portion of earnout recorded in other liabilities at December 31, 2017	\$1,486	\$ —	\$1,486

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(Table only in thousands)	Energy Segment	Environmental Segment	Total (1)
Earnout accrued at December 31, 2015	\$30,403	\$ 2,267	\$32,670
Fair value adjustment	6,485	(2,267)	4,218
Compensation expense adjustment	1,213	—	1,213
Foreign currency translation adjustment	(1,346)	—	(1,346)
Exchange of earnout for accounts receivable	(3,272)	—	(3,272)
Payment	(9,270)	—	(9,270)
Total earnout liability as of December 31, 2016	\$24,213	\$ —	\$24,213
Less: current portion of earnout	(13,527)	—	(13,527)
Balance of long term portion of earnout recorded in other liabilities at December 31, 2016	\$10,686	\$ —	\$10,686

(1)The Fluid Handling and Filtration segment does not have any earnout arrangements associated with the segment.

9. Senior debt

Debt consisted of the following at December 31, 2017 and 2016:

(Table only in thousands)	2017	2016
Outstanding borrowings under Credit Facility (defined below).		
Term loan payable in quarterly principal installments of \$2.0 million through September 2018, \$2.5 million thereafter with balance due upon maturity in September 2020.		
– Term loan	\$ 113,903	\$ 125,072
– U.S. Dollar revolving loans	1,000	—
– Unamortized debt discount	(2,834)	(3,175)
Total outstanding borrowings under	112,069	121,897

Credit Facility			
Outstanding borrowings (U.S. dollar equivalent) under			
China Facility (defined below)	—		1,296
Outstanding borrowings (U.S. dollar equivalent) under			
Aarding Facility (defined below)	2,764		—
Total outstanding borrowings	\$ 114,833		\$ 123,193
Less: current portion	11,296		8,827
Total debt, less current portion	\$ 103,537		\$ 114,366

During the year ended December 31, 2017, the Company made prepayments of \$4.3 million on the outstanding balance of the term loan. Scheduled principal payments under our Credit Facility are \$8.5 million in 2018, \$10.0 million in 2019, and \$96.4 million in 2020.

United States Debt

The Company entered into a credit agreement (the “Credit Agreement”) with various lenders (the “Lenders”) and letter of credit issuers (each, an “L/C Issuer”), and Bank of America, N.A., as Administrative Agent (the “Agent”), swing line lender and an L/C Issuer, providing for various senior secured credit facilities (collectively, the “Credit Facility”).

On September 3, 2015, concurrent with the closing of the PMFG acquisition, the Company amended and restated the Credit Agreement. Pursuant to the amended and restated Credit Agreement, the Lenders provided a term loan in an aggregate principal amount of \$170.0 million and the Lenders decreased their senior secured U.S. dollar revolving credit commitments to the aggregate principal amount of \$60.5 million. All other provisions of the agreement remained substantially unchanged, including the \$19.5 million senior secured multi-currency revolving credit facility for U.S. dollar and specific foreign currency loans. The proceeds from the increased term loan were used primarily to (i) finance the cash portion of the PMFG purchase price, (ii) pay off certain outstanding indebtedness of the Company and its subsidiaries (including certain indebtedness of PMFG and its subsidiaries), and (iii) pay certain fees and expenses incurred in connection with the amendment to the Credit Agreement and the PMFG acquisition.

The Company amended the Credit Facility as of June 9, 2017. The Credit Facility was amended to, among other things, (a) modify the calculation of Consolidated EBITDA and Consolidated Fixed Charges to exclude certain pro forma adjustments related to certain acquisitions and other transactions and (b) modify the Consolidated Leverage Ratio covenant.

The Company amended the Credit Facility as of October 31, 2017. The Credit Facility was amended to, among other things, (a) modify the calculation of Consolidated EBITDA and Consolidated Fixed Charges to exclude certain adjustments related to certain transactions (b) modify the Consolidated Leverage Ratio covenant and (c) add a covenant restricting the amount of capital expenditures we may make in fiscal years 2018 and 2019. As a result of the amendment to the Credit Facility, the maximum consolidated leverage ratio increased from 3.25 to 3.75 and will remain constant at this ratio through March 31, 2019, when it is set to decrease to 3.50 through September 30, 2019. The Consolidated Leverage Ratio will then decrease to 3.25 where it will remain until the end of the term of the Credit Facility.

As of December 31, 2017 and 2016, \$24.4 million and \$18.0 million of letters of credit were outstanding, respectively. Total unused credit availability under the Credit Facility was \$54.6 million and \$62.0 million at December 31, 2017 and 2016, respectively. Revolving loans may be borrowed, repaid and reborrowed until September 3, 2020, at which time all amounts borrowed pursuant to the Credit Facility must be repaid.

At the Company's option, revolving loans and the term loans accrue interest at a per annum rate based on either the highest of (a) the federal funds rate plus 0.5%, (b) the Agent's prime lending rate, and (c) one-month LIBOR plus 1.00%, plus a margin ranging from 1.0% to 2.0% depending on the Company's consolidated leverage ratio ("Base Rate"), or a Eurocurrency Rate (as defined in the Credit Agreement) plus 2.0% to 3.0% depending on the Company's consolidated leverage ratio. Interest on swing line loans is the Base Rate.

Accrued interest on Base Rate loans is payable quarterly in arrears on the last day of each calendar quarter and at maturity. Interest on Eurocurrency Rate loans is payable on the last date of each applicable Interest Period (as defined in the agreement), but in no event less than once every three months and at maturity. The weighted average interest rate on outstanding borrowings was 4.08% and 3.26% at December 31, 2017 and 2016, respectively.

In accordance with the Credit Facility terms, the Company entered into an interest rate swap on December 30, 2015 to hedge against interest rate exposure related to approximately one-third of the outstanding debt as of the date of the agreement indexed to LIBOR market rates. The fair value of the interest rate swap was a \$0.3 million asset and a \$0.2 million liability at December 31, 2017, and 2016, respectively, which is recorded in "Deferred charges and other assets" on the Consolidated Balance Sheets. The Company did not designate the interest rate swap as an effective hedge until the first quarter of 2016. The change in the fair value of the hedge prior to being designated as an effective hedge during the year ended December 31, 2016 of \$0.5 million, was recorded in earnings in "Other income (expense), net" in the Consolidated Statements of Operations. From the date of designation, all changes to the fair value of the interest rate swap are recorded in other comprehensive income (loss) as long as the hedge is deemed effective.

The Company has granted a security interest in substantially all of its assets to secure its obligations pursuant to the Credit Agreement. The Company's obligations under the Credit Agreement are guaranteed by the Company's U.S. subsidiaries and such guaranty obligations are secured by a security interest on substantially all of the assets of such subsidiaries, including certain real property. The Company's obligations under the Credit Agreement may also be guaranteed by the Company's material foreign subsidiaries to the extent no adverse tax consequences would result to the Company.

As of December 31, 2017 and 2016, the Company was in compliance with all related financial and other restrictive covenants under the Credit Facility.

Foreign Debt

A subsidiary of the Company located in the Netherlands has a Euro denominated facilities agreement with ING Bank N.V. as the lender ("Aarding Facility") with a total borrowing capacity of \$15.5 million. The facilities agreement consists of a \$8.3 million bank guarantee facility and a \$7.2 million overdraft facility. The bank guarantee interest rate is the three months Euribor plus 265 basis points (2.65% as of December 31, 2017 and 2016) and the overdraft interest rate is three months Euribor plus 195 basis points (1.95% as of December 31, 2017 and 2016). All of the borrowers' assets are pledged for this facility, and the borrowers' solvency ratio must be at least 30% and net debt/last twelve months EBITDA less than 3.0. The subsidiary of the Company located in the Netherlands has a Euro denominated debenture facility used to facilitate issuances of letters of credit and bank guarantees of December 31, 2017. As of December 31, 2017, \$3.9 million of the bank guarantees and \$2.8 million of the overdraft facility are being

used by the borrowers. As of December 31, 2016, \$5.3 million of the bank guarantee and zero of the overdraft facility are being used by the borrowers. There is no stated expiration date on the facilities agreement. As of December 31, 2016 the borrowers were in compliance with all related financial and other restrictive covenants. As of December 31, 2017, the borrowers were not in compliance with certain financial covenants under the Aarding Facility. As such, in March 2018, the Company settled the outstanding amount of \$2.8 million of the overdraft facility, which is classified as current portion of debt in the Consolidated Balance Sheets. The Company plans to exit this facility and consolidate it with the existing Credit Facility.

A subsidiary of the Company located in China has a Chinese Yuan Renminbi denominated short term loan with Bank of America (“China Facility”) with amounts outstanding of zero and \$1.3 million as of December 31, 2017 and 2016, respectively. The short term loan has a total borrowing capacity of \$4.6 million and \$4.3 million as of December 31, 2017 and 2016, respectively. The short term loan has an interest rate of 4.79%, and will expire on April 12, 2018 and will not be renewed.

