

Streamlined.
Focused.
Recharged.

Streamlined. Focused. Recharged.

Aegion's mission is to keep infrastructure working better, safer and longer for customers throughout the world. We focus our sustainable solutions on the rehabilitation, monitoring and maintenance of pipeline infrastructure in North America and select international locations.

With a global workforce of almost 5,000 employees and nearly five decades of experience, we serve customers in water and wastewater and oil & gas markets in more than 90 countries on six continents. Our vision is to be the industry leader in the markets we serve through technically differentiated products and services.

We substantially completed a multiyear restructuring effort in 2019 to simplify our organization and reshape our portfolio and footprint to focus on municipal and energy markets that offered scale and favorable earning profiles.

The result: We are streamlined. We are focused. And we enter 2020 RECHARGED for the future.

AEGION CORPORATION FINANCIAL HIGHLIGHTS

	2019	2018	2017	2016	2015
(IN THOUSANDS, EXCEPT PER SHARE DATA)					
FOR THE YEARS ENDED DECEMBER 31					
Revenues	\$ 1,213,935	\$ 1,333,568	\$ 1,359,019	\$ 1,221,920	\$ 1,333,570
Gross Profit	246,235	266,926	284,812	253,927	275,024
Operating Income (Loss)	10,973	29,647	(43,520)	50,791	17,729
Net Income (Loss) Attributable to Aegion Corporation	(20,892)	2,928	(69,401)	29,453	(10,284)
Adjusted Net Income Attributable to Aegion Corporation (non-GAAP) ¹	38,363	39,170	34,438	38,606	45,016
Earnings per Share:					
Net Income (Loss) per Diluted Share	(0.67)	0.09	(2.09)	0.84	(0.28)
Adjusted Net Income per Diluted Share (non-GAAP) ¹	1.21	1.19	1.02	1.10	1.22
Operating Cash Flow	\$ 78,814	\$ 39,669	\$ 63,594	\$ 71,161	\$ 131,255

¹For 2019, 2018, 2017, 2016 and 2015, non-GAAP amounts exclude, as applicable, restructuring charges, goodwill and definite-lived intangible asset impairment charges, impairment of assets held for sale, impacts from the Tax Cuts and Jobs Act, a change in accounting estimates, a project warranty accrual, reversal of a contingency reserve, reserves for disputed and long-dated receivables, certain litigation settlements, certain acquisition-related escrow settlements, acquisition and divestiture expenses, prior debt redemption expenses and joint venture and divestiture activity; see reconciliation on pages A-1, A-2 and A-3.

Dear Fellow Stockholders,

2019 was a turning point for Aegion. We're proud to have delivered on the adjusted earnings targets we laid out at the beginning of the year following several years marked by earnings volatility as a result of challenging businesses and challenging markets. We achieved modest growth in adjusted earnings per share and improved profitability margins. Our success was the result of strong operational discipline and consistent execution on hundreds of projects across our core service lines and notably did not include the benefit of a significant large project, which has often provided cushion to earnings in the past. Our results reaffirm the importance and effectiveness of the multiyear restructuring and simplification efforts we undertook to reshape Aegion into a more streamlined and focused company.

Our 2019 highlights included:

- Gross margin improvement in our cornerstone North American Insituform business of 300 basis points, which drove Infrastructure Solutions' segment margins to the highest level in three years;
- A doubling of earnings contributions from our United Pipeline Systems business, which benefited our Corrosion Protection segment results;
- A third consecutive year of double-digit adjusted earnings growth from our Energy Services segment;
- Continued investments in the innovation of multiple new product offerings;
- Growth in year-end backlog levels of nearly \$18 million, or 3%, over the prior year, excluding exited or to-be-exited businesses as part of our restructuring actions;
- Operating cash flow generation of \$79 million, enabling \$29 million of capital expenditure investments, \$35 million of debt repayment and \$30 million of share repurchases; and
- Share price appreciation of 37%, significantly outperforming our peer average and the broader markets.

2019 SAFETY RESULTS

Safety is our number one and most important value at Aegion. As proof that ZERO INCIDENTS ARE POSSIBLE, our Underground Solutions business finished 2019 without a single safety incident, marking the first time in several years that an entire business unit completed the year without any injuries or automotive accidents. Across the rest of the business, 21 of our offices worked incident-free, and 61 completed the year without an OSHA recordable.

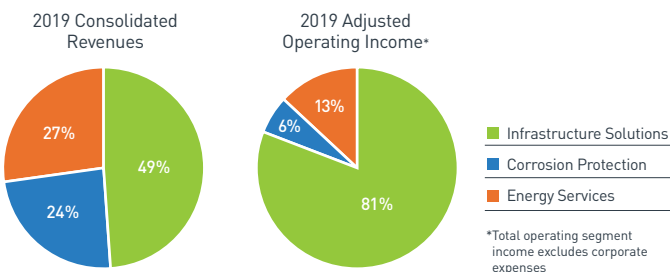
Despite a strong record overall, our total Recordable and Lost Time Incident Rates, the most commonly used industry metrics, ticked up slightly due to challenges in isolated pockets of the business. These results serve as an important reminder that safety is a continuous journey with no end, and we are focused on further improving our performance in 2020.

2019 FINANCIAL RESULTS

Aegion delivered \$1.21 in adjusted earnings per share in 2019, a modest increase over the prior year, despite a decline in consolidated revenues. When excluding the impact of exited or to-be exited businesses, which represented approximately \$70 million, revenues declined 5%, primarily due to the expected reduction in large coating project contributions from Corrosion Protection. The top-line decline drove a \$19 million reduction in adjusted gross profit, though we improved adjusted gross margins by 40 basis points due to significant productivity gains in our Insituform business. We were able to deliver adjusted operating income largely in line with the prior year by offsetting substantially all of the gross profit decline with an \$18 million, or 9%, reduction in adjusted operating expenses through our restructuring actions and cost containment efforts. Our improved project execution and overhead cost controls led to a 40 basis point increase in adjusted operating margins.

Through our earnings performance and a strong focus on improving working capital, we generated full-year operating cash flows of \$79 million, which nearly doubled the prior year's results. Our capital allocation approach was balanced for the

year, with outflows spent roughly evenly between investments in capital expenditures, debt reduction and share repurchases. We've maintained a strong commitment to returning cash to stockholders and have spent \$190 million over the last seven years to repurchase more than 9.5 million shares.



We ended the year with \$66 million in cash and have been successful in bringing a much larger percentage of our cash balances to the U.S., where they can be used more efficiently to service the working capital needs of the business. We feel good about our cash position and have ample access to liquidity through our credit facility.

INFRASTRUCTURE SOLUTIONS SEGMENT OVERVIEW

Our Infrastructure Solutions segment, which focuses primarily on the rehabilitation of aging wastewater and water pipelines, achieved tremendous profitability improvement in 2019, delivering a 35% increase in adjusted operating income. Adjusted operating margins increased 340 basis points, driven by significant improvements in crew productivity and strong operating cost control, particularly within our Insituform business. Total segment revenues were on par with the prior year, when excluding exited or to-be-exited businesses. Growth in global Insituform revenues, excluding the exit of our international contracting activities, was bolstered by a 25% increase in third-party product sales. Offsetting

We've maintained a strong commitment to returning cash to stockholders and have spent \$190 million over the last seven years to repurchase more than 9.5 million shares.

this increase, volumes in our Underground Solutions Fusible PVC® pipe business declined from record results achieved in the prior year.

Our Insituform business continues to be the flagship brand for Aegion and represented the lion's share of our 2019 earnings. Operational excellence in this business is paramount for our success, and our teams delivered in 2019. We are focused on maintaining our leading position in the North America wastewater market and expanding our presence on the potable water side of the market. The development and commercialization of new product offerings that position Insituform to be a full solution pipeline rehabilitation provider in an ever changing market are integral to the success of this strategy.

In 2019, our R&D efforts focused on several key initiatives, including:

- Broadening our cured-in-place pipe (CIPP) wastewater offering to include a new ultraviolet-cured felt liner;
- Improving the quality of our standard CIPP liner for use in pressure pipe applications; and
- Finalizing development of state-of-the-art robots that will be used to install a leak-free seal on lateral connections in potable water pipe rehabilitation projects.

We are focused on commercializing these technologies through market education and a solutions-selling approach to gain market acceptance.

Our global Fyfe and Underground Solutions businesses also delivered positive results. These businesses are a strong complement to serving the water markets as well as offering broader structural strengthening solutions in other market applications through technically differentiated product offerings. We are focused on finding opportunities to scale these smaller, more niche businesses through increased revenues and improved operating leverage to further expand their earnings contribution to Aegion.

Stephanie Cuskley,
Chairwoman of the Board

Chuck Gordon,
President and CEO



In early 2019, we announced plans to exit certain international contracting markets. We've completed the sale or exit of most of these businesses. We expect the final divestiture of our Environmental Techniques business in Northern Ireland to be completed in the first half of 2020. Despite our contracting exits, we continue to have a strong manufacturing presence in Europe and are focused on growing third-party product sales to serve international market demand with a lower-risk and higher-margin operating model.

Our market outlook for the segment is very strong, underpinned by the critical need to replace aging water and wastewater infrastructure and a growing preference for trenchless rehabilitation solutions, which can be less costly, significantly less disruptive and more environmentally friendly than traditional dig-and-replace methods. We are well positioned to serve this growing demand both domestically and abroad with our extensive portfolio of trenchless solutions, which now includes 13 lining technologies for use in our contracting businesses or distribution through global product sales.

CORROSION PROTECTION SEGMENT OVERVIEW

Our Corrosion Protection segment, which focuses on pipeline protection, rehabilitation and maintenance primarily in the midstream oil & gas market, delivered \$5 million in adjusted operating income in 2019. Results declined meaningfully from the prior year, as expected, driven primarily by the 2018 completion of several larger coating projects that delivered significant revenue and margin contribution.

Strong performance from our United Pipelines Systems' industrial linings business was a highlight for the segment. We made progress on our plan to gain product acceptance among large Middle East national oil companies and commissioned a new rotolining facility in Saudi Arabia with our joint venture partner to offer a more comprehensive linings solution. We are well positioned to capture significant opportunities as the Middle East expands onshore and offshore production in the coming years. Results were also up sharply in the U.S., and we successfully completed a rehabilitation project with a large midstream operator, which we hope will lead to additional opportunities for more maintenance-focused work.

Our Coating Services business delivered positive results for the year, despite the lack of large project contributions that benefited results in 2018. We advanced efforts to develop a laser weld profiling tool that analyzes, predicts and improves weld coatability and reliability industrywide. The funnel for this business is strong going into 2020, aided by the robust Middle East development pipeline.

Our Corpro business continued to struggle in 2019. While we made a number of changes throughout the year that yielded benefits, results fell significantly short of expectations. We made the difficult decision in the fourth quarter to address unprofitable portions of the business challenged by a high fixed cost structure and persistently low utilization by downsizing our U.S. operations, closing three branch offices and exiting capital intensive drilling activities at another four branch offices. These actions allow us to refocus on leveraging the core strengths on which Corpro was founded more than 35 years ago, including being a leading provider of excellent engineering, technical services and material sales to our customers. Our new digital data collection and analysis tool also further differentiates us from our competitors by providing critical real-time monitoring and assessment of external corrosion threats to help guide decision making for our customers as part of their asset integrity management programs.