A subsidiary of the Company located in the U.K. has a debenture agreement used to facilitate issuances of letters of credit and bank guarantees of \$8.0 million and \$9.0 million at December 31, 2017 and 2016. This agreement is currently denominated in US Dollars. This facility was secured by a protective letter of credit issued by the Company to HSBC Bank at December 31, 2017. At December 31, 2017 and 2016, there was \$7.0 million and \$6.2 million, respectively, of outstanding stand-by letters of credit and bank guarantees under this debenture agreement.

A subsidiary of the Company located in Germany has a Euro denominated debenture agreement used to facilitate issuances of letters of credit and bank guarantees of \$0.2 million and \$0.9 million at December 31, 2017 and 2016, respectively. This facility is secured by cash deposits of \$0.2 million and \$0.9 million at December 31, 2017 and 2016, respectively. There were \$0.2 million and \$0.9 million of outstanding stand-by letters of credit and bank guarantees under this debenture agreement as of December 31, 2017 and 2016, respectively.

A subsidiary of the Company located in Singapore had bank guarantees of \$1.0 million and \$1.7 million at December 31, 2017 and December 31, 2016, respectively. These guarantees are secured with cash deposits of \$0.1 million and \$0.3 million as of December 31, 2017 and December 31, 2016, respectively, and a protective letter of credit issued by the Company to Citibank.

As of December 31, 2017 and 2016, \$3.9 million and \$5.3 million of letters of credit were outstanding under the Netherlands and China facilities, respectively. Total unused credit availability under the Netherlands and China facilities was \$13.5 million and \$11.4 million at December 31, 2017 and 2016, respectively.

10. Shareholders' Equity

Dividends

Our dividend policy and the payment of cash dividends under that policy are subject to the Board of Director's continuing determination that the dividend policy and the declaration of dividends are in the best interest of the Company's shareholders. Future dividends and the dividend policy may be changed or cancelled at the Company's discretion at any time. Payment of dividends is also subject to the continuing compliance with our financial covenants under our Credit Facility. On November 6, 2017, the Board of Directors reviewed the Company's dividend policy and determined that it would be in the best interest of the stockholders to suspend dividend payments.

During 2017, 2016 and 2015, our Board declared the following quarterly cash dividends on our common stock:

Dividend

Per Share	Record Date	Payment Date
\$0.075	August 7, 2017	September 29, 2017
\$0.075	May 10, 2017	June 30, 2017
\$0.075	March 6, 2017	March 31, 2017
\$0.066	December 16, 2016	December 30, 2016
\$0.066	September 16, 2016	September 30, 2016
\$0.066	June 18, 2016	June 30, 2016
\$0.066	March 18, 2016	March 31, 2016
\$0.066	December 16, 2015	December 30, 2015
\$0.066	September 18, 2015	September 30, 2015
\$0.066	June 12, 2015	June 26, 2015
\$0.066	March 19, 2015	March 31, 2015

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Effective August 13, 2012, the Company implemented a Dividend Reinvestment Plan (the “Plan”), under which the Company may issue up to 750,000 shares of common stock. The Plan provides a way for interested shareholders to increase their holdings in our common stock. Participation in the Plan is strictly voluntary and is open only to existing shareholders. The Plan has had limited participation.

Share-Based Compensation

The Company’s 2017 Equity and Incentive Compensation Plan (the “2017 Plan”) was approved by the Company’s stockholders on May 16, 2017 and replaced the 2007 Equity Incentive Plan. The 2017 Plan permits the granting of stock options, which are granted with an exercise price equal to or greater than the fair market value of the Company’s common stock at the date of the grant, and other stock-based awards, including appreciation rights, restricted stock, restricted stock units, performance shares and dividend equivalents. A total of 1.9 million shares of common stock were authorized for issuance. As of December 31, 2017 a total of 2.0 million shares remain available for future issuance due to forfeitures under the 2007 Equity Incentive Plan. Stock options granted to employees generally vest equally over a period of four years from the date of the grant. Stock awards granted to employees generally vest over a period of three to four years from the date of the grant. During 2017, approximately 128,000 stock options and 351,000 restricted stock awards were granted to plan participants under the 2017 plan.

On June 10, 2017, the Company granted 700,000 performance units to our Chief Executive Officer whose total value was determined to be \$175,000 and will be expensed over the vesting period of three years. The maximum shares of common stock that the participant could receive upon his performance units vesting is 77,778 shares. The performance units are earned based upon the Company’s stock price during 30 consecutive trading days within a specified date range of approximately two years. The performance units are settled in the Company’s common stock subsequent to this specified date range and vest approximately three years from the date of the grant. The estimated grant date fair value and compensation expense of each performance share is determined on the date of grant by using the Monte Carlo valuation model.

The 2007 Equity Incentive Plan (the “2007 Plan”) was approved by shareholders on May 23, 2007. As of May 16, 2017, no further grants will be made under the 2007 Plan, but outstanding awards under the 2007 Plan prior to such date will continue to be unaffected in accordance with their terms. The 2007 Plan permits the granting of stock options and stock awards which are granted at a price equal to or greater than the fair market value of the Company’s common stock at the date of the grant. Stock options granted to employees generally vest equally over a period of three to five years from the date of the grant. Stock awards granted to employees generally vest equally over a period of four to five years from the date of the grant. During 2017, no stock options and approximately 54,000 restricted stock awards were granted to plan participants under the 2007 Plan. During 2016, approximately 105,000 stock options and 267,000 restricted stock awards were granted to plan participants under the 2007 Plan. The awards outstanding are service based awards that vest over a service period. The number of shares reserved for issuance under the 2007 Plan is 3,300,000, of which approximately 414,000 shares were available for future grant as of December 31, 2016.

There were approximately 53,000 performance-based awards outstanding at December 31, 2016, which were forfeited in 2017.

Share-based compensation expense for stock options and restricted stock awards under these plans of \$1.7 million, \$2.2 million and \$1.9 million was recorded in the years ended December 31, 2017, 2016 and 2015, respectively. The tax benefit related to share based compensation expense was zero, \$0.2 million and zero in 2017, 2016 and 2015, respectively.

Employee Stock Purchase Plan

The 2009 Employee Stock Purchase Plan (“ESPP”) was approved by shareholders on May 21, 2009.

The ESPP is administered by the Compensation Committee. The aggregate maximum number of shares of the Company’s common stock that may be granted under the ESPP is 1,500,000 shares over the ten-year term of the ESPP, subject to adjustment in the event there is a reorganization, merger, consolidation, recapitalization, reclassification, stock split-up, or similar transaction with respect to the common stock. As of December 31, 2017 a total of 1.4 million shares remain available for future issuance.

The ESPP allows employees to purchase shares of common stock at a 15% discount from market price and pay for the shares through payroll deductions. Eligible employees can enter the plan at specific “offering dates” that occur in six month intervals.

The Company recognized employee stock purchase plan expense of \$83,000, \$71,000 and \$54,000 during the years ended December 31, 2017, 2016 and 2015, respectively.

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Stock Options and Restricted Awards

The weighted-average fair value of stock options granted during 2017, 2016, and 2015 was estimated at \$2.68, \$2.07 and \$4.35 per option, respectively, using the Black-Scholes option-pricing model based on the following assumptions:

Expected Volatility: The Company utilizes a volatility factor based on the Company's historical stock prices for a period of time equal to the expected term of the stock option utilizing weekly price observations. For 2017, 2016, and 2015, the Company utilized weighted-average volatility factors of 39%, 39% and 44%, respectively.

Expected Term: Due to limited historical exercise data, the Company utilizes the simplified method of determining the expected term based on the vesting schedules and terms of the stock options. For 2017, 2016 and 2015, the Company utilized weighted-average expected term factors of 6.3 years, 6.5 years and 6.3 years, respectively.

Risk-Free Interest Rate: The risk-free interest rate factor utilized is based upon the implied yields currently available on U.S. Treasury zero-coupon issues over the expected term of the stock options. For 2017, 2016 and 2015, the Company utilized a weighted-average risk-free interest rate factor of 2.2%, 2.1% and 1.9%, respectively.

Expected Dividends: The Company utilized a weighted average expected dividend rate of 3.3%, 3.6% and 2.4% to value options granted during 2017, 2016 and 2015, respectively.

Information related to all stock options under the 2017 Plan, 2007 Plan and 1997 Plan for the years ended December 31, 2017, 2016 and 2015 is shown in the tables below:

			Weighted	
			Average	Aggregate
			Remaining	Intrinsic
			Contractual	Value
(Shares in thousands)	Shares	Price	Term	(\$000)
Outstanding at December 31, 2016	1,519	10.25	6.1 years	
Granted	128	9.24		
Forfeitures	(700)	12.44		
Exercised	(292)	3.92		
Outstanding at December 31, 2017	655	10.53	6.0 years	\$ 78
Exercisable at December 31, 2017	463	10.49	5.2 years	\$ 78

(Shares in thousands)	Shares	Weighted	Weighted	Aggregate
		Average	Average	Intrinsic
		Exercise	Remaining	Value
		Price	Contractual	(\$000)

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			Term	
Outstanding at December 31, 2015	1,877	\$ 10.30	6.8 years	
Granted	105	7.36		
Forfeitures	(268)	11.91		
Exercised	(195)	6.90		
Outstanding at December 31, 2016	1,519	10.25	6.1 years	\$ 5,816
Exercisable at December 31, 2016	959	9.23	5.3 years	\$ 4,608

			Weighted	
			Weighted Average	Aggregate
			Average	Remaining Intrinsic
			Exercise	Contractual Value
(Shares in thousands)	Shares	Price	Term	(\$000)
Outstanding at December 31, 2014	1,727	\$ 10.12	7.3 years	
Granted	286	11.55		
Forfeitures	(106)	12.31		
Exercised	(30)	4.47		
Outstanding at December 31, 2015	1,877	10.30	6.8 years	\$ 1,769
Exercisable at December 31, 2015	977	8.48	5.4 years	\$ 1,765

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Information related to all restricted stock awards under the 2017 Plan and 2007 Plan for the year ended December 31, 2017 is shown in the table below. The fair value of restricted stock awards is based on the price of the stock in the open market on the date of the grant. The fair value of the restricted stock awards is recorded as compensation expense on a straight-line basis over the vesting periods of the awards and account for forfeitures when they occur.

		Weighted Average Grant Date
(Shares in thousands)	Shares	Fair Value
Nonvested at December 31, 2016	509	\$ 9.64
Granted	405	9.88
Vested	(92)	9.78
Forfeited	(268)	9.70
Nonvested at December 31, 2017	554	9.75

The weighted average grant date fair value of restricted stock awards granted was \$9.88, \$9.76 and \$9.48 per share in fiscal years 2017, 2016 and 2015.

The Company received \$1.1 million in cash from employees exercising options during the year ended December 31, 2017, \$1.3 million in cash from employees exercising options during the year ended December 31, 2016 and \$0.1 million from employees exercising options during the year ended December 31, 2015. The intrinsic value of options exercised during the years ended December 31, 2017, 2016 and 2015 was \$2.6 million, \$1.0 million and \$0.2 million, respectively. Unrecognized compensation expense related to nonvested shares of stock options, restricted stock and performance units was \$5.0 million at December 31, 2017 and will be recognized over a weighted average vesting period of 2.7 years.

Warrants to Purchase Common Stock

The Company has previously issued warrants to purchase common shares in conjunction with business acquisitions, debt issuances and employment contracts.

On December 28, 2006, the Company issued warrants to purchase 250,000 shares to Icarus Investment Corp. (“Icarus”), a related party, at an exercise price of \$9.07 and an expiration date of December 26, 2016. On December 7, 2016, the Company and Icarus entered into an amendment of the warrant agreement pursuant to which the warrants were issued to provide for the cashless exercise of the warrants. During the year ended December 31, 2016, all of the Company’s previously outstanding warrants were exercised and the Company issued 89,640 shares of common stock through a cashless exercise pursuant to such amendment at an effective price of \$9.07 per share. As of December 31, 2017 and 2016, there were zero warrants outstanding.

Stock Purchase

During 2016, the Company repurchased 30,000 shares of common stock from a former owner of a subsidiary acquired by the Company in 2014 for a total cost of \$0.2 million. In December 2016, the Company entered into an agreement to repurchase 75,000 shares of common stock from a current segment president, who is a former owner of a subsidiary acquired by the Company in 2013, for a total cost of \$1.1 million, which was paid in January 2017. This transaction is reflected in the accounts payable and accrued expenses line in the Consolidated Balance Sheets as of December 31, 2016. The shares were immediately retired subsequent to their repurchase. There were no stock repurchases during 2017 or 2015.

11. Pension and Employee Benefit Plans

We sponsor a non-contributory defined benefit pension plan for certain union employees. The accrual of future benefits for all participants who are non-union employees was frozen effective December 31, 2008. The plan is funded in accordance with the funding requirements of the Employee Retirement Income Security Act of 1974.

We also sponsor a postretirement health care plan for office employees retired before January 1, 1990. The plan allows retirees who have attained the age of 65 to elect the type of coverage desired.

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The following tables set forth the plans' changes in benefit obligations, plan assets and funded status on the measurement dates, December 31, 2017, 2016 and 2015, and amounts recognized in our Consolidated Balance Sheets within other long-term liabilities as of those dates.

(Table only in thousands)	Pension Benefits			Other Benefits		
	2017	2016	2015	2017	2016	2015
Change in projected benefit obligation:						
Projected benefit obligation at beginning of year	\$35,012	\$36,140	\$38,208	n/a	n/a	n/a
Accumulated postretirement benefit obligation	n/a	n/a	n/a	131	\$159	\$155
Service cost	415	447	233	—	—	—
Interest cost	1,314	1,426	1,412	4	4	5
Amendments	—	—	—	—	—	9
Actuarial loss/(gain)	1,787	301	(1,744)	3	(8)	18
Administrative expenses	(402)	(606)	(214)	—	—	—
Benefits paid	(1,799)	(2,696)	(1,755)	(26)	(24)	(28)
Projected benefit obligation at end of year	36,327	35,012	36,140	112	131	159
Change in plan assets:						
Fair value of plan assets at beginning of year	24,063	25,296	27,302	—	—	—
Actual return (loss) on plan assets	3,152	2,040	(443)	—	—	—
Employer contribution	1,822	29	406	26	24	28
Administrative expenses	(402)	(606)	(214)	—	—	—
Benefits paid	(1,799)	(2,696)	(1,755)	(26)	(24)	(28)
Fair value of plan assets at end of year	26,836	24,063	25,296	—	—	—
Unfunded status	\$(9,491)	\$(10,949)	\$(10,844)	\$(112)	\$(131)	\$(159)
Defined benefit liabilities included in accounts payable and accrued expenses						
	\$—	\$—	\$—	\$(24)	\$(25)	\$(26)
Defined benefit liabilities included in other liabilities						
	(9,491)	(10,949)	(10,844)	(88)	(106)	(133)
Deferred tax benefit associated with accumulated other comprehensive loss						
	3,153	3,107	3,154	12	15	15
Accumulated other comprehensive loss, net of tax						
	5,154	5,074	5,144	7	9	27
Net amount recognized						
	\$(1,184)	\$(2,768)	\$(2,546)	\$(93)	\$(107)	\$(117)
Other comprehensive income (loss):						
Net loss (gain)	\$358	\$90	\$708	\$3	\$(9)	\$17
Prior service cost	—	—	—	—	—	9
Amortization of prior service cost	—	—	—	(11)	(10)	(9)
Amortization of net actuarial (gain)/loss	(227)	(212)	(258)	3	1	3
Total recognized in other comprehensive income (loss)	\$131	\$(122)	\$450	\$(5)	\$(18)	\$20
Accumulated other comprehensive income:						
Net loss (gain)	\$8,307	\$8,181	\$8,298	\$(22)	\$(28)	\$(20)
Prior service cost	—	—	—	41	52	62
Amount recognized in accumulated other comprehensive income						
	\$8,307	\$8,181	\$8,298	\$19	\$24	\$42

Weighted-average assumptions used to determine

benefit obligations for the year ended

December 31:

Discount rate	3.35	%	3.85	%	4.00	%	2.65 %	2.75 %	3.00 %
Compensation increase rate	n/a		n/a		n/a		n/a	n/a	n/a

Benefits under the plans are not based on wages and, therefore, future wage adjustments have no effect on the projected benefit obligations.

During 2017, 2016 and 2015, the Company updated the mortality tables (RP-2017 Total Mortality Table, RP-2016 Total Mortality Table, and RP-2015 Total Mortality Table for each respective year) in the underlying assumptions used to determine benefit obligations.

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Included in other comprehensive income for our defined benefit plans, net of related tax effect, were an increase in the minimum liability of \$0.1 million in 2017, a decrease of \$0.1 million in 2016 and an increase of \$0.3 million in 2015.