We substantially completed the exit of select international businesses in 2019, including cathodic protection activities in the Middle East and industrial linings activities in South Africa, Brazil, Argentina and Mexico.

We believe oil & gas fundamentals are supportive for growth in the markets we are targeting, which primarily include maintenance of existing infrastructure in the midstream oil & gas market in North America and more upstream-focused demand in the Middle East. We expect significant earnings growth from the segment in 2020, driven by improved profitability from our Corpro business as well as higher contributions from our industrial linings and coatings businesses driven by a strong backlog of international projects.

Our focus on rehabilitation and maintenance activities lessens our dependence on new construction and reduces our risk in cyclical markets. We are focused on maintaining and expanding our leading positions in the North American markets, with selective exposure to international markets.

ENERGY SERVICES SEGMENT OVERVIEW

Our Energy Services segment, which focuses primarily on providing maintenance, turnaround and construction services for refineries on the U.S. West Coast, delivered its third consecutive year of double-digit adjusted earnings growth, despite a slight reduction in total revenues. Revenues from maintenance services, which account for more than 70% of segment revenues, increased 12% to reach a record high. Offsetting this strength, construction revenues declined due to a more selective bidding strategy on smaller capital project opportunities, and turnaround service activities, as expected, dipped following strong 2018 results. Earnings improvement was driven by solid operational execution and a strong focus on optimizing the overhead structure, which drove a 60 basis point improvement in adjusted operating margins.

We opened an office in Salt Lake City in August 2019 as part of our plan to expand into the Rocky Mountain region. Our efforts quickly paid dividends, and we signed a new long-term maintenance agreement in January 2020 with a major refinery operator in the area. Additionally,

we've had success in growing our specialty service offerings, including a recently awarded contract to provide exclusive safety services at two California refineries. We plan to leverage our successful expansion of maintenance services in new geographies to further grow our turnaround and other specialty service offerings.

LOOKING AHEAD: RECHARGED

I believe we are at an inflection point in our business. We've substantially completed a process that began five years ago to position our operations in markets with favorable scale and earnings profiles and reduce our footprint in markets where growth opportunities were limited, uneven or better served by a different business model.

I'm excited about our market positioning today. Aegion serves the aging pipeline infrastructure markets, where the demand for maintenance and rehabilitation greatly exceeds available funding and resources, providing a long-term growth trajectory for our products. Growing awareness of health, safety and environmental

NEW BOARD CHAIR SHARES EXCITEMENT ABOUT AEGION'S FUTURE



Stephanie A. Cuskley was appointed chair of the Aegion Board of Directors in April 2019, succeeding Alfred L. Woods, who retired after 22 years of leadership at Aegion.

Stephanie has served as an Aegion board member since 2005, most recently as the chair of the Compensation Committee and a member of the Audit Committee. Her familiarity with the Company, however, dates back to 1985, when the investment banking firm she worked for called upon her to develop financial models of then-Insituform licensees.

Her more than 30 years of management, investment and leadership experience since includes work in both the corporate and nonprofit sectors. She is currently CEO of The Leona M. and Harry B. Helmsley Charitable Trust, one of the nation's largest foundations.

"I have never been more excited about the company's future than I am today.

Aegion has not only a number of market-leading positions, but also new technology and data initiatives we are using to expand those positions. Just as importantly, we have top talent at every level, including both corporate and platform management.

Both are as solid as I've seen in my years here.

The board has also never been stronger, with both meaningful industry and functional expertise.

Aegion protects communities and the environment through the rehabilitation and maintenance of critical infrastructure. I couldn't be more proud of what we do."

We are transitioning into a new phase of growth for the organization, focused on profitable expansion in our core markets.

issues further reinforces the need for environmentally sustainable solutions, which we are well positioned to provide.

Our heavy focus on rehabilitation and maintenance activities, which accounted for approximately 85% of our 2019 revenues, lessens our dependence on new construction activity and reduces our risk in cyclical markets. Geographically, more than 85% of our 2019 revenues were generated in North America, and we expect this number to increase in 2020. We are focused on maintaining and expanding our leading positions in the North American markets, with selective exposure to international markets primarily served by global third-party product sales or our corrosion protection offerings in the Middle East.

We are transitioning into a new phase of growth for the organization, focused on profitable expansion in our core markets. Our success will depend on our ability to protect our market-leading positions and margins while growing share through innovation and new product offerings.

Aegion has several key strengths that differentiate us from our peers and will enable our progress moving forward:

TECHNOLOGY & INNOVATION – Our R&D investments have doubled historical levels in recent years, and 2019 spend was 15% higher than the prior year, resulting in several new technologies ready for commercialization. Our new UV-cured felt CIPP, robotic technology for pressure pipe lateral reinstatement, asset integrity data collection and analytics tool and laser weld profiling tool, to name a few, will help drive our growth and cement our position as a market leader over the next several years.

MARKET COVERAGE – We have leading market positions in each of our segments, including nearly 50 years of experience as the pioneer in the trenchless CIPP wastewater rehabilitation market. We serve customers in all 50 states, in more than 90 countries and on six continents. As we deploy new technologies, we are well-positioned to leverage our channels to market for faster penetration and product acceptance.

VERTICAL INTEGRATION – Our global manufacturing footprint sets us apart from our competition and allows us to enjoy stronger margins than traditional installation contractors.

STRONG FREE CASH FLOWS – We've maintained a strong track record of cash flow generation, enabling us to invest for growth while also returning cash to stockholders. With the \$59 million in cash we spent over the last five years on restructuring behind us, we can redirect those cash flows toward activities that will generate improved returns for Aegion's stockholders.

Looking to 2020, we are targeting revenue growth driven by market expansion, new product launches and international project opportunities. This top-line strength, combined with ongoing cost discipline and continued profitability improvements, is expected to lead to significant earnings growth compared to 2019.

Our people remain our greatest asset, and we have strong talent in place at all levels of our organization with the skills, experience and values to move our company forward. Looking ahead, we will continue to seek ways to develop and retain our almost 5,000 employees. That includes creating a culture that embraces diversity and inclusion and makes us more intentional about recruitment, talent development and employee retention.

We enter 2020 streamlined, focused and RECHARGED to capitalize on the opportunities before us and deliver strong long-term value creation for you, our stockholders.

Thank you for your continued support of Aegion.



Charles R. Gordon
President and Chief Executive Officer

Water & Wastewater

Municipal

RECHARGED to Deliver Environmentally Sustainable Solutions

MARKET SPOTLIGHT

Municipal water and wastewater is Aegion's single largest market, with demand served primarily from our Infrastructure Solutions segment. We are one of the world's only vertically integrated providers of the CIPP technologies used to rehabilitate aging municipal pipelines, from R&D and manufacturing through installation. We also provide Fusible PVC® pipe and fiber-reinforced polymer linings for pipelines and other infrastructure.



(From left):

Esmeralda Herrejon,
Environmental Specialist

Ralph Western,
Chief Operating Officer,
Infrastructure Solutions

Laura Riley,
Senior Accountant

Katie Cason,
Senior Vice President,
Strategy and Communications

INNOVATION

A better way to cure CIPP

Our engineers developed a new kind of felt tube that can be cured using ultraviolet (UV) light. This cost-effective and environmentally friendly solution was successfully field tested in Florida, New York, Maine and Ohio in 2019 and rolled out around the country by year's end. To further expand and speed market acceptance, we are now educating municipalities on the technology and making it available to other rehabilitation contractors through third-party sales. We anticipate that our UV-cured felt tubes will drive substantial incremental revenue and market share growth in the municipal market over the coming years.

Faster, more reliable service connection reinstatement

A new robotic reinstatement technology now being commercialized by Aegion can maneuver through pipelines with diameters as small as eight inches to plug and restore water service to eight residences at once. With 14 cameras focused on each connection, it completes the job with no water loss or infiltration. Older robotic approaches, by comparison, reinstate water lines one at a time and, like traditional dig-and-replace methods, they can inadvertently trigger long-term water loss due to imprecise drilling.

Our robotic technology currently is commercialized for 8- and 10-inch diameter pipes, with development now underway for 6- and 12-inch diameter pipelines.

STRATEGIC FOCUS

Infrastructure Solutions provides market-leading pipe rehabilitation technologies to municipalities throughout North America and, through third-party sales, to select markets around the world. Insituform pioneered trenchless CIPP solutions in the early 1970s and strives to maintain the North American market leader position it has held for the past five decades through continued innovation.

MARKET TAILWINDS

The need for repair of aging and deteriorating water and wastewater pipeline infrastructure globally is critical. In the U.S. alone, the average age of water and wastewater pipelines is 45 years. It is estimated that water loss at U.S. utilities averages 15% annually, with some municipalities losing more than half of all water pumped and treated for distribution to customers. Approximately \$230 billion in pipeline infrastructure spending is anticipated over the next decade, and with installation costs including labor and paving making up a significant percentage of overall capex, municipalities will continue to look for trenchless solutions in lieu of more expensive and socially and environmentally disruptive dig-and-replace alternatives.



Ralph Western
Chief Operating Officer,
Infrastructure Solutions

"I'm excited about our new technologies.

While 2019 was a strong year for our segment, our biggest win was the addition of our UV cure felt and robotic technologies, both of which address critical customer needs and are now undergoing full-scale commercialization. These new arrows in our quiver further separate us from our competitors in the municipal market. They offer value to customers that our competitors don't provide."

30,000

The number of miles of pipeline rehabilitated using Insituform's trenchless CIPP solutions since 1971 — equivalent to a full lap around the globe

\$230B*

Forecasted investment over the next decade on U.S. water and wastewater infrastructure, with the largest share anticipated to be spent on trenchless solutions

13

The number of water and wastewater pipeline trenchless lining technologies now offered by Aegion, providing unmatched market coverage



Oil & Gas

Midstream Market

STREAMLINED for Success

MARKET SPOTLIGHT

Aegion's presence in the global oil & gas markets is primarily focused on maintenance of existing infrastructure for North American midstream oil & gas pipeline operators, with limited exposure to upstream demand in select international markets. We serve these markets primarily through our Corrosion Protection segment, which protects pipelines and the communities they run through from the harmful effects of corrosion.



(from left):

Jeff Schell, Chief Operating Officer, Corrosion Protection

David Morris, Executive Vice President and Chief Financial Officer

Mark Menghini, Senior Vice President and General Counsel

Jennifer Bean, Project Management Director, Key Technology Initiatives

STRATEGIC FOCUS

With primary focus on higher-value engineering and technical services, Aegion's Corrosion Protection segment provides best-in-class cathodic protection systems as well as interior pipe linings and interior and exterior pipe weld coatings to prevent pipeline corrosion.

MARKET TAILWINDS

The robust U.S. pipeline buildout and Middle East development funnel are stimulating strong demand for our oil & gas market products and services. The amount of regulated pipeline in North America – currently 2.6 million miles – is growing due to expanded and more stringent regulation. Approximately three in four of Corpro's customers are regulated pipeline operators with a majority of their spend on maintenance.

EXPANDING THROUGH INNOVATION & NEW OFFERINGS

Leveraging asset integrity technology to address new regulatory requirements

Our Corpro business has designed a new suite of tools to significantly improve the speed, accuracy and analytics associated with cathodic protection system performance. Our new proprietary handheld advanced data collection units offer a faster, more accurate way to collect pipeline data obtained through annual or close interval survey processes. Our digital database and robust analytics capabilities provide critical real-time geospatial data and assessment of external corrosion threats to help guide faster and more targeted decision making for pipeline operators as part of their asset integrity management programs.