The details of net periodic benefit cost for pension benefits included in the accompanying Consolidated Statements of Operations for the years ended December 31, 2017, 2016 and 2015 are as follows:

(Table only in thousands)	2017	2016	2015
Service cost	\$415	\$447	\$233
Interest cost	1,314	1,426	1,412
Expected return on plan assets	(1,723)	(1,829)	(2,009)
Net amortization and deferral	227	212	258
Net periodic benefit cost (income)	\$233	\$256	\$(106)
Weighted-average assumptions used to determine net			
periodic benefit costs for the years ended December 31:			
Discount rate	3.85 %	4.00 %	3.75 %
Expected return on assets	7.25 %	7.50 %	7.50 %
Compensation increase rate	n/a	n/a	n/a

The basis of the long-term rate of return assumption reflects the current asset mix for the pension plans of approximately 30% to 40% debt securities and 60% to 70% equity securities with assumed average annual returns of approximately 4% to 6% for debt securities and 8% to 12% for equity securities. The investment portfolio for the pension plans will be adjusted periodically to maintain the current ratios of debt securities and equity securities. Additional consideration is given to the historical returns for the pension plan as well as future long range projections of investment returns for each asset category.

The net loss and prior service cost for the defined benefit pension plan that will be amortized from accumulated other comprehensive loss into net periodic benefit cost during 2018 are \$0.2 million and zero, respectively. The net gain and prior service cost for the healthcare plan that will be amortized from accumulated other comprehensive income into net periodic benefit cost during 2018 is \$2,000 and \$11,000, respectively.

At December 31, 2017, a 25 basis point change in the discount rate would change the projected benefit obligation by approximately \$1.1 million in the Projected Benefit Obligation and would change Net Periodic Pension Cost by approximately \$9,000. Additionally, a 25 basis point change in the assumed long-term rate of return on assets would impact Net Periodic Pension Cost by approximately \$66,000.

The net periodic benefit cost (representing interest cost and amortization of net actuarial loss only) for the healthcare plan included in the accompanying Consolidated Statements of Operations was \$11,000, \$15,000 and \$12,000 for the years ended December 31, 2017, 2016 and 2015, respectively. The weighted average discount rate to determine the net periodic benefit cost for 2017, 2016 and 2015 was 2.75%, 3.00% and 3.75%, respectively.

Changes in health care costs have no effect on the plan as future increases are assumed by the retirees.

Pension plan assets are invested in trusts comprised primarily of investments in various debt and equity funds. A fiduciary committee establishes the target asset mix and monitors asset performance. The expected rate of return on assets includes the determination of a real rate of return for equity and fixed income investment applied to the

portfolio based on their relative weighting, increased by an underlying inflation rate. Our defined benefit pension plan asset allocation by asset category is as follows:

	Target	Percentage of			
	Allocation	Plan Assets			
	2017	2017	2016	2017	2016
Asset Category:					
Cash and cash equivalents	0	% 4	% 4	% 4	% 4
Equity securities	70	% 70	% 67	% 70	% 67
Debt securities	30	% 26	% 29	% 26	% 29
Total	100	% 100	% 100	% 100	% 100

Estimated pension plan cash obligations are \$1.9 million, \$2.1 million, \$2.2 million, \$2.1 million, and \$2.2 million for 2018 through 2022, respectively, and a total of \$10.7 million for the years 2023 through 2026. Estimated healthcare plan cash obligations are \$24,000, \$20,000, \$17,000, \$14,000, and \$11,000 for 2018 through 2022, respectively, and a total of \$30,000 for the years 2023 through 2027.

Fair Value Measurements of Pension Plan Assets

Following is a description of the valuation methodologies used for pension assets measured at fair value:

• **Cash and cash equivalents:** Cash and cash equivalents consist primarily of cash on deposit in money market funds. Cash and cash equivalents are stated at cost, which approximates fair value.

• **Equity securities:** Equity securities consist of various managed funds that invest primarily in common stocks. These securities are valued at the net asset value of shares held by the plans at year-end. The net asset value is calculated based on the underlying shares and investments held by the funds.

• **Debt securities:** Debt securities consist of U.S. government and agency securities, corporate bonds and notes, and managed funds that invest in fixed income securities. U.S governmental and agency securities are valued at closing prices reported in the active market in which the individual securities are traded. Corporate bonds and notes are valued using market inputs including benchmark yields, reported trades, broker/dealer quotes, issuer spreads, two-sided markets, benchmark securities, bids, offers and reference data including market research publications. Inputs may be prioritized differently at certain times based on market conditions. Managed funds are valued at the net asset value of shares held by the plans at year end. The net asset value is calculated based on the underlying investments held by the fund.

The preceding methods described may produce a fair value calculation that may not be indicative of net realizable value or reflective of future fair values. Furthermore, although the Company believes its valuation methods are appropriate and consistent with other market participants, the use of different methodologies or assumptions to determine the fair value of certain financial instruments could result in a different fair value measurement at the reporting date.

The Company's assessment of the significance of a particular input to the fair value measurement requires judgment and may affect the valuation of the fair value of assets and liabilities and their placement within the fair value hierarchy levels.

The levels assigned to the defined benefit plan assets as of December 31, 2017, are summarized in the tables below:

(Table only in thousands)	Level 1	Level 2	Level 3	Total
Pension assets, at fair value:				
Cash and cash equivalents	\$ 1,147	\$ —	\$ —	\$ 1,147
Equity securities	18,723	—	—	18,723
Debt securities	6,967	—	—	6,967
Total assets	\$ 26,836	\$ —	\$ —	\$ 26,836

The levels assigned to the defined benefit plan assets as of December 31, 2016, are summarized in the tables below:

(Table only in thousands)	Level 1	Level 2	Level 3	Total
Pension assets, at fair value:				
Cash and cash equivalents	\$894	\$ —	\$ —	\$894
Equity securities	16,153	—	—	16,153
Debt securities	7,016	—	—	7,016
Total assets	\$24,063	\$ —	\$ —	\$24,063

The Company contributes to a number of multiemployer defined benefit pension plans under the terms of collective-bargaining agreements that cover its union-represented employees. The risks of participating in these multiemployer plans are different from single-employer plans in the following aspects:

- Assets contributed to the multiemployer plan by one employer may be used to provide benefits to employees of other participating employers.
- If a participating employer stops contributing to the plan, the unfunded obligations of the plan may be borne by the remaining participating employers.

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If the Company chooses to stop participating in some of its multiemployer plans, CECO may be required to pay those plans an amount based on the underfunded status of the plan, referred to as a withdrawal liability. The Company participation in these plans for the annual period ended December 31, 2017, is outlined in the table below. The “EIN/Pension Plan Number” column provides the Employer Identification Number and the three-digit plan number, if applicable. Unless otherwise noted, the most recent Pension Protection Act zone status available in 2017, 2016 and 2015 is for the plan’s year-end at December 31, 2016, December 31, 2015 and December 31, 2014, respectively. The zone status is based on information that the Company received from the plan and is certified by the plan’s actuary. Among other factors, plans in the red zone are generally less than 65% funded, plans in the yellow zone are less than 80% funded, and plans in the green zone are at least 80% funded. The “FIP/RP Status Pending/Implemented” column indicates plans for which a financial improvement plan (FIP) or a rehabilitation plan (RP) is either pending or has been implemented. The last column lists the expiration date(s) of the collective-bargaining agreement(s) to which the plans are subject.

	EIN/Pension Plan Number	Act Zone	Pension Protection	FIP/RP Status Pending/ Implemented	Surcharge Imposed	Expiration of Collective Bargaining Agreement
Sheet Metal Workers’ National Pension Fund	52-6112463/001	Yellow		FIP: Yes - Implemented RP: Yes - Implemented	No	various May 31, 2018
Sheet Metal Workers Local 224 Pension Plan	31-6171353/001	Yellow		FIP: Yes - Implemented	No	May 31, 2020
Sheet Metal Workers Local No. 20, Indianapolis Area Pension fund	51-0168516/001	Green		Is not subject	No	May 1, 2018
Sheet Metal Workers Local No. 177 Pension Fund	62-6093256/001	Green		Is not subject	No	

Kirk and Blum was listed in the Sheet Metal Workers Local No. 177 Pension Fund’s Form 5500 as providing more than five percent of total contributions for the year ended December 31, 2016. The Company was not listed in any of the other plans’ Forms 5500 as providing more than five percent of the total contributions for the plans and plan years. At the date the financial statements were issued, Forms 5500 were not available for the plan years ended December 31, 2017.

We have no current intention of withdrawing from any plan and, therefore, no liability has been provided in the accompanying consolidated financial statements.

Amounts charged to pension expense under the above plans including the multi-employer plans totaled \$2.0 million, \$2.1 million and \$1.3 million in 2017, 2016 and 2015, respectively.

We have a profit sharing and 401(k) savings retirement plan for employees of certain of our subsidiaries. The plan covers substantially all employees who have 30 days of service, and who have attained 18 years of age. The plan

allows us to make discretionary contributions and provides for employee salary deferrals of up to 100%. We made aggregate matching contributions and discretionary contributions of \$1.6 million, \$1.5 million, and \$1.2 million during 2017, 2016 and 2015, respectively.

As a result of the PMFG acquisition, the Company acquired a defined contribution pension plan under Section 401(k) of the Internal Revenue Code for eligible employees who have completed at least 90 days of service (“PMFG Plan”). Company contributions are voluntary and at the discretion of the board of directors. For the year ended December 31, 2015, matching contributions of \$0.1 million were made by the Company after the acquisition. The PMFG Plan was merged with the CECO 401(k) savings retirement plan in January 2016. The contributions made to these participants for the years ended December 31, 2017 and December 31, 2016 were included in the profit-sharing and 401(k) savings retirement plan contributions noted above.

12. Leases

Sale-leaseback Transactions

Denton Facility

On June 2, 2016, the Company entered into an agreement to sell its manufacturing facility in Denton, Texas for gross proceeds of \$5.0 million, less costs associated with the transaction of \$0.3 million, or net proceeds of \$4.7 million. As a part of the transaction, the Company entered into a lease for the property from the purchaser for an initial period of 13 years.

Prior to the consummation of the above transaction, the Company entered into a sublease agreement with a supplier of the Company at this facility for a period of five years. Due to the Company's continuing involvement through the sublease agreement, the Company has accounted for the sale-leaseback as a financing liability. Payments made by the Company are allocated between interest expense and a reduction to the sale-leaseback financing liability. The weighted-average effective interest rate of the initial sale-leaseback financing liability is 2.22%.

In June 2017, the Company amended the lease agreement. The amendment extended the lease through June of 2031 and changed the effective weighted average interest rate from the 2.22% to the 4.53%.

As of December 31, 2017, future payments on the sale-leaseback financing liability are as follows (in thousands):

Fiscal Years	Payments
2018	406
2019	414
2020	422
2021	431
2022	439
Thereafter	4,106
Total payments	6,218
Less amount representing interest	(1,635)
Total sale-leaseback financing liability	4,583
Less current portion of sale-leaseback financing liability included in accounts payable	
and accrued expenses	(202)
Long-term portion of sale-leaseback financing liability included in other liabilities	\$ 4,381

As of December 31, 2017 and 2016, the net carrying value of the Denton facility assets that are included in property, plant, and equipment on our Consolidated Balance Sheets amounted to \$11.0 million and \$12.3 million, respectively. The useful life of these assets was modified to the remainder of the lease's duration.

Telford Facility

On June 2, 2016, the Company entered into an agreement to sell its manufacturing facility in Telford, Pennsylvania for gross proceeds of \$6.0 million, less costs associated with the transaction of \$0.4 million, or net proceeds of \$5.6 million. As a part of the transaction, the Company entered into a lease for the property from the purchaser for a period of 13 years.

The Company recorded a deferred gain on the sale of this facility in the amount of \$2.4 million recorded in the Consolidated Balance Sheets as an offset to property, plant, and equipment, which will be recognized over the 13-year lease term. As a result of this transaction, the Company initially recorded a capital lease obligation of \$5.7 million for the facilities leased. The weighted-average effective interest rate of the capital lease was 3.43%.

Indianapolis Facility

On August 16, 2016, the Company entered into an agreement to sell its manufacturing facility in Indianapolis, Indiana for gross proceeds of \$3.3 million, less costs associated with the transaction of \$0.1 million, or net proceeds of \$3.2 million. As a part of the transaction, the Company entered into a lease for the property from the purchaser for a period of 13 years.

The Company recorded a deferred gain on the sale of this facility in the amount of \$2.0 million recorded in the Consolidated Balance Sheets as an offset to property, plant, and equipment, which will be recognized over the 13-year lease term. As a result of this transaction, the Company initially recorded a capital lease obligation of \$3.0 million for the facilities leased. The weighted-average effective interest rate of the capital lease was 3.25%.

The future minimum payments for the Indianapolis and Telford capital leases that the Company entered into as of December 31, 2017, are as follows (in thousands):

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Fiscal Years	Payments
2018	\$ 759
2019	774
2020	790
2021	805
2022	821
Thereafter	5,756
Total payments	9,705
Less amount representing interest	(1,705)
Present value of future minimum lease payments	8,000
Less current portion of capital lease obligation included in accounts payable and accrued expenses	(501)
Long-term portion of capital lease obligation included in other liabilities	\$ 7,499

Prior to the execution of these transactions, the Company did not have any assets held under capital leases. Capital lease assets included in the Consolidated Balance Sheets as part of property, plant, and equipment as of December 31, 2017, are as follows (in thousands):

	December 31, 2017	December 31, 2016	Depreciable Life (Years)
Building and improvements, net of deferred gain	\$ 4,385	\$ 4,385	13
Less: Accumulated depreciation	(534)	(197)	
Total	\$ 3,851	\$ 4,188	

Rent

We lease certain facilities on a year-to-year basis. We also have future annual minimum rental commitments under noncancelable operating leases as follows:

(Table only in thousands)

December 31,	Commitment
2018	\$ 4,470
2019	3,197
2020	2,477
2021	2,228
2022	1,764
2023 and thereafter	3,128
	\$ 17,264

Total rent expense under all operating leases for 2017, 2016 and 2015 was \$4.2 million, \$4.5 million and \$4.0 million, respectively.

13. Commitments and Contingencies

Legal Proceedings

Asbestos cases

Our subsidiary, Met-Pro, beginning in 2002 began to be named in asbestos-related lawsuits filed against a large number of industrial companies including, in particular, those in the pump and fluid handling industries. In management's opinion, the complaints typically have been vague, general and speculative, alleging that Met-Pro, along with the numerous other defendants, sold unidentified asbestos-containing products and engaged in other related actions which caused injuries (including death) and loss to the plaintiffs. Counsel has advised that more recent cases typically allege more serious claims of mesothelioma. The Company's insurers have hired attorneys who, together with the Company, are vigorously defending these cases. Many cases have been dismissed after the plaintiff fails to produce evidence of exposure to Met-Pro's products. In those cases, where evidence has been produced, the Company's experience has been that the exposure levels are low and the Company's position has been that its products were not a

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cause of death, injury or loss. The Company has been dismissed from or settled a large number of these cases. Cumulative settlement payments from 2002 through December 31, 2017 for cases involving asbestos-related claims were \$1.3 million which together with all legal fees other than corporate counsel expenses; \$1.2 million have been paid by the Company's insurers. The average cost per settled claim, excluding legal fees, was approximately \$28,000.

Based upon the most recent information available to the Company regarding such claims, there were a total of 218 cases pending against the Company as of December 31, 2017 (with Connecticut, New York, Pennsylvania and West Virginia having the largest number of cases), as compared with 229 cases that were pending as of December 31, 2016. During 2017, 51 new cases were filed against the Company, and the Company was dismissed from 56 cases and settled six cases. Most of the pending cases have not advanced beyond the early stages of discovery, although a number of cases are on schedules leading to, or are scheduled for trial. The Company believes that its insurance coverage is adequate for the cases currently pending against the Company and for the foreseeable future, assuming a continuation of the current volume, nature of cases and settlement amounts. However, the Company has no control over the number and nature of cases that are filed against it, nor as to the financial health of its insurers or their position as to coverage. The Company also presently believes that none of the pending cases will have a material adverse impact upon the Company's results of operations, liquidity or financial condition.

Valero

One of our subsidiaries, Fisher-Klosterman, Inc. ("FKI"), was a defendant in a products liability lawsuit filed in Harris County, Texas on August 23, 2010 by three Valero refining companies ("Valero Suit"). The plaintiffs claimed that FKI (and its co-Defendants) used an allegedly defective refractory material included in cyclones it supplied to Valero that caused damages to refineries they own and operate. Plaintiffs claimed to have suffered property damages, including catalyst loss, regenerator repair costs, replacement part costs, damage to other property and business interruption loss. During 2014, the Company reached a settlement with the plaintiffs for \$0.5 million and, accordingly, recorded a corresponding charge to operations. In addition, the Company reached an agreement with a supplier to recover \$0.2 million related to this matter. The recovery was also recorded during 2014. The Company's insurer, Valley Forge Insurance Company ("Valley Forge") who had paid for the legal defense in this matter, initiated a new case in the Southern District of Ohio against the Company in October 2014 seeking, among other things, recoupment of past legal costs paid ("Coverage Suit"). Valley Forge claimed that it did not have an obligation to defend FKI and was entitled to recoup all amounts paid to defend FKI. The Court rejected Valley Forge's position on the duty to defend as contrary to Ohio law. The Court found that if Valley Forge could prove that FKI breached its duty to cooperate in defending the Valero Suit, Valley Forge may be relieved of its duty to defend to some extent. Valley Forge moved for reconsideration of the Court's opinion in May 2016, which the court ruled against. The Court ruled in 2017 that Valley Forge could amend its complaint. The Company and Valley Forge executed an agreement in December of 2017 to settle the matter for a nominal amount. As a result of this settlement, Valley Forge and FKI agreed to dismiss their claims against one another.