Rotolining facility in Middle East offers a more comprehensive linings solution

In 2019, United Pipeline Systems commissioned a new rotolining plant in Saudi Arabia with our Omani JV partner. The plant is the first of its kind in Saudi Arabia and has the largest capacity in the Middle East. We are now able to apply seamless, bonded internal linings to manifolds, valves and other parts, providing more comprehensive protection for pipelines that carry highly corrosive fluids.

Picture-perfect welds

Pipeline welds may provide effective joint connections but may not be good hosts for the coatings later added to protect against corrosion, leading to costly rework or coating failures. We are developing a laser profiling tool to eliminate failures and improve reliability. Our Coatings Services business is creating a way to analyze and predict weld coatability. The expected result will be objective standards for measuring weld coatability, leading to improved coatings and increased pipeline integrity.



Jeff Schell
Chief Operating Officer,
Corrosion Protection

"I'm excited about the opportunity ahead.

Our market-leading coatings and linings technologies, combined with our strong brand recognition and product acceptance, position us well to expand our reach in North America and the Middle East. I'm also excited about Corpro's differentiated digital data collection and analysis tool and the ability it gives us to help our customers comply with new midstream and upstream pipeline regulations."

46,000

The number of miles of cathodic protection survey data loaded into our asset integrity digital collection and analysis tool

~20,000

Internal field joints coated in the Middle East in 2019 using our advanced coating technology

75

Percentage of Corpro's North America customer base that operates regulated pipelines, supporting a solid stream of recurring revenues



Oil Refineries

United States West Coast
FOCUSED for Growth

MARKET SPOTLIGHT

Through our Energy Services segment, we provide maintenance, turnaround, construction and safety services at a majority of major oil refineries on the U.S. West Coast.



(from left):

Arash Dowlatshahi,
Director of Project Services

Rick St. Laurent,
President, Energy Services

Antonella Musumeci,
Payroll Clerk

SIGNIFICANT CUSTOMER SAVINGS

A key differentiator in our maintenance services offering is the use of internally developed performance management tools: the DelayTrak® and TimeTrak™ systems. These systems enable analysis of utilization trends at client sites and drive productivity improvements, saving our clients money. We've been able to leverage the success of these tools to build deep relationships and expand our services with long-term customers. Case in point: We started with a maintenance agreement at one major California customer site more than 15 years ago. We immediately implemented our performance management tools, and our recommendations helped the client improve productivity by more than 20%. We've expanded our maintenance services with this client to four additional locations and have driven more than \$10 million in productivity savings for the customer over the life of the contracts.

GEOGRAPHIC EXPANSION

Rocky Mountain Expansion

Late in 2019, our new Rocky Mountain office won a three-year contract to provide a variety of embedded services, including daily on-site maintenance, small capital projects and turnaround support as the primary on-site maintenance services contractor for a major refinery in Salt Lake City. Building on existing refinery relationships in California and Washington, our Energy Services business also completed construction and turnaround assignments in Hawaii, Alaska and New Mexico.

STRATEGIC FOCUS

We are seeking to grow our turnaround, construction and safety services business in the West Coast refineries where we already serve as the lead outsourced maintenance contractor, while also expanding our geographic scope to the Rocky Mountains and other locations with blue-chip refineries that can benefit from our services.

MARKET TAILWINDS

The average age of U.S. West Coast refineries is greater than 80 years with current capacity operating consistently at utilization rates above 90%, contributing to strong demand for maintenance, turnaround and construction services to keep plants operating safely and efficiently. Additionally, high regulatory standards and environmental mandates drive strict compliance criteria and investment for refinery maintenance, which in turn supports recurring revenue streams. Our union operation has differentiated itself by successfully navigating California's strict labor market regulations, which has increased stickiness with our blue-chip customer base.



Rick St. Laurent
President,
Energy Services

"I'm excited about our focus on growth.

To comply with California law, our attention in recent years has been on transitioning to a building trades workforce, while maintaining all our California contracts. We were also able to restructure as a double-breasted company, with groups dedicated to union and nonunion work. With these efforts behind us, we can now focus on opportunities introduced to us by our existing client base, both on the West Coast and in other regions. Entering 2020, our backlog is strong and we are ready to grow."

70%+

Energy Services revenues generated by multiyear maintenance contracts, providing a solid foundation of recurring revenue streams and strong cash conversion for the business

80

Average age in years of refineries on the West Coast

>90%

Utilization rate at refineries, which contributes to sustained increasing need for maintenance, turnaround and construction services



Safety

Our **FIRST** and Highest Priority

In 2019, we unified our safety, training and leading indicator processes globally. Far from a one-size-fits-all approach, we now apply the same safety standards and principles universally, while tailoring safety processes to each business unit's risk profile.

14%

Year-over-year decline in the number of injuries companywide, reaching the lowest number in five years

27%

Drop in hand injuries after safety standard implementation

28%

Decline in soft tissue injuries in 2019

The path to sustainable growth and strong investor returns begins and ends with a safe work environment for our employees, customers and the communities we serve.

AEGION'S LIFESAVING RULES

Our top-tier safety program benefited in 2019 from our four lifesaving rules that apply to every Aegion business operating anywhere in the world:



1. Fall Protection: No work will occur on any surface greater than four feet in height without appropriate guard rails or fall protection equipment.



2. Confined Space: No work can take place in a confined space without first completing a documented atmospheric test and complying with confined space entry permit conditions.



3. Electrical Lockout/Tagout: Workers must employ safe practices when working with electrical power systems.



4. Safe Driving: All occupants of a motor vehicle will wear seat belts at all times and comply with all local driving laws.

ZERO INCIDENTS ARE POSSIBLE

Underground Solutions, which provides Fusible PVC® pipe for water, wastewater and conduit applications, completed 2019 completely incident-free. This marks the first time in several years that an entire business unit completed a full year without a single injury or auto accident.

Meanwhile, our United Pipeline Systems and Aegion Coating Services businesses completed 2019 with just one recordable injury. Both were recordable-injury free in their North American-based facilities, as were our Corrpro businesses in Canada, the United Kingdom and the Middle East. Across Infrastructure Solutions, auto accidents in 2019 declined 31% over the previous year. Globally, our Fyfe business completed the year free of any recordable injuries. Our Insituform business reduced recordable injuries by 48% and total injuries by 17%, compared to a year ago.

We will continue a relentless pursuit for ZERO INCIDENTS of any kind across all businesses.

UNITED STATES SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549
FORM 10-K

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

For the fiscal year ended December 31, 2019

or

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

For the transition period from _____ to _____

Commission File Number: 001-35328

Aegion Corporation

(Exact name of registrant as specified in its charter)

Delaware 45-3117900
(State or other jurisdiction of incorporation or organization) (I.R.S. Employer Identification No.)

17988 Edison Avenue, Chesterfield, Missouri 63005-1195
(Address of principal executive offices) (Zip Code)

Registrant's telephone number, including area code: (636) 530-8000



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 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 every Interactive Data File required to be submitted 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 such files). Yes No

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, 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.

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

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

Title of each Class	Trading Symbol(s)	Name of each Exchange on which Registered
Class A Common Shares, \$.01 par value	AEGN	The Nasdaq Global Select Market

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

State the aggregate market value of the voting and non-voting common equity held by non-affiliates computed by reference to the price at which the common equity was last sold, or the average bid and asked price of such common equity, as of June 28, 2019: \$563,133,402.

There were 30,714,860 shares of Class A common stock, \$.01 par value per share, outstanding at February 21, 2020.

DOCUMENTS INCORPORATED BY REFERENCE

As provided herein, portions of the documents below are incorporated by reference:

Document Part — Form 10-K
Registrant's Proxy Statement for the 2020 Annual Meeting of Stockholders Part III

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Note About Forward-Looking Information

The Private Securities Litigation Reform Act of 1995 provides a “safe harbor” for forward-looking statements. We make forward-looking statements in this Annual Report on Form 10-K for the year ended December 31, 2019 (this “Report”) that represent our beliefs or expectations about future events or financial performance. These forward-looking statements are based on information currently available to us and on management’s beliefs, assumptions, estimates and projections and are not guarantees of future events or results. When used in this report, the words “anticipate,” “estimate,” “believe,” “plan,” “intend,” “may,” “will” and similar expressions are intended to identify forward-looking statements, but are not the exclusive means of identifying such statements. Such statements are subject to known and unknown risks, uncertainties and assumptions, including those referred to in the “Risk Factors” section of this Report. In light of these risks, uncertainties and assumptions, the forward-looking events discussed may not occur. In addition, our actual results may vary materially from those anticipated, estimated, suggested or projected. Except as required by law, we do not assume a duty to update forward-looking statements, whether as a result of new information, future events or otherwise. Investors should, however, review additional disclosures made by us from time to time in our filings with the Securities and Exchange Commission. Please use caution and do not place reliance on forward-looking statements. All forward-looking statements made by us in this Report are qualified by these cautionary statements.

PART I

Item 1. Business

Unless otherwise indicated, the terms “Aegion Corporation,” “Aegion,” “the Company,” “we,” “our” and “us” are used in this Report to refer to Aegion Corporation or one of our consolidated subsidiaries or to all of them taken as a whole. We are incorporated in the State of Delaware. We maintain executive offices at 17988 Edison Avenue, Chesterfield, Missouri 63005. Our telephone number is (636) 530-8000 or toll free at (800) 325-1159. Our website address is www.aegion.com. Our common shares, \$.01 par value, are traded on The Nasdaq Global Select Market under the symbol “AEGN”. Our fiscal year ends on December 31 of each calendar year.

Overview

Aegion combines innovative technologies with market leading expertise to maintain, rehabilitate and strengthen pipelines and other infrastructure around the world. For nearly 50 years, we have played a pioneering role in finding transformational solutions to rehabilitate aging infrastructure, primarily pipelines in the wastewater, water, energy, mining and refining industries. We also maintain the efficient operation of refineries and other industrial facilities and provide innovative solutions for the strengthening and increased longevity of buildings, bridges and other structures. We are committed to keeping infrastructure working better, safer and longer for customers and communities around the world. We believe the depth and breadth of our products and services make us a leading provider for the world’s infrastructure rehabilitation and protection needs.

Our Company premise is to use technology to extend the structural design life and maintain, if not improve, the performance of infrastructure, mostly pipelines and piping systems. We have proved this expertise can be applied in a variety of markets to protect pipelines in oil, gas, nuclear, power, utility, mining, industrial, wastewater and water applications and can be extended to the rehabilitation and maintenance of commercial structures and the provision of professional services in refineries. Many types of infrastructure must be protected from the corrosive and abrasive materials that pass through or near them. Our expertise in non-disruptive corrosion engineering and abrasion protection is wide-ranging. We have a long history of product development and intellectual property management. We manufacture many of the engineered solutions we offer to customers as well as the specialized equipment required to install them. Finally, decades of experience give us an advantage in understanding municipal, utility, energy, mining, industrial and commercial customers. Strong customer relationships and brand recognition allow us to support the expansion of existing and innovative technologies in our core end markets.

We originally incorporated in Delaware in 1980 to act as the exclusive United States licensee of the Insituform® cured-in-place pipe (“CIPP”) process, which Insituform’s founder invented in 1971. The Insituform® CIPP process served as the first trenchless technology for rehabilitating wastewater pipelines and has enabled municipalities and private industry to avoid the extraordinary expense and extreme disruption that can result from conventional dig-and-replace methods. We have maintained our leadership position in the CIPP market from manufacturing to technological innovations and market share for nearly 50 years.