Viron

On October 3, 2014, Viron International ("Viron") filed a complaint against us and our subsidiary, the Kirk and Blum Manufacturing Company ("Kirk & Blum"), in the United States District Court for the Western District of Texas (the "Court") seeking damages against us for alleged breach of contract. After a trial in 2015, the Court issued Findings of Fact and Conclusions of Law that provide that we breached our contract with Viron and that Viron is entitled to damages in the amount of approximately \$0.6 million plus attorneys' fees. Additionally, the Court concluded that we are not entitled to an offset for the invoiced amounts of \$0.2 million not paid by Viron under the contract. In 2015, we settled with Viron for \$0.5 million, \$0.3 million was previously accrued in 2014, and the remaining \$0.2 million was recorded as expense and paid in 2015.

Summary

The Company is also a party to routine contract and employment-related litigation matters and routine audits of state and local tax returns arising in the ordinary course of its business.

The final outcome and impact of open matters, and related claims and investigations that may be brought in the future, are subject to many variables, and cannot be predicted. In accordance with ASC 450, "Contingencies," and related guidance, we record reserves for estimated losses relating to claims and lawsuits when available information indicates that a loss is probable and the amount of the loss, or range of loss, can be reasonably estimated. The Company expenses legal costs as they are incurred.

We are not aware of pending claims or assessments, other than as described above, which may have a material adverse impact on our liquidity, financial position, results of operations, or cash flows.

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14. Income Taxes

On December 22, 2017, the Tax Act was signed into law making significant changes to the U.S. tax code. Changes affecting the Company's consolidated 2017 financial statements include, but are not limited to, a U.S. federal corporate tax rate decrease from 35% to 21% effective for tax years beginning after December 31, 2017 and a one-time transition tax, payable over eight years, on the mandatory deemed repatriation of cumulative foreign earnings as of December 31, 2017.

On December 22, 2017, the SEC staff issued SAB 118, which provides guidance on accounting for the tax effects of the Tax Act when a registrant does not have the necessary information available, prepared, or analyzed (including computations) in reasonable detail to complete the accounting for certain income tax effects of the Tax Act. In accordance with SAB 118, the Company has recognized provisional amounts related to the tax effects of the Tax Act for which the Company was able to make reasonable estimates. For the provisions of the Tax Act for which the Company was unable to determine a provisional amount, the Company has continued to apply ASC 740 on the basis of the provisions of the tax laws that were in effect immediately before the enactment of the Tax Act. Tax effects of the Tax Act will be recognized or adjusted as additional implementation guidance is released and analyses are finalized, but no later than the end of the measurement period prescribed by SAB 118, which is one year from the enactment date of the Tax Act.

The provisional amount recorded related to the remeasurement of certain deferred tax assets and liabilities, based on the rates at which they are expected to reverse in the future, was a net benefit of \$4.8 million. The provisional amount recorded related to the one-time transition tax on the mandatory deemed repatriation of foreign earnings was a charge of \$6.4 million. The Company has not historically claimed significant Foreign Tax Credits. An estimate of potential Foreign Tax Credits available to offset the one-time transition tax has not been made and no provisional amount is provided.

The Company has not historically recorded deferred income taxes on the undistributed earnings of its foreign subsidiaries because of management's intent to indefinitely reinvest such earnings. As of December 31, 2017, Management has not changed its intent to indefinitely reinvest such earnings, but the Tax Act could cause management to reevaluate this position in the future. The Tax Act subjected all previously untaxed earnings and profits of our controlled foreign corporations to a one-time mandatory repatriation tax. Future distributions of these earnings in the form of dividends or otherwise would no longer be subject to U.S. income taxes. State taxes, as well as foreign withholding taxes, could apply to distributions of earnings from foreign jurisdictions. Since the foreign earnings remain permanently reinvested in the Company's foreign operations, no liability has been established for potential withholding taxes or other costs that would be incurred if the earnings were repatriated. As of December 31, 2017, aggregate undistributed earnings of foreign subsidiaries totaled approximately \$15.4M. The unrecognized deferred income tax liability on this temporary difference is estimated to be approximately \$1.0 million.

Income (loss) before income taxes was generated in the United States and globally as follows:

(Table only in thousands)	2017	2016	2015
Domestic	\$3,891	\$(39,623)	\$997
Foreign	(2,482)	6,659	(4,093)
	\$1,409	\$(32,964)	\$(3,096)

Income tax provision consisted of the following for the years ended December 31:

(Table only in thousands)	2017	2016	2015
Current:			
Federal	\$6,234	\$4,957	\$3,429
State	388	892	753
Foreign	939	3,191	1,944
	7,561	9,040	6,126
Deferred:			
Federal	(2,479)	(2,794)	(3,012)
State	114	(409)	(563)
Foreign	(758)	(547)	87
	(3,123)	(3,750)	(3,488)
	\$4,438	\$5,290	\$2,638

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The income tax provision differs from the statutory rate due to the following:

(Table only in thousands)	2017	2016	2015
Tax expense (benefit) at statutory rate	\$494	\$(11,525)	\$(1,083)
Increase (decrease) in tax resulting from:			
State income tax, net of federal benefit	367	174	34
Domestic production activities deduction	(235)	(561)	(211)
Intangible asset and goodwill impairment	1,789	17,859	—
Change in uncertain tax position reserves	465	(624)	(1,281)
Permanent differences	1,026	(31)	1,162
Impact of rate differences and adjustments	(20)	(1,655)	(1,489)
United States and foreign tax incentives	(240)	(1,035)	(883)
Non-deductible transaction costs	—	7	1,356
Earnout (income) expense	(1,779)	2,573	3,928
Change in valuation allowance	1,044	222	483
Audit settlements	—	—	65
Provision-to-return adjustments	(495)	108	808
Revaluation of deferred tax assets and liabilities	(4,819)	—	—
Net deemed dividend on repatriation of foreign earnings	6,426	—	—
Other	415	(222)	(251)
	\$4,438	\$5,290	\$2,638

Deferred income taxes reflect the future tax consequences of temporary differences between the carrying amounts of assets and liabilities for financial reporting purposes and the amounts used for income tax purposes and tax credit carry forwards. As a result of the Tax Act, net deferred tax liabilities were remeasured as of December 31, 2017 based on a reasonable estimate of the effect of the change in the federal tax rate. The net deferred tax liabilities consisted of the following at December 31:

(Table only in thousands)	2017	2016
Gross deferred tax assets:		
Accrued expenses and other	\$286	\$3
Reserves on assets	2,000	3,078
Share-based compensation awards	436	1,340
Minimum pension / post retirement	2,318	4,197
Net operating loss carry-forwards	3,471	5,932
Tax credit carry-forwards	1,634	1,634
Valuation allowances	(3,873)	(3,135)
	6,272	13,049
Gross deferred tax liabilities:		
Depreciation	(448)	(614)
Goodwill and intangibles	(13,588)	(23,060)
Prepaid expenses and inventory	(585)	(785)
Revenue recognition	(1,861)	(1,554)
	(16,482)	(26,013)

Net deferred tax liabilities \$(10,210) \$(12,964)

As of December 31, 2017, the Company has federal net operating loss carry forwards of \$4.9 million, and state and local net operating loss carry forwards of \$23.4 million, which expire from 2018 to 2037. The Company has recorded a valuation allowance on certain of these net operating loss carry forwards to reflect expected realization. The Company also has net operating loss carry forwards in international jurisdictions totaling \$8.8 million. A full valuation allowance has been established against substantially all of these losses in international jurisdictions. As of December 31, 2017 and 2016, the Company has recorded a valuation reserve in the amount of \$3.9 million and \$3.1 million, respectively. The changes in the valuation allowance resulted in additional income tax expense of \$1.0 million, \$0.2 million, and \$0.6 million in 2017, 2016, and 2015, respectively.

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In assessing the realizability of deferred tax assets, management considers whether it is more likely than not that some portion or all of the deferred tax assets will not be realized. The ultimate realization of deferred tax assets is dependent upon the generation of future taxable income during the periods in which those temporary differences become deductible. Management considers the scheduled reversal of deferred tax liabilities (including the impact of available carryback and carry forward periods), projected future taxable income, and tax-planning strategies in making this assessment. Based on this assessment, management believes it is more likely than not that the Company will realize the benefits of these deductible differences, net of the existing valuation allowances at December 31, 2017. The amount of the deferred tax assets considered realizable, however, could be reduced in the near term if estimates of future taxable income during the carryforward period are reduced.