We embarked on a diversification strategy in 2009 to expand not only our geographic reach but also our product and service portfolio into the oil and gas markets. Through a series of strategic initiatives and acquisitions, we built up a broad portfolio of cost-effective solutions for rehabilitating and maintaining aging or deteriorating infrastructure, protecting new infrastructure from corrosion and other threats, and providing integrated professional services in engineering, procurement, construction, maintenance and turnaround services for oil and natural gas companies, primarily in the midstream and downstream markets. Over the last five years, we have taken a number of actions to position our operations in markets with favorable scale and earnings profiles and reduce our footprint in markets where growth opportunities were limited, uneven, or better served by a different business model. Today, our long-term strategy is to preserve our industry leadership in our core markets and grow share through innovation and new product offerings. We are also focused on improving our scale and operating leverage in our smaller, niche technical offerings.

Our Segments

We have three operating segments, which are also our reportable segments: Infrastructure Solutions, Corrosion Protection and Energy Services. Our operating segments correspond to our management organizational structure. Each operating segment has leadership that reports to our chief executive officer, who is also the chief operating decision manager (“CODM”). The operating results and financial information reported by each segment are evaluated separately, regularly reviewed and used by the CODM to evaluate segment performance, allocate resources and determine management incentive compensation. See Note 14 to the consolidated financial statements contained in this Report for further discussion regarding our segments.

Infrastructure Solutions – The majority of our work is performed in the municipal water and wastewater pipeline sector. While the pace of growth is primarily driven by government funding and spending, overall demand is strong due to required improvements to aging pipeline infrastructure in our core markets, which should result in a long-term stable growth opportunity for our market leading products, Insituform® CIPP, the Tyfo® system and Fusible PVC® pipe.

Corrosion Protection – Corrosion Protection is positioned to capture the benefits of continued oil and natural gas pipeline infrastructure developments across North America and internationally, as producers and midstream pipeline companies transport their product from onshore and offshore oil and gas fields to regional demand centers. We provide solutions to customers to enhance the safety, environmental integrity, reliability and compliance of their pipelines in the global transmission and distribution network, especially in the oil and gas markets. The segment has a broad portfolio of technologies, products and services to protect, maintain, rehabilitate, assess and monitor pipelines from the effects of corrosion, including cathodic protection, interior pipe linings, interior and exterior pipe and weld coatings and inspection and repair capabilities, as well as an increasing offering of asset integrity management data storage and analytics capabilities related to these services.

Energy Services – We offer a unique value proposition based on our industry-leading safety and labor productivity programs, which allow us to provide cost-effective long-term maintenance, construction, turnaround and specialty services at customers’ refineries as well as chemical and other industrial facilities. We understand the demands and the level of critical planning required to ensure a successful turnaround or shutdown and offer a full range of services as part of our facility maintenance solutions, while maintaining a reputation for being safe, professional and providing predictable value. We have deep relationships with our customers, which give us insight into their critical needs and expectations.

Our Long-Term Strategy

Aegion primarily serves aging infrastructure markets, where the demand for maintenance and rehabilitation exceeds available funding and resources. That imbalance results in favorable long-term growth trends in our core markets. Our focus on rehabilitation also lessens our dependence on new construction activity, which reduces our risk in cyclical markets. We also see a growing global awareness of health, safety and environmental issues, which further reinforces the need for the environmentally sustainable solutions we provide. We are committed to being a valued partner to our customers, with a constant focus on expanding those relationships by solving complex infrastructure problems, enhancing our capabilities and improving execution while also developing or acquiring innovative technologies and comprehensive services. We are pursuing growth through three key strategic offerings:

Municipal Pipeline Rehabilitation – The fundamental driver in the global municipal pipeline rehabilitation market is the growing gap between the need and current spend. While we do not expect the spending gap to close any time soon, the increasing need for pipeline rehabilitation supports a long-term sustainable market for the technologies and services offered by our Infrastructure Solutions segment. A recent Bluefield research forecast estimates that in the U.S. alone, more than \$230 billion of capital expenditures are forecasted over the next decade to address water and wastewater pipeline infrastructure, where the national average age of water and wastewater pipeline has climbed to 45 years. Rehabilitation of existing pipes is expected to be the fastest growing spend category, and with installation costs including labor and paving making up a significant percentage of overall capex, municipalities will continue to look for trenchless solutions in lieu of more expensive and socially disruptive dig-and-replace alternatives.

We are committed to maintaining our market leadership position in the trenchless rehabilitation of wastewater pipelines in North America using our CIPP technology, the largest contributor to Aegion's consolidated revenues. We have a diverse portfolio of trenchless technologies to rehabilitate aging and damaged municipal pipelines. We are also focused on growing our presence in the rehabilitation of pressure pipelines (i.e., water pipelines). It is estimated that water loss at U.S. utilities averages 15% annually with some municipalities losing more than half of all water pumped and treated for distribution to customers. Our pressure pipe portfolio includes Fusible PVC[®], InsituMain[®] CIPP, Tyfo[®] fiber-reinforce polymer ("FRP") and Tite Liner[®] high-density polyethylene ("HDPE") systems. As part of our pressure pipe strategy, we have continued to invest in the development of a mechanical services reinstatement for pressure pipe lateral connections. We believe this new technology will allow Aegion to become a leading provider in the North American pressure pipe rehabilitation market and are focused on commercializing this offering more broadly to customers in 2020. While the majority of our CIPP liner installations use felt tube cured by steam or hot water, we have been focused in the last couple of years on expanding our capabilities to offer fiberglass reinforced tube and felt tube that uses an ultraviolet (UV) curing process, which gives us a broader offering to meet the ever changing needs of our customer base. We also are continuing to grow our third-party product sales, both domestically and internationally, which allows us to leverage our strong manufacturing footprint in the U.S. and Europe with a lower risk and higher margin operating model in certain geographies as a global technology provider. Our international strategy is to use a blend of third-party product sales as well as FRP contract installation operations in select markets.

Pipeline Integrity and Corrosion Management – Oil and gas fundamentals support a positive outlook in the U.S. market, where production in 2019 set new records. The International Energy Agency projects the U.S. will continue to dominate global growth in oil and natural gas through 2025. As supply has grown, so has the U.S. export market and the EIA projects the U.S. will become a net energy exporter by 2022. For North America midstream operators, this strength in production and demand continues to create new opportunities to expand existing networks, build greenfield pipelines and ensure existing infrastructure is operating as safely and efficiently as possible. Aegion is well positioned to serve this demand with our broad suite of offerings, providing pipeline protection through interior pipe linings, interior and exterior pipe weld coatings and insulation as well as best-in-class cathodic protection systems that inhibit exterior pipeline corrosion.

There are over one million miles of regulated pipelines in North America, which remain the safest and most cost-effective mode of oil and gas transmission. Within our Corrosion Protection segment, the design and installation of cathodic protection systems to help prevent pipeline corrosion have historically represented a large portion of the revenues and profits for the segment. We also provide inspection services to monitor these systems and detect early signs of corrosion. Our asset integrity digital data collection and analysis tool increases the efficiency and accuracy of pipeline corrosion assessment data we collect as well as upgrades how we share this valuable information with customers. We recently commercialized an advanced data collection unit for use in the field that interfaces with our database to significantly reduce the time required to provide surveys to our customers as well as increase the accuracy of the collected data. Through this offering, we seek to improve customer regulatory compliance by providing critical real-time monitoring and assessment of external corrosion threats to help guide decision making for pipeline operators as part of their asset integrity management programs.

The outlook in the Middle East remains strong as well, with a significant buildout of oil and gas capacity planned or under construction over the next several years. Strong product acceptance for our industrial linings and coatings applications, along with our solid track record of operating safely in the region for more than a decade, positions us well to capture growth opportunities arising from this multi-year development pipeline.

Downstream Oil Refining and Industrial Facility Maintenance – We have long-term relationships with oil refinery and industrial customers in the western United States through our Energy Services segment. Our objective is to leverage those relationships to expand the services we provide in mechanical maintenance, electrical and instrumentation services, small capital construction, shutdown and turnaround maintenance activity and specialty services. We also continue to promote our safety and performance improvement services to increase the overall value to customers. Outside of the oil refining industry, we serve oil and gas and oil product terminals as well as industrial gas and chemical facilities. We are in the process of expanding our western United States energy services business to the Rocky Mountain oil refining industry.

Our Products and Services

Today our diverse portfolio of full-service solutions includes:

Rehabilitation of Water and Wastewater Pipelines with CIPP Products – Through our Infrastructure Solutions segment, we offer manufacturing and installation of cost-effective solutions to remediate operational, health, regulatory and environmental problems resulting from aging and defective water and wastewater pipelines. Our Insituform® CIPP product is a trenchless, jointless, seamless pipe-within-a-pipe solution used to rehabilitate pipes in various diameters. Our Insituform® CIPP process provides a more affordable alternative to dig-and-replace methods and is a less disruptive and more environmentally friendly method for pipe repairs. We have maintained our leadership position in the CIPP market through our ISO 9001:2015 certified manufacturing facilities and technological innovations for nearly 50 years. Our Insituform® portfolio of products and services are utilized worldwide.

Fusible Polyvinyl Chloride Products for Rehabilitation and New Installation – Underground Solutions' patented Fusible PVC® pipe is used in the new installation and rehabilitation of pipelines for the water, wastewater, recycled water, industrial, power and conduit markets, primarily in North America. Underground Solutions uniquely complements Aegion's other pressure pipe rehabilitation technologies (InsituMain® CIPP as well as the Tyfo® and Tite Liner® systems) and increases Aegion's presence in the pressure pipe market.

Fiber Reinforced Polymer Systems for Rehabilitation and Strengthening – We use the Tyfo® system to rehabilitate medium- to large-diameter pipelines, providing a unique advantage over conventional rehabilitation methods. The Tyfo® system consists of proprietary and specialized carbon, glass, aramid and hybrid lightweight and low profile woven fabrics combined with the proprietary resin and epoxy polymers, which, in unique combinations, create the tested, proven and certified Tyfo® advanced composite system. The Tyfo® system is specifically engineered, manufactured and installed to solve a host of structural deficiencies or demands in existing structures. Certified Tyfo® system applicators apply the technology to civil structures to withstand seismic and force loads and provide strengthening, repair and restoration of masonry, concrete, steel and wooden infrastructure worldwide. We offer technical support to our customers through a highly-trained structural engineering team that assists in all phases of a potential project, from the initial design to implementation and installation. We believe there is a growing addressable market in North America as well as an increasing acceptance of our products and services internationally, with particular focus in Southeast Asia and Europe.

Cathodic Protection for Corrosion Engineering Control and Infrastructure Rehabilitation – Through our Corrosion Protection segment, we offer cathodic protection solutions, a time-tested pipeline corrosion mitigation technology that is mandated by regulatory rules in many types of pipeline systems. We provide engineering and inspection services through individuals trained and certified by the National Association of Corrosion Engineers International ("NACE"), which is one of the largest independent consulting corrosion engineering organizations in the world. We also provide project management, training, research, testing and design, consultation and installation services to the following markets: pipeline, refinery, above and underground storage tanks, water/wastewater structures, concrete infrastructure and offshore and marine structures. We also offer a full line of superior quality corrosion control and cathodic protection materials, which are NSF/ANSI 61 classified for drinking water system components. More recently, we have enhanced our pipeline inspection services through the internal development of an asset integrity digital data collection and analysis tool, which is designed to increase the efficiency and accuracy of pipeline corrosion assessment data we collect as well as upgrade how we share this valuable information with customers in order to provide critical real-time monitoring and assessment of external corrosion threats to help guide decision making for pipeline operators as part of their asset integrity management programs.

Pipe Coatings for Corrosion and Thermal Control and Prevention – We provide products and services to protect pipes from corrosion primarily for the oil and gas industries. We accomplish this through external and internal pipe coatings utilizing fusion bonded epoxy ("FBE") and field joint coating for corrosion protection of fittings, valves and other primary sources for metal corrosion. Additionally, we provide custom coating services on pipe bends, fittings, fabricated spools, valves and short runs of straight pipe for oil, gas and potable water services, as well as onshore or offshore fabrication and welding services. We also offer a proprietary robotic pipe coating and inspection technology for internal and external welded pipe field joints.

Thermoplastic Pipe Lining for Corrosion Control, Abrasion Protection and Pipeline Rehabilitation – Our proprietary Tite Liner® installation system provides chemical, corrosion and abrasion resistance for numerous pipeline applications, including in the oil and gas, mining and chemical pipeline markets, and has application in the rehabilitation of pressure pipes in the municipal marketplace. Our system can rehabilitate pipelines for a fraction of the cost and time associated with industrial pipeline replacement. We offer our lining protection products and services worldwide, with a strategic focus on expanding our presence in key end markets with sustainable capital spend on oil, gas and mining activities.

Our cathodic protection capabilities and products for lining and coating pipelines are applicable worldwide in the oil, gas and mining markets, with a focus on North America and the Middle East.

Construction and Maintenance of Oil and Gas Facilities – Through our Energy Services segment, which operates as Aegion Energy Services, we are a leading integrated service provider of maintenance, construction and turnaround activities for the downstream oil and gas markets. Focused on serving large refinery customers in the western United States with recent growth in Hawaii, Utah and the United States Rocky Mountain region, Energy Services offers an industry-leading safety record, a strong reputation for reliability and quality and comprehensive solutions needed for major refinery maintenance, repairs and retrofits. These core competencies position Energy Services to meet the growing demand for non-discretionary operating and maintenance expenditures.

Restructuring Activities

On July 28, 2017, our board of directors approved a comprehensive global realignment and restructuring plan (the “Restructuring”). As part of the Restructuring, we announced plans to: (i) divest our pipe coating and insulation businesses in Louisiana, The Bayou Companies, LLC and Bayou Wasco Insulation, LLC (collectively “Bayou”); (ii) exit all non-pipe related contract applications for the Tyfo® system in North America; (iii) right-size the cathodic protection services operation in Canada and the CIPP businesses in Australia and Denmark; and (iv) reduce corporate and other operating costs.

During 2018 and 2019, our board of directors approved additional actions with respect to the Restructuring, which included the decisions to: (i) divest the Australia and Denmark CIPP businesses; (ii) take actions to further optimize operations within North America, including measures to reduce consolidated operating costs; and (iii) divest or otherwise exit multiple additional international businesses, including: (a) our cathodic protection installation activities in the Middle East, including Corppower International Limited, our cathodic protection materials manufacturing and production joint venture in Saudi Arabia; (b) United Pipeline de Mexico S.A. de C.V., our Tite Liner® joint venture in Mexico (“United Mexico”); (c) our Tite Liner® businesses in Brazil and Argentina; (d) Aegion South Africa Proprietary Limited, our Tite Liner® and CIPP joint venture in the Republic of South Africa; and (e) our CIPP contract installation operations in England, the Netherlands, Spain and Northern Ireland.

We completed the divestitures of Bayou and the Denmark CIPP business in 2018. We also completed the divestitures of the Netherlands CIPP business and Tite Liner® joint venture in Mexico in 2019, as well as the shutdown of activities for the CIPP business in England. We completed the divestitures of CIPP operations in Australia and Spain in early 2020. Remaining divestiture and shutdown activities include the sale of the Northern Ireland contracting operation and minor final dissolution activities in South America and South Africa, all of which is expected to be completed in the first half of 2020. Additionally, the exit of our cathodic protection installation activities in the Middle East is substantially complete, though we expect minimal wind-down activities will extend through the second quarter of 2020 related to a small number of projects remaining in backlog.

As part of efforts to optimize the cathodic protection operations in North America, management initiated plans during the fourth quarter of 2019 to further downsize operations in the U.S., including the closure of three branch offices and the exit of capital intensive drilling activities at four branch offices. These actions included a reduction of approximately 20% of the cathodic protection domestic workforce and an exit of drilling activities that contributed approximately 20% to our cathodic protection domestic revenues in 2019. We expect these actions to improve our cathodic protection cost structure in the U.S., eliminate unprofitable results in certain parts of the business and reduce consolidated annual expenses for the business overall. Also during the fourth quarter of 2019, we reduced corporate headcount and took other actions to reduce corporate costs.

See Notes 1 and 4 to the consolidated financial statements contained in this Report for a detailed discussion regarding strategic initiatives and restructuring efforts.

Available Information

Our website is www.aegion.com. We make available on this website (under “Investors” and then under “SEC Filings”), free of charge, our proxy statements used in conjunction with stockholder meetings, annual reports on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K and Section 16 beneficial ownership reports (as well as any amendments to those reports) as soon as reasonably practicable after we electronically file such material with, or furnish it to, the Securities and Exchange Commission. In addition, our Code of Ethics for our Chief Executive Officer, Chief Financial Officer and senior financial employees, our Code of Conduct applicable to all of our officers, directors and employees, our Corporate Governance Guidelines and our Board committee charters are available, free of charge, on our website (under “Investors” and then under “Corporate Governance”). In addition, paper copies of these documents will be furnished to any stockholder, upon request, free of charge.

Technologies

Infrastructure Solutions

Our Insituform® CIPP process (including Insitupipe® and Insitutube®) for the rehabilitation of wastewater pipelines and other conduits utilizes a custom-manufactured tube, or liner, made of synthetic fiber. After the tube is saturated (impregnated) with a thermosetting resin mixture, it is installed in the host pipe by various processes. The resin is then cured, by heat (hot water or steam) or ultraviolet light, forming a new rigid pipe within a pipe.

Our iPlus® Infusion® pull-in CIPP is a trenchless method for the rehabilitation of small-diameter wastewater pipelines, whereby a felt liner is continuously impregnated with liquid, thermosetting resin through a proprietary process, after which the liner is pulled into the host pipe, inflated with air and cured with steam or ultraviolet light.

Our iPlus® Composite CIPP is used for the trenchless rehabilitation of large-diameter wastewater pipelines, where the felt liner is reinforced with carbon or glass fiber, impregnated with liquid, thermosetting resin, inverted into place and cured with hot water or steam.

Our InsituMain® CIPP system is a solution for pressure pipes, including water mains and force mains up to 96-inches in diameter. The system can negotiate bends and is pressure-rated up to 150 psi. The InsituMain® system has also been certified as complying with NSF/ANSI Standard 61.

Our Insituform® RPP™ process is a trenchless technology used for the rehabilitation of wastewater force mains and industrial pressure pipelines. The felt tube is reinforced with glass and impregnated with liquid, thermosetting resin, after which it is inverted with water and cured with hot water to form a structural, jointless pipe within the host pipe.

Our Insituform® PPL® process is a trenchless technology certified to NSF/ANSI Standard 61 used for the rehabilitation of drinking water and industrial pressure pipelines. A glass-reinforced liner is impregnated with an epoxy or vinyl ester resin, inverted with water and cured with hot water to form a jointless pipe lining within the host pipe.

Our Thermopipe™ system is a non-disruptive pressure pipe rehabilitation system ideal for potable and non-potable water mains whereby a high tenacity polyester reinforced liner is winched into a host pipe from a reel and inflated with air, forming a close-fit, jointless, leak-free lining system able to independently carry the full system design pressure.

Our iPlus® Glass UV system is a CIPP solution for small- to medium-diameter pipes utilizing a glass fiber tube that is impregnated with a resin sensitive to ultraviolet light. The tube is pulled into place in the host pipe, inflated by air and cured via an ultraviolet light source.

Our iPlus® Felt UV system is a CIPP solution for small- to medium-diameter pipes utilizing a 100% felt tube that is impregnated with a resin sensitive to ultraviolet light. The tube is pulled into place in the host pipe, inflated by air and cured via an ultraviolet light source.

Sliplining is a method used to push or pull a new pipeline into an old one. With segmented sliplining, short segments of pipe are joined to form the new pipe. For gravity wastewater rehabilitation, these short segments can often be joined in a manhole or access structure, eliminating the need for a large pulling pit.

Our iTap® is an internal service line reinstatement process that includes associated fittings, robotics and control systems for leak free connections in CIPP lined potable water mains.

Our Fusible PVC[®] technology contains proprietary polyvinyl chloride (“PVC”) formulation that, when combined with its patented fusion process, results in a monolithic, fully-restrained, gasket-free, leak-free piping system. Fusible PVC[®] pipe products include Fusible C-900[®] and FPVC[®] pipes. Fusible C-900[®] pipes comply with the AWWA C900 standard and are certified to the NSF/ANSI Standard 61.

Our Tyfo[®] system applies high-strength fiber fabric to strengthen structures, including pipelines, and the connections between structural components, thereby strengthening, repairing and restoring masonry, concrete, steel and wooden structures. Beyond general strengthening of pipelines and structures, the Tyfo[®] system also has application in blast mitigation and seismic reinforcement.

See “Patents and Proprietary Technologies” below for more information concerning certain of these technologies.

Corrosion Protection

Our Tite Liner[®] system is a method of lining new and existing pipe with a corrosion and abrasion resistant thermoplastic pipe.

Our Safetyliner[™] product is a grooved thermoplastic liner that is installed in an industrial pipeline using the Tite Liner[®] process. The Safetyliner[™] liner is normally used in natural gas or CO₂ pipelines to allow the release of gas that permeates the thermoplastic liner. If gas is allowed to build in the annular space under normal operating conditions, the line can be susceptible to collapse upon sudden changes in operating pressures. The Safetyliner[™] liner also has been used in pipelines as a leak detection system and for dual containment in mine water pipelines.

Our rotational lining process bonds a uniform, seamless polymer layer to the interior of virtually any metallic structure, regardless of shape and complexity. This result is achieved by placing granular resin inside the structure to be lined and all openings are covered. The structure is then heated while simultaneously being rotated about two axis. The resin melts and flows evening over the entire inner surface of the structure, bonding to the metal substrate. Once cooled, the result is a monolithic corrosion and chemical resistant lining that conforms to complex shapes and is virtually free of stresses.

Our fusion bonded epoxy pipeline coating utilizes heat to melt a dry powder FBE coating material into liquid form. The liquid material flows onto the steel pipe and solidifies through a process called cross-linking. Once cooled, this “fusion-bonded” epoxy cannot return to its original state and forms a corrosion protection barrier on the interior or exterior surface of the pipe.

Our 3-layer polyethylene coating is an external coating for buried or submerged oil or gas pipelines and offers superior adhesion, cathodic disbondment resistance and mechanical protection.