The Company accounts for uncertain tax positions pursuant to FASB ASC Topic 740. The Company recognizes the effect of income tax positions only if those positions are more likely than not of being sustained. Recognized income tax positions are measured at the largest amount that is greater than 50% likely of being realized. Changes in recognition or measurement are reflected in the period in which the change in judgment occurs. The Company estimates that it may settle one or more foreign and domestic audits in the next twelve months that may result in a decrease in the amount of accrual for uncertain tax positions of up to \$0.5 million. A reconciliation of the beginning and ending amount of uncertain tax position reserves included in other liabilities on the Consolidated Balance Sheets is as follows:

(Table only in thousands)	2017	2016
Balance as of January 1,	\$401	\$1,024
Additions for tax positions taken in prior years	465	—
Statute expirations	—	(576)
Reductions of tax positions taken in prior years	—	(47)
Balance as of December 31,	\$866	\$401

The Company recognizes interest and penalties related to uncertain tax positions in income tax expense. During 2017, 2016, and 2015, there was no such expense for interest and penalties. The favorable settlement of all uncertain tax positions would impact the Company's effective income tax rate. Tax years going back to 2014 remain open for examination by Federal authorities, and back to 2012 remain open for all significant state and foreign authorities.

15. Related Party Transactions

During 2017, 2016 and 2015 we paid fees of \$0.3 million, \$0.4 million and \$0.4 million, respectively, for consulting services to Icarus, through which Jason DeZwirek, our Chairman of our Board, provides services. During 2017, 2016 and 2015, we paid fees of \$0.1 million, \$0.1 million and \$0.3 million, respectively, for consulting services to JMP Fam Holdings Inc., through which Jonathan Pollack, a member of the Board of Directors, provides services. All services described above are based on verbal agreements with the Company. The Board of Directors approves the above services on an annual basis.

During the year ended December 31, 2016, the Company issued 89,640 shares of common stock to Icarus in connection with a cashless exercise of a warrant. In 2016, the Company entered into an agreement to repurchase 75,000 shares of common stock from a current employee. See Note 10 for further detail related to these transactions.

During 2017, 2016, and 2015, we incurred rent expense of \$0.6 million, \$1.1 million, and \$1.1 million, respectively, to lease facilities owned by the subsidiaries' former owners at Adwest, Zhongli and Emtrol. Effective January 1, 2017 Adwest moved facilities and ended their lease with the former owner of the subsidiary, resulting in zero rent expense paid to the former owner.

During 2017, 2016, and 2015, we purchased \$0.8 million, \$0.8 million and \$0.3 million in inventory from companies owned by the former owner of the Zhongli subsidiary. During 2017, 2016, and 2015, we sold \$0.1 million, zero and \$0.4 million of inventory to the same companies. The Company employed the former owner in a managerial role at this subsidiary through December 31, 2017.

16. Major Customers and Foreign Sales

No single customer represented greater than 10% of consolidated net sales or accounts receivable for 2017, 2016, or 2015.

For 2017, 2016, and 2015, sales to customers outside the United States, including export sales, accounted for approximately 32%, 37%, and 38%, respectively, of consolidated net sales. The largest portion of export sales in 2017 was destined for Asia (12% of the total sales) and Europe (6% of total sales). Of consolidated long lived assets, \$35.4 million and \$34.8 million were located outside of the United States as of December 31, 2017 and 2016, respectively. The largest portion of long-lived assets located outside the United States at December 31, 2017 were in Europe (\$19.6 million of the total long-lived assets), and Asia, (\$13.6 million of the total long-lived assets).

17. Acquisitions

PMFG

On September 3, 2015, the Company completed its acquisition of 100% of PMFG's outstanding common stock for a purchase price of \$136.7 million. PMFG's shareholders had the option to elect to exchange each share of PMFG common stock for either (i) \$6.85 in cash, without interest, or (ii) shares of the Company's common stock valued at \$6.85, based on the volume weighted average trading price of the Company's common stock for the 15-trading day period ending on September 2, 2015, the last trading day before the closing of the acquisition, subject to a collar so that there was a maximum exchange ratio of 0.6456 shares of the Company's common stock for each share of PMFG common stock and a minimum exchange ratio of 0.5282 shares of the Company's common stock for each share of PMFG common stock, subject to certain exceptions and with overall elections subject to proration.

Approximately 44.5% of the shares of PMFG common stock converted into the right to receive the \$6.85 cash consideration, for an approximate total of \$64.6 million. The Company's common stock trading price for the 15 day period was \$9.6655. As a result, each of the remaining shares of PMFG common stock converted into the right to receive 0.6456 shares of Company common stock, or an approximate total of 7,602,166 shares of Company common stock in aggregate.

In accordance with the proration and reallocation provisions of the merger agreement, because the \$6.85 per share cash consideration was oversubscribed by PMFG shareholders prior to the election deadline, (a) each PMFG share for which a valid stock election was made or for which no valid cash or stock election was made was automatically cancelled and converted into the right to receive the stock consideration and (b) each PMFG shareholder of record that made a valid cash election by the deadline received (i) the cash consideration for approximately 58.05% of such holder's PMFG shares for which a valid cash election was made and (ii) the stock consideration for approximately 41.95% of such holder's PMFG Shares for which a valid cash election was made. The value of stock recorded for purchase accounting was \$72.1 million, which equates to approximately \$9.49 per share.

PMFG is a global provider of engineered equipment for the abatement of air pollution, the separation and filtration of containments from gases and liquids, and industrial noise control equipment, which complements our Energy segment businesses.

As a result of the PMFG acquisition, the Company acquired a 60% equity investment in Peerless Propulsys that entitled the Company to 80% of Peerless Propulsys's earnings. In prior periods, the noncontrolling interest of Peerless Propulsys was reported as a separate component on the Consolidated Balance Sheets. During 2016, the Company entered into an agreement with the noncontrolling owner of Peerless Propulsys and issued a promissory note in the amount of \$5.3 million due on July 11, 2019 in exchange for 100% ownership in the equity and earnings of Peerless Propulsys. The minority interest had a carrying value of \$4.1 million on July 11, 2016, compared to the purchase price of \$5.3 million. Since the Company already had control over the equity investment, the excess paid of \$1.2 million was recorded as a debit to additional paid in capital. The interest rate on the note payable is 1.50%, which approximates the market rate given the short term duration of the note payable. All of the borrowers' assets are pledged to secure this agreement. As of December 31, 2017, \$5.3 million of the note payable was outstanding and is payable at the earlier of July 11, 2019 or thirty days subsequent to the sale of building and land that the Company owns in China. The note payable is currently classified as a current liability in the Consolidated Balance Sheets as of December 31, 2017. In conjunction with entering into the agreement to acquire the noncontrolling interest of Peerless Propulsys, the Company listed the land and building as assets held for sale with a carrying value of \$5.4 million in the

Consolidated Balance Sheets as of December 31, 2017.

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The following table summarizes the fair values of the assets acquired and liabilities assumed at the date of closing after the Company finalized purchase accounting during 2016.

(Table only in thousands)	
Current assets (including cash of \$27,100)	\$92,293
Property and equipment	24,787
Other assets	953
Assets held for sale (a)	950
Deferred income tax asset	—
Goodwill	59,860
Intangible – finite life	29,940
Intangible – indefinite life	10,280
Total assets acquired	219,063
Current liabilities assumed	(73,364)
Deferred income tax liability	(800)
Long term liabilities assumed	(3,961)
Noncontrolling interest	(4,212)
Net assets acquired	\$136,726

(a) The assets held for sale consists primarily of real property, and are valued at the estimated proceeds less cost to sell. The Company has not recorded a gain or loss on the classification of the subject assets to held for sale. During 2017, 2016, and 2015, PMFG accounted for \$89.4 million, \$101.7 million, and \$40.8 million of revenue, respectively, and \$6.7, \$13.1 million, and \$2.2 million of pre-tax income, respectively, included in the Company's results.

Goodwill related to the PMFG acquisition is not deductible for tax purposes.

The following unaudited pro forma information represents the Company's results of operations as if PMFG acquisition had occurred as of January 1, 2014:

	Year Ended December 31, 2015
(Table only in thousands, except per share data)	31, 2015
Net sales	\$460,726
Net loss	(29,568)
Earnings per share:	
Basic	(0.87)
Diluted	(0.87)

The pro forma results have been prepared for informational purposes only and include adjustments to amortize acquired intangible assets with finite life, reflect foregone interest income on cash paid for the acquisitions, reflect additional interest expense on debt used to fund the acquisitions, and to record the income tax consequences of the pro

forma adjustments. Included in the pro forma results are acquisition related expenses of \$17.7 million, and certain nonrecurring expenses, such as goodwill impairment, of \$3.7 million, for the year ended December 31, 2015. Shares used to calculate the basic and diluted earnings per share were adjusted to reflect the additional shares of common stock issued to fund a portion of the acquisition price. These pro forma results do not purport to be indicative of the results of operations that would have occurred had the purchases been made as of the beginning of the periods presented or of the results of operations that may occur in the future.

Goodwill recognized on the PMFG acquisition represents value the Company expects to be created by combining the operations of the acquired business with the Company's operations, including the expansion into markets within existing business segments, access to new customers and potential cost savings and synergies. See Note 7 for further discussion related to the Company's goodwill.