Our deepwater coating and insulation capabilities answer the challenge of subsea wet insulation requirements for high-pressure and high-temperature environments. Applications include subsea equipment and field joints for coating the girth welds where the pipe coating has been cutback to allow for welding joints of pipe.

Our internal field joint coating technology consists of self-contained robots that travel inside the pipe, find the weld and then blast clean, vacuum and coat the area. Utilizing various cameras, these field joint coating robots transmit a real-time video image back to the operator which is then used for control and inspection. The technology allows for the field application of FBE and plural component liquid materials to the weld area.

Cathodic protection is an electrochemical process that prevents corrosion of new structures and stops corrosion on existing structures. Metal loss is prevented by the passing of a very small direct current from a cathodic protection electrode (anode), through the electrolyte (soil, water, concrete, etc.) on to the structure to be protected (cathode). In this process, the anode corrodes, sacrificing itself to protect the integrity of the cathode. Structures commonly protected by this process include oil and gas pipelines, offshore platforms, above and underground storage tanks, ships, electric power plants, bridges, parking garages, transit systems and water and wastewater facilities.

Our CorrFlex[®] system is a linear anode system installed parallel to pipelines, oftentimes to prevent stress corrosion cracking that can lead to ruptures on high pressure gas transmission pipelines.

Our CorrSpray[®] product provides a unique solution for preventing corrosion of steel reinforcements in concrete structures.

Our Corrporwer[®] DC power supplies include innovative designs, plus remote monitoring and control capabilities.

Our Green Rectifier[®] system is an ecologically friendly method of cathodic protection using solar panels and a wind generator to power the cathodic protection process.

Our Grid™ system has set the global standard for preventing releases from external corrosion of at-grade storage tanks containing oil and petroleum products, thereby ensuring safe operations and protection of the environment.

Our AC interference mitigation solution protects pipeline operators and the public from electrical hazards when pipelines share space on rights-of-way with overhead electric transmission lines. Beginning with advanced predictive modeling, we then design mitigation schemes and provide systems to protect people and the pipeline.

Our asset integrity management (AIM) platform allows for the collection, communication and storage of data in the cloud using a geospatial information system-based, centralized, integrated repository that provides us and our customers more timely information and improved data analytics. Data collection applications include LiveLine™ and CISView™, data delivery applications include AssetView® and FieldLine®, and data analytical tools include ScanLine® and ChargeLine®.

Our Correlator™ data collection system electronically records corrosion protection data on our customer's assets, transmits and stores the data in our AIM platform for compliance reporting and advanced analytics.

See "Patents and Proprietary Technologies" below for more information concerning certain of these technologies.

Energy Services

Our DelayTrak® system identifies delays in real time. The data is used to identify and quickly communicate improvement opportunities and, later, action plans for improvement.

Our TimeTrak™ system tracks how time is spent by crews on a jobsite. The data is used to drive process improvements in routine maintenance.

Operations

We are organized into three operating segments, which are also our reportable segments: Infrastructure Solutions, Corrosion Protection and Energy Services. Each segment is regularly reviewed and evaluated separately.

Our operations are generally project oriented. Projects may range in duration from just a few days to several years and can be performed as one-time contracts or as part of longer-term agreements. These contracts are usually obtained through competitive bidding or negotiations and require performance at a fixed price or time and materials basis. Our Corrosion Protection and Energy Services projects are generally performed under contracts with industrial entities. A majority of our water and wastewater rehabilitation installation projects in our Infrastructure Solutions segment are performed under contracts with municipal entities. Independent contractors may be utilized to perform portions of the work on any given project that we provide.

Infrastructure Solutions Operations

Our water and wastewater pipeline rehabilitation activities are conducted principally through installation and other construction operations performed directly by our subsidiaries.

Our North American Infrastructure Solutions operations, including research and development, engineering, training and financial support systems, are headquartered in St. Louis, Missouri. Tube manufacturing and processing facilities for North America are maintained in ten locations, geographically dispersed throughout the United States and Canada to support our North American contracting operations and through which we sell liners to third parties, domestically and internationally. We utilize multifunctional robotic devices internally developed in connection with the inspection and repair of pipelines.

We also maintain a manufacturing facility in Wellingborough, United Kingdom and one wetout facility in continental Europe to support our third-party product sales of liners internationally.

We have granted licenses to our trenchless rehabilitation processes to unaffiliated companies in certain geographic regions. As described under "Ownership Interests in Operating Licensees and Joint Ventures" below, we have also entered into contractual joint ventures from time to time to capitalize on our trenchless rehabilitation processes. Under these contractual joint venture relationships, work is bid by the joint venture entity and subcontracted to the joint venture partners or to third parties. The joint venture partners are primarily responsible for their subcontracted work, but both joint venture partners are liable to the customer for all of the work. Revenues and associated costs are recorded using percentage-of-completion accounting for our subcontracted portion of the total contract only.

In addition to wastewater pipeline rehabilitation, we have performed water pipeline rehabilitation operations since 2006 using our pressure pipe product portfolio. We are now able to restore water pipes using our InsituMain® CIPP and the Tite Liner® and Tyfo® systems.

Our acquisition in February 2016 of Underground Solutions, headquartered in Poway, California, bolstered our capabilities with respect to water pipeline rehabilitation operations. We are now able to provide additional infrastructure technologies for water, wastewater and conduit applications, primarily Fusible PVC[®] pipe, which, when combined with its patented fusion process, results in a monolithic, fully-restrained, gasket-free, leak-free piping system.

Our infrastructure rehabilitation operations also utilize FRP to rehabilitate and strengthen pipelines throughout the United States through Fibwrap Construction Services, headquartered in San Diego, California. We further design and manufacture FRP composite systems used for rehabilitating buildings, bridges, tunnels, industrial developments and waterfront structures, which we supply to certified applicators. We service the Asia-Pacific FRP market, with respect to both product and engineering services as well as application services, through our wholly-owned subsidiaries in Singapore, Malaysia, Hong Kong and New Zealand and through our joint ventures in Borneo and Indonesia. Finally, we have granted licenses to our proprietary FRP products and processes to unaffiliated companies in certain additional geographic regions, as described under “Licensees” and “Ownership Interests in Operating Licensees and Joint Ventures” below.

Corrosion Protection Operations

Our corrosion protection operations perform maintenance, rehabilitation and corrosion protection services for oil and gas, industrial and mineral piping systems and structures. We also offer products for gas release and leak detection systems. Our worldwide corrosion protection operations are conducted through our various subsidiaries (Corrpro based in Houston, Texas; United Pipeline Systems based in Durango, Colorado; and Aegion Coating Services, LLC (“ACS”) based in Tulsa, Oklahoma and Conroe, Texas). Certain of our corrosion protection operations outside of the United States are conducted through our wholly-owned subsidiaries in the United Kingdom, Chile, Canada, Saudi Arabia and through our joint venture in Oman.

Our Corrpro business performs fully-integrated corrosion prevention services including: (i) engineering and design; (ii) product and material sales; (iii) construction and installation; (iv) inspection, surveying, monitoring, data collection and maintenance; and (v) coatings. United Pipeline Systems performs pipeline rehabilitation and protection services using our proprietary Tite Liner[®] process. Our ACS business specializes in the application of internal corrosion coatings services, provision of external field joint anti-corrosion coating services and the supply of equipment, all for pipeline construction projects onshore and offshore in locations around the world.

Energy Services Operations

Aegion Energy Services is based in Irvine, California and performs construction, maintenance and turnaround services, primarily for the downstream oil and gas industry. Aegion Energy Services’ operations are located primarily in California, Washington and Utah. We specialize in offering clients a flexible, single source for all project needs. Clients may choose a single service or multiple integrated services, from technical consulting to turnkey project delivery, ongoing maintenance, small cap construction, turnaround and safety services. We provide project management professionals across various disciplines, including civil, structural, mechanical, electrical, instrumentation, project controls, estimating, procurement and safety. AllSafe Services, Inc., a wholly-owned subsidiary of Aegion Energy Services, provides safety field services.

Sweeping refinery industry changes occurred in California in recent years as a result of the implementation of California Health and Safety Code section 25536.7 (the “California Refinery Safety Law”). The California Refinery Safety Law introduced new requirements for refineries and outside contractors at certain facilities in California covered by the law. Over the past few years, Aegion Energy Services has successfully transitioned all of its clients’ refinery operations covered by the California Refinery Safety Law to building trade union employees, as required by its clients in order to comply with the California Refinery Safety Law.

Licensees

We have granted licenses for the Insituform[®] CIPP process covering exclusive and non-exclusive territories to non-affiliated licensees that provide pipe repair and rehabilitation services throughout their respective licensed territories. The licenses generally grant to the licensee the right to utilize our know-how and patent rights (where such rights exist) relating to the subject process, and to use our copyrights and trademarks. These licenses have varying durations and some of these licenses allow the licensee to renew the license at the end of the term.

Our CIPP licensees generally are obligated to pay a royalty at a specified rate. Any improvements or modifications a licensee may make in the subject process during the term of the license agreement generally becomes our property or is licensed to us. Should a licensee fail to meet its royalty obligations or other material obligations, we may terminate the license at our discretion. Licensees, upon prior notice to us, may generally terminate the license for certain specified reasons. We may vary the terms of agreements entered into with new licensees according to prevailing conditions. Income from royalties are immaterial to our overall consolidated revenues.

Our Fyfe joint ventures in Borneo and Indonesia provide design, product and engineering support to applicators of FRP systems in Asia-Pacific. Our joint ventures in Asia-Pacific are granted the non-exclusive right to use Fyfe products in their respective territories. Fyfe Co. also periodically licenses its patented technology to both affiliated and third-party certified applicators.

With regard to our Underground Solutions business, we have granted licenses to our Fusible PVC[®] pipe products and fusion processes internationally covering exclusive and non-exclusive territories to non-affiliated licensees that provide Fusible PVC[®] products and services. The licenses generally grant to the licensee, in exchange for royalties at a specified rate, the right to utilize our know-how and patent rights (where such rights exist) relating to the subject products and processes, and to use our copyrights and trademarks. Underground Solutions also licenses domestically its patented technology to third-party extruders and installers.

Ownership Interests in Operating Licensees and Joint Ventures

We hold controlling interests in Fyfe/Fibrwrap joint ventures in Borneo and Indonesia. Through our wholly-owned subsidiary, Fyfe Asia Pte. Ltd., we hold (i) a fifty-one percent (51%) equity interest in Fyfe Borneo Sdn Bhd., with the other forty-nine percent (49%) equity interest held by C. Tech Sdn Bhd; and (ii) a fifty-five percent (55%) equity interest in PT Fyfe Fibrwrap Indonesia, with the other forty-five percent (45%) equity interest held by PT Graha Citra Anugerah Lestari.

Through our subsidiary, Corrpro Canada, Inc., we hold a seventy percent (70%) equity interest in Corppower International Limited (“Corppower”) based in Saudi Arabia, through which we provide corrosion prevention products and services to government and private sector clients throughout the Kingdom of Saudi Arabia. The other thirty percent (30%) equity interest is held by Saudi Trading & Research Co., Ltd., based in Al-Khobar, Saudi Arabia. As discussed in “Restructuring Activities” above, we are currently in the process of exiting this joint venture as part of our restructuring initiative.