Acquisition and integration expenses on the Consolidated Statements of Operations are related to acquisition activities, which include retention, legal, accounting, banking, and other expenses.

18. Business Segment Information

The Company's operations are organized and reviewed by management along its product lines or end market that the segment serves and are presented in three reportable segments. The results of the segments are reviewed through to the "Income (loss) from operations" line on the Consolidated Statements of Operations. The accounting policies of the segments are the same as those in the consolidated financial statements. Except for the information reported on a segment basis, the Company does not accumulate net sales information by product or service and therefore, the Company does not disclose net sales by product or service because to do so would be impractical. The Company's reportable segments are however organized as groups of similar products and services, defined as follows:

Energy Segment

Our Energy segment provides customized solutions for the power and petrochemical industry. This includes gas turbine exhaust systems, dampers and diverters, gas and liquid separation and filtration equipment, selective catalytic reduction ("SCR") and selective non-catalytic reduction ("SNCR") systems, acoustical components and silencers, secondary separators (nuclear plant reactor vessels) and expansion joints, the design and manufacture of technologies for flue gas and diverter dampers, non-metallic expansion joints, natural gas turbine exhaust systems, and silencer and precipitator applications, primarily for coal-fired and natural gas power plants, refining, oil production and petrochemical processing, as well as a variety of other industries.

Environmental Segment

Our Environmental segment provides the design and manufacture of product recovery and air pollution control technologies that enable our customers to meet compliance targets for toxic emissions, fumes, volatile organic compounds, process and industrial odors. These products and solutions include high efficiency and fluid catalytic cracking cyclone systems, scrubbers, regenerative thermal and catalytic oxidizers, dust collectors and baghouses, standard and engineered industrial ducting, fabric filters and cartridge collectors, ventilation and exhaust systems for emissions and contaminants, and process cooling systems for steel in rolling mills. This segment also provides component parts for industrial air systems and provides cost effective alternatives to traditional duct components, as well as custom metal engineered fabrication services. These products and services are applicable to a wide variety of industries.

Fluid Handling and Filtration Segment

Our Fluid Handling and Filtration segment provides the design and manufacture of high quality pump, filtration and fume exhaust solutions. This includes centrifugal pumps for corrosive, abrasive and high temperature liquids, filter products for air and liquid filtration, precious metal recovery systems, carbonate precipitators, and technologically advanced air movement and exhaust systems. These products are applicable to a wide variety of industries, particularly the aquarium/aquaculture, plating and metal finishing, food and beverage, chemical/petrochemical, wastewater treatment, desalination and pharmaceutical markets.

	2017	2016	2015
Net Sales (less intra-, inter-segment sales) (Table only in thousands)			
Energy Segment	\$ 149,514	\$ 203,376	\$ 142,150
Environmental Segment	127,279	153,344	158,371
Fluid Handling and Filtration Segment	69,159	61,783	67,610
Corporate and Other (1)	(901)	(1,492)	(709)

Net sales	\$345,051	\$417,011	\$367,422
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(1) Includes adjustment for revenue on intercompany jobs.

	2017	2016	2015
Income (loss) from Operations			
(Table only in thousands)			
Energy Segment	\$8,987	\$23,575	\$3,488
Environmental Segment	13,703	15,652	17,021
Fluid Handling and Filtration Segment	14,734	(36,209)	11,741
Corporate and Other (2)	(26,649)	(26,981)	(26,592)
Eliminations	(2,751)	(1,599)	(709)
Income (loss) from operations	\$8,024	\$(25,562)	\$4,949

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(2) Includes corporate compensation, professional services, information technology, acquisition and integration expenses, and other general and administrative corporate expenses.

	2017	2016	2015
Property and Equipment Additions (Table only in thousands)			
Energy Segment	\$438	\$569	\$429
Environmental Segment	166	404	166
Fluid Handling and Filtration Segment (3)	382	4,481	150
Corporate and Other	42	7	18
Property and equipment additions	\$1,028	\$5,461	\$763

(3) Includes non-cash additions of \$4,385 for property, plant, and equipment acquired under capital leases for the year ended December 31, 2016. See Note 12 for further detail.

	2017	2016	2015
Depreciation and Amortization (Table only in thousands)			
Energy Segment	\$7,866	\$9,555	\$5,293
Environmental Segment	3,297	3,816	4,443
Fluid Handling and Filtration Segment	4,754	5,406	6,331
Corporate and Other	171	126	453
Depreciation and amortization	\$16,088	\$18,903	\$16,520

	December 31,	
	2017	2016
Identifiable Assets (Table only in thousands)		
Energy Segment	\$217,033	\$257,566
Environmental Segment	107,910	118,680
Fluid Handling and Filtration Segment	100,916	104,294
Corporate and Other (4)	12,690	18,094
Identifiable assets	\$438,549	\$498,634

(4) Corporate assets primarily consist of cash and income tax related assets.

	December 31,	
	2017	2016
Goodwill (Table only in thousands)		

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Energy Segment	\$72,625	\$75,827
Environmental Segment	48,203	48,203
Fluid Handling and Filtration Segment	46,123	46,123
Goodwill	\$166,951	\$170,153

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Intra-segment and Inter-segment Revenues

The Company has multiple divisions that sell to each other within segments (intra-segment sales) and between segments (inter-segment sales) as indicated in the following tables:

Year Ended December 31, 2017

Less Inter-Segment Sales

	Total Sales	Intra - Segment Sales	Environmental	Energy	FHF	Other	Corp and Customers	Net Sales to Outside
Net Sales								
(Table only in thousands)								
Energy Segment	\$158,456	\$ (8,834)	\$(108)	\$—	\$—	\$—		\$149,514
Environmental Segment	131,356	(3,235)	—	(787)	(55)	—		127,279
Fluid Handling and Filtration Segment	73,652	(3,169)	(493)	(832)	—	—		69,159
Corporate and Other (5)	—	—	—	—	—	(901)	(901)	
Net Sales	\$363,464	\$ (15,238)	\$(601)	\$(1,619)	\$(55)	\$(901)		\$345,051

Year Ended December 31, 2016

Less Inter-Segment Sales

	Total Sales	Intra - Segment Sales	Environmental	Energy	FHF	Other	Corp and Customers	Net Sales to Outside
Net Sales								
(Table only in thousands)								
Energy Segment	\$207,280	\$ (3,506)	\$(398)	\$—	\$—	\$—		\$203,376
Environmental Segment	160,959	(4,256)	—	(3,153)	(206)	—		153,344
Fluid Handling and Filtration Segment	64,327	(1,714)	(317)	(513)	—	—		61,783
Corporate and Other (5)	—	—	—	—	—	(1,492)	(1,492)	
Net Sales	\$432,566	\$ (9,476)	\$(715)	\$(3,666)	\$(206)	\$(1,492)		\$417,011

Year Ended December 31, 2015

Less Inter-Segment Sales

Total Sales	Intra - Segment Sales	Environmental	Energy	FHF	Corp and	Net Sales to Outside
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						Other	Customers
Net Sales							
(Table only in thousands)							
Energy Segment	\$ 147,661	\$ (4,876) \$(635)	\$—	\$—	\$—	\$ 142,150
Environmental Segment	167,247	(6,744	) —	(1,937)	(195)	—	158,371
Fluid Handling and Filtration Segment	70,084	(2,277	) (197)	—	—	—	67,610
Corporate and Other (5)	—	—	—	—	—	(709)	(709)
Net Sales	\$ 384,992	\$ (13,897	) \$(832)	\$(1,937)	\$(195)	\$(709)	\$ 367,422

(5) Includes adjustment for revenue on intercompany jobs.

19. Quarterly Data (Unaudited)

Earnings per share amounts are computed independently each quarter. Accordingly, the sum of each quarter's per share amount may not equal the total per share amount for the respective year.

(Table only in thousands, except per share data)	Quarter			
	First	Second	Third	Fourth
Year ended December 31, 2017				
Net sales	\$92,651	\$93,870	\$84,987	\$73,543
Gross profit	31,929	28,486	27,133	25,646
Net income (loss)	38	5,486	3,036	(11,589)
Net income (loss) attributable to CECO Environmental Corp.	38	5,486	3,036	(11,589)
Basic earnings (loss) per share	\$0.00	\$0.16	\$0.09	\$(0.34)
Diluted earnings (loss) per share	\$0.00	\$0.16	\$0.09	\$(0.34)
Year ended December 31, 2016				
Net sales	\$103,175	\$112,258	\$101,596	\$99,982
Gross profit	31,586	33,930	33,676	35,667
Net income (loss)	3,055	4,037	5,826	(51,172)
Net income (loss) attributable to CECO Environmental Corp.	3,100	4,050	5,804	(51,172)
Basic earnings (loss) per share	\$0.09	\$0.12	\$0.17	\$(1.49)
Diluted earnings (loss) per share	\$0.09	\$0.12	\$0.17	\$(1.49)