Through our subsidiary, Insituform Technologies Netherlands B.V., we hold a fifty-one percent (51%) equity interest in United Special Technical Services LLC located in Oman for the purpose of executing pipeline, piping and flow line thermoplastic lining services throughout the Middle East and Northern Africa. The other forty-nine percent (49%) equity interest is held by Special Technical Services LLC, an Omani company.

We have previously entered into teaming and other cooperative arrangements in various geographic regions throughout the world in order to develop cooperative bids on contracts for our thermoplastic pipeline rehabilitation and cathodic protection businesses. Typically, the arrangements provide for each participant to complete its respective scope of work, and we are not required to complete the other participant’s scope of work. We continue to investigate opportunities for expanding our business through such arrangements.

We previously entered into contractual joint ventures in other geographic regions in order to develop joint bids on contracts for our wastewater pipeline rehabilitation business. Typically, the joint venture entity holds the contract with the owner and subcontracts portions of the work to the joint venture partners. As part of the subcontracts, the partners usually provide bonds to the joint venture. We could be required to complete our joint venture partner’s portion of the contract if the partner were unable to complete its portion and a bond is not available. We continue to investigate opportunities for expanding our business through such arrangements.

Product Development

We seek out and develop innovative solutions for pipelines and other infrastructure through a stage-gate process for management of our research and development initiatives, whereby a market and business impact evaluation is conducted at each gate review. Corporate and business unit resources make up the specific research and development teams, supplemented, where beneficial, by our technology partners (often major suppliers), outside consultants and academic institutions. During the years ended December 31, 2019, 2018 and 2017, we spent \$6.4 million, \$5.6 million and \$4.2 million, respectively, on research and development related activities, including engineering.

Customers and Marketing

We offer our products and services to highly diverse markets worldwide. We service municipal, state and federal governments, as well as corporate customers in numerous industries including pipelines, energy, oil and gas, refinery, mining, general and industrial construction, infrastructure (buildings, bridges, tunnels, railways, etc.), water and wastewater, transportation, utilities, maritime and defense. Our products and services are currently utilized and performed in over 90 countries across six continents.

We offer our corrosion protection solutions worldwide to energy, refinery, mining and other customers to protect new and existing pipelines and other structures. The marketing of wastewater pipeline rehabilitation technologies is focused primarily on the municipal wastewater markets worldwide. We offer our water rehabilitation products to municipal and commercial customers. We offer our other infrastructure rehabilitation products worldwide to certain certified third-party installers and applicators and market our engineering, manufacturing and, in some countries, installation services to municipal, state, federal and commercial customers. We offer our Energy Services solutions primarily to the oil and gas markets on the West Coast, but have been actively pursuing opportunities beyond the West Coast. No customer accounted for more than 10% of our consolidated revenues during the years ended December 31, 2019 or 2018. During the year ended December 31, 2017, we had one customer that accounted for approximately 12.1% of our consolidated revenues primarily due to a large deepwater pipe coating and insulation project that was substantially completed during the year.

To help shape decision-making at every step, we use a highly-trained, multi-level sales force structured around target markets and key accounts, focusing on engineers, contractors, consultants, administrators, technical staff and public officials. Due to the technical nature of our products and services, many of our sales personnel have engineering or technical expertise and experience. We also produce sales literature and presentations, participate in trade shows, present at conferences and execute other marketing programs for our own sales force and those of unaffiliated licensees. Our unaffiliated licensees are responsible for marketing and sales activities in their respective territories. See “Licensees” and “Ownership Interests in Operating Licensees and Joint Ventures” above for a description of our licensing operations and for a description of investments in licensees.

Contract Backlog

Contract backlog is our expectation of revenues to be generated from received, signed and uncompleted contracts, the cancellation of which is not anticipated at the time of reporting. We assume that these signed contracts are funded. For government or municipal contracts, our customers generally obtain funding through local budgets or pre-approved bond financing. We generally do not undertake a process to verify funding status of these contracts and, therefore, cannot reasonably estimate what portion, if any, of our contracts in backlog have not been funded. However, we have little history of signed contracts being canceled due to the lack of funding. Contract backlog excludes any term contract amounts for which there are not specific and determinable work releases and projects where we have been advised that we are the low bidder, but have not formally been awarded the contract.

In accordance with industry practice, substantially all of our contracts are subject to cancellation, termination or suspension at the discretion of the customer. Contracts in our backlog are subject to changes in scope and of services to be provided as well as adjustments to the costs relating to the contracts. Accordingly, backlog is not necessarily indicative of our future revenues or earnings.

Included within backlog for Energy Services are amounts that represent expected revenues to be realized under long-term Master Service Agreements (“MSAs”) and other signed contracts. If the remaining term of these arrangements exceeds 12 months, the unrecognized revenues attributable to such arrangements included in backlog are limited to only the next 12 months of expected revenues. Although backlog represents only those contracts and MSAs that are considered to be firm, there can be no assurance that cancellation or scope adjustments will not occur with respect to such contracts.

Included within backlog for Infrastructure Solutions and Corrosion Protection are certain contracts that are performed through our variable interest entities in which we own a controlling portion of the entity. A substantial majority of our contracts in these two segments are fixed price contracts with individual private businesses and municipal and federal government entities across the world. Energy Services generally enters into cost reimbursable contracts that are based on costs incurred at agreed upon contractual rates.

For additional information regarding our backlog including those risk factors specific to backlog, please refer to “Risk Factors” in Item 1A, and “Management’s Discussion and Analysis of Financial Condition and Results of Operations” in Item 7 below.

Manufacturing and Suppliers

We maintain our North American Insituform® CIPP process liner manufacturing facility in Batesville, Mississippi. In Europe, we manufacture and sell Insituform® CIPP process liners from our plant located in Wellingborough, United Kingdom. Although raw materials used in Insituform® CIPP process products are typically available from multiple sources, our historical practice has been to purchase materials from a limited number of suppliers. We maintain our own felt manufacturing facility in Batesville, Mississippi. Substantially all of our fiber requirements are purchased from four sources, but there are alternate vendors readily available. We source our global resin supply from multiple vendors. We also manufacture certain equipment used in our Insituform® CIPP business. We believe that the sources of supply for our Insituform® CIPP operations in North America, Europe and Asia-Pacific are adequate for our needs.

We sell Insituform® CIPP process liners, equipment and related products to third parties and certain licensees on a long-term or, in certain instances, on a project-by-project basis. In Europe, in addition to sales made on a project-by-project basis, we have entered into supply agreements with five third parties to supply them with Insituform® CIPP process liners and related products.

With regard to Underground Solutions, we have a limited number of qualified third-party extruders to manufacture our Fusible PVC® pipe products.

The principal raw materials used by Fyfe Co. in the manufacture of FRP composite materials are carbon, glass, resins, fabric and epoxy raw materials. Fabric and epoxies are the most significant materials purchased, which are currently purchased through a select group of suppliers, although these and the other materials are available from a number of vendors. The weaving of FRP components into woven fabric is done at our facility in La Conner, Washington. Fyfe Co. does specialized blending of unique epoxies from basic chemicals at our Batesville, Mississippi facility. The epoxy resin is also repackaged at our Batesville, Mississippi facility, and specialized blending is also often done on each job site. Fyfe Co. also sells finished materials throughout the United States and worldwide to our affiliates and certain certified third-party applicators.

Product and material revenues for our Corrpro business are derived principally from the sale of products that are purchased from select outside vendors or from assembling components that are sourced from suppliers. We conduct light assembly for a number of our Corrpro® products in our production facilities in Sand Springs, Oklahoma; Edmonton, Alberta, Canada; and the United Kingdom. In addition, we manufacture our own line of rectifiers and other power supplies in Canada and the United Kingdom. The primary products and raw materials used by our Corrpro businesses include zinc, aluminum, magnesium and other metallic anodes, as well as wire and cable. We maintain relationships with multiple vendors for these products and are not dependent on any single vendor to meet our supply needs.

The product and service revenues for our United Pipeline Systems business are derived primarily from the procurement and installation of HDPE liners inside pipelines. The raw material used for these liners is extruded thermoplastic pipe. It has been our practice to purchase this material from a select group of suppliers; however, we believe that it is available from many other sources. We manufacture most of the proprietary equipment and many of the consumable items used in Tite Liner® system installations in our own facilities in Canada, the United States and Chile.

Product and service revenues for our ACS business is derived principally from internal and external pipeline coating. Facilities are located in Tulsa, Oklahoma, Conroe, Texas and Saudi Arabia. The primary raw materials used in the coating process include FBE and paint. Although our historical practice has been to purchase materials from a limited number of suppliers, we believe that the raw materials used in the coating process are typically available from multiple sources. However, in certain limited circumstances, our customer has required use of a specific material available from only a single source.

Our pricing of raw materials is subject to fluctuations in the underlying commodity prices. See “Commodity Risk” in Item 7A of this Report for detail on our management of the risks associated with such price fluctuations.

Patents and Proprietary Technologies

We have obtained and are pursuing patent protection in our principal global markets covering various aspects of our proprietary technology. Activity as of December 31, 2019 consisted of the following:

Process, System or Product	United States		Foreign	
	Number of Patents Held	Number of Patents Pending	Number of Patents Held	Number of Patents Pending
Insituform® CIPP	32	9	81	19 ⁽¹⁾
Fusible PVC®	14	–	13	–
Tyfo®	12	–	10	4
Tite Liner®	3	–	7	4
Cathodic Protection Operations	2	3	–	3
Coatings Operations	6	2	7	1
Total	69	14	118	31

⁽¹⁾ Includes one Patent Cooperation Treaty application that covers most jurisdictions throughout the world and one European Patent Convention application that covers multiple jurisdictions in Europe.

The specifications and/or rights granted in relation to each patent will vary from jurisdiction to jurisdiction. In addition, as a result of differences in the nature of the work performed and in the climate of the countries in which the work is carried out, we do not necessarily seek patent protection for all of our inventions in every jurisdiction in which we do business.

There can be no assurance that the validity of our patents will not be successfully challenged. Our business could be adversely affected by increased competition upon expiration of the patents or if one or more of our patents were adjudicated to be invalid or inadequate in scope to protect our operations. We believe in either case that our long experience with the proprietary processes, the strength of our trademarks and our degree of market penetration should enable us to continue to compete effectively in the pipeline rehabilitation, corrosion protection, energy, mining and infrastructure protection markets.

In some instances throughout each of our three platforms, we have elected to maintain certain internally developed technologies, know-how and inventions as trade secrets. We have entered into confidentiality agreements with employees, consultants and third parties to whom we disclose such trade secrets. Although there can be no assurance that these measures will suffice to prevent unauthorized disclosure or use or that third parties will not develop similar technologies, we believe it would take substantial time and resources to independently develop such technologies.

See “Risk Factors” in Item 1A of this Report for further discussion.

Competition

The markets in which we operate are highly competitive, primarily on the basis of price, quality of service and capacity to perform. Many of our products and services face direct competition from competitors offering similar or essentially equivalent products or services. In addition, customers can select a variety of methods to meet their infrastructure installation, strengthening and rehabilitation needs, as well as their coating and cathodic protection needs, including a number of methods that we do not offer.

In the trenchless wastewater rehabilitation market, the CIPP process is one of the preferred rehabilitation methods. Because relatively few significant barriers to entry exist in this market, any organization with adequate financial resources and access to technical expertise may become a competitor. As such, there are numerous companies with which we compete. Worldwide, we compete with numerous smaller firms on local or regional levels and with several larger firms on the global and national levels. Despite the number of competitors, Insituform[®], as the worldwide pioneer of this technology, has maintained its role as a global market leader, both in the United States and abroad.

In water rehabilitation, dig-and-replace is still the preferred method for the majority of customers. Because this is a more specialized field, with more barriers to entry, including strict government mandates, we compete primarily with a handful of global and national specialty contractors.

Our Fusible PVC[®] products compete against other more-traditional products in the pressure pipe market, such as HDPE and other restrained joint PVC pipe products.

In our infrastructure rehabilitation business, the FRP process competes against traditional methods of pipeline and structural retrofitting, but is gaining acceptance in the construction and retrofitting industries. With its proprietary technologies relating to both products and application, Fyfe Co. is a leader in the FRP market and Fibrwrap Construction, having successfully performed installations of FRP systems for 25 years, is one of the most experienced applicators of the Tyfo[®] system and has a well-established reputation. In this field, there are barriers to entry, including testing requirements, experience, intellectual property and certifications. Fyfe has teamed with a number of universities around the world to conduct extensive product testing. In addition, Fyfe has dedicated significant resources to obtaining technical market acceptance of its proprietary products. As a result, Fyfe has received a number of certifications, including NSF certification for its Tyfo[®] system; International Code Council - Evaluation Service Report (ESR-2103), indicating product approval by the International Building Code; and compliance with ICC-AC125 guidelines for FRP strengthening. Because of the barriers to entry, Fyfe Co. and Fibrwrap Construction tend to compete with a small number of companies on a regional or national level, most of which do not provide the full spectrum of services provided by Fyfe Co. and Fibrwrap Construction.

In our Corrosion Protection segment, Corpro operates in the highly-competitive field of cathodic protection for corrosion control. While this market is highly competitive, because there are relatively few barriers to entry, Corpro is a recognized market leader in North America in this field. Competitors include a limited number of large firms, which provide services nationally and, in some instances, globally, although more prevalent are a number of small- and medium-sized firms with more limited portfolios of products and services, which are only provided on a regional or local level. Corpro's competitive advantage is its broad depth of high-quality cathodic protection offerings, including its cost-effective engineering, pipeline integrity, construction and coating services, which are provided to customers worldwide. We believe the advanced data collection and analytics capabilities associated with our asset integrity management program present a barrier to entry for smaller competitors.

The process of utilizing thermoplastic liners is a prevalent method used to protect pipelines servicing the energy and mining industries. United Pipeline Systems is recognized as a leader in the thermoplastic liner market, having provided lining solutions on six continents. Due to barriers to entry arising from necessary technological capabilities, United Pipeline Systems mainly competes with a small number of specialty firms globally, nationally and regionally. Through our focused efforts on expanding our services worldwide, United Pipeline Systems enjoys significant name recognition and substantial market share in this industry in the key energy and mining regions of the world.

ACS has a strong presence in the field of FBE coating and is an industry leader in both inner diameter robotic coatings and outer diameter coatings. Because of these specialized fields, ACS usually competes with a small number of specialty providers.

Aegion Energy Services operates in a fragmented and intensely competitive field of plant maintenance and construction and specialty services in the downstream oil refining industry, as well as performing work in the industrial and natural gas, gas processing and compression markets. Competitors may be local, regional or national contractors and service providers and vary with the markets that are served, with few competitors competing in all of the geographic markets we serve or offering all of the services we provide. With the implementation of the California Refinery Safety Law, competition at refineries in California is from building trade union contractors or, in some instances, from customers themselves expanding their own workforces to reduce reliance on contractors. Contracts are generally awarded based on safety performance, reputation for quality, price, schedule and client satisfaction. However, with the new California Refinery Safety Law in place, the trade unions have increasing influence in the California labor market and on union contractors. Issues around labor relations and access to supplemental labor are new factors affecting client decisions in selecting contractors.

There can be no assurance as to the success of our processes in competition with our competitors and alternative technologies for pipe installation and rehabilitation, coating, cathodic protection and infrastructure installation, strengthening and rehabilitation.

Seasonality

Our operations can be affected by seasonal variations and our results tend to be stronger in the second and third quarters of each year due to typically milder weather in the regions in which we operate. We are more likely to be impacted by weather extremes, such as excessive rain, hurricanes or monsoons, snow and ice or frigid temperatures, which may cause temporary, short-term anomalies in our operational performance in certain localized geographic regions. However, these impacts usually have not been material to our operations as a whole. See “Risk Factors” in Item 1A of this Report for further discussion.

Employees

As of December 31, 2019, we had approximately 4,900 employees. Certain of our subsidiaries are parties to collective bargaining agreements that covered an aggregate of approximately 1,400 employees as of December 31, 2019. We generally consider our relations with our employees and unions to be good.

Insurance and Bonding

We are required to carry insurance and provide bonding in connection with certain projects and, accordingly, maintain comprehensive insurance policies, including workers’ compensation, general and automobile liability and property coverage. We believe that we presently maintain adequate insurance coverage for all operations. We have also arranged bonding capacity for bid, performance and payment bonds. Typically, the cost of a performance bond is less than 1% of the contract value. We are required to indemnify the surety companies against losses from third-party claims of customers and subcontractors. The indemnification obligations are collateralized by unperfected liens on our assets and the assets of those subsidiaries that are parties to the applicable indemnification agreement.

Government Regulation

We are required to comply with all applicable United States federal, state and local, and all applicable foreign statutes, regulations and ordinances. In addition, our installation and other operations have to comply with various relevant occupational safety and health regulations, transportation regulations, code specifications, permit and licensing requirements and bonding and insurance requirements, as well as with fire regulations relating to the storage, handling and transporting of flammable materials. Our manufacturing and coatings facilities, as well as our installation and other operations, are subject to federal and state environmental protection regulations, none of which presently have any material effect on our capital expenditures, earnings or competitive position in connection with our present business. However, although our installation and other operations have established monitoring programs and safety procedures, further restrictions could be imposed on the manner in which installation and other activities are conducted, on equipment used in installation and other activities, on volatile organic compounds and hazardous air pollutant emissions from our paintings and coatings processes and on the use of solvents or the thermosetting resins used in the Insituform[®] CIPP process.

The use of both thermoplastics and thermosetting resin materials in contact with drinking water is strictly regulated in most countries. In the United States, a consortium led by NSF International, under arrangements with the United States Environmental Protection Agency (“EPA”), establishes minimum requirements for the control of potential human health effects from substances added indirectly to water via contact with treatment, storage, transmission and distribution system components, by defining the maximum permissible concentration of materials that may be leached from such components into drinking water, and methods for testing them. Our lining and coating products for drinking water use are NSF/ANSI Standard 61 compliant, including the entire Tyfo[®] system, the full range of Insituform[®] water pipe lining products and our Fusible C-900[®] and Fusible C-905[®] products. In addition, our Tite Liner[®] HDPE system is certified to NSF/ANSI Standard 61. Corpro’s corrosion control products are NSF/ANSI Standard 61 classified for drinking water systems and its cathodic protection solutions for water storage tanks and water treatment units are compliant with AWWA Standard D104 and NACE recommended practices. NSF assumes no liability for use of any products, and NSF’s arrangements with the EPA do not constitute the EPA’s endorsement of NSF, NSF’s policies or its standards. Dedicated equipment is needed in connection with use of these products in drinking water applications.

Item 1A. Risk Factors.

You should carefully consider the following risks and other information contained or incorporated by reference into this Report when evaluating our business and financial condition and an investment in our common stock. Should any of the following risks or uncertainties develop into actual events, such developments could have material adverse effects on our business, financial condition, cash flows and results of operations.

Our businesses face significant competition in the industries in which they operate.

Many of our products and services face direct competition from companies offering similar products or services. Competition can place downward pressure on our contract prices and profit margins. Intense competition is expected to continue in these markets. If we are unable to realize our objectives, we could lose market share to our competitors and experience an overall reduction in our profits.

In the water and wastewater rehabilitation portion of our Infrastructure Solutions segment, we face competition from companies providing similar products and services as well as companies providing other methods of rehabilitation that we do not offer, including traditional dig-and-replace, which is still the preferred method in the water rehabilitation market. In the trenchless wastewater rehabilitation market, CIPP is one of the preferred methods. In this market, few significant barriers to entry exist and, as a result, any organization that has the financial resources and access to technical expertise and bonding may become a competitor. As such, we compete with many smaller firms on a local or regional level and with several larger firms on the global and national levels. In water rehabilitation, where there are more significant barriers to entry because the market is strictly regulated, we compete with a smaller number of specialty contractors around the world. Further, our Fusible PVC[®] pipe products compete against other more traditional products, such as HDPE and restrained joint PVC pipe products.

In the infrastructure rehabilitation portion of our Infrastructure Solutions segment, the Tyfo[®] system competes against traditional methods of structural retrofitting. There are significant barriers to entry, including testing requirements, experience, intellectual property and certifications. In manufacturing, we only compete with a handful of FRP suppliers. However, with respect to installation, we compete with a number of FRP applicators. Our ability to grow revenues in this market could be adversely impacted if any of our competitors were to become fully-integrated like us or if new entrants in the market were to develop strong installation and manufacturing expertise.

In our Corrosion Protection platform, we compete primarily with specialty firms in the pipeline protection industry and both a limited number of large firms globally and a large number of smaller firms regionally in the cathodic protection industry. In addition, customers can select a variety of methods to meet their pipe installation, rehabilitation, coating and cathodic protection needs, including methods that we do not offer.

In our Energy Services platform, we compete with a limited number of local, regional and national companies in the oil and gas procurement, construction, maintenance and turnaround industries on the U.S. West Coast.

Our business depends upon the maintenance of our proprietary technologies and information.

We depend on our proprietary technologies and information, many of which are no longer subject to patent protection. In addition to patent protection, we rely significantly upon trade secret laws to protect our proprietary technologies. We regularly enter into confidentiality agreements with our key employees, customers, potential customers and other third parties and limit access to and distribution of our trade secrets and other proprietary information. However, these measures may not be adequate to prevent misappropriation of our technologies or to assure that our competitors will not independently develop technologies that are substantially equivalent or superior to our technologies. In addition, the laws of other countries in which we operate may not protect our proprietary rights to the same extent as the laws of the United States. We are also subject to the risk of adverse claims and litigation alleging infringement of intellectual property rights.

Our efforts to develop new products and services or enhance existing products and services involve substantial research, development and marketing expenses, and the resulting new or enhanced products or services may not generate sufficient revenues to justify such expenses.

Our future success will depend in part on our ability to anticipate and respond to changing technologies and customer requirements by enhancing our existing products and services. We will need to develop and introduce, on a timely and cost-effective basis, new products, features and services that address the needs of our customer base. As a result of these efforts, we may be required to expend substantial research, development and marketing resources, and the time and expense required to develop a new product or service or enhance an existing product or service are difficult to predict. We cannot assure that we will succeed in developing, introducing and marketing new products or services or product or service enhancements. In addition, we cannot be certain that any new or enhanced product or service will generate sufficient revenues to justify the expenses and resources devoted to this product development and enhancement effort.

Acquisitions and investments could result in operating difficulties, dilution and other harmful consequences that may adversely impact our business and results of operations.

Acquisitions are an element of our overall corporate strategy and use of capital, and these transactions could be material to our financial condition and results of operations. We expect to continue to evaluate and enter into discussions regarding a wide array of potential strategic transactions. The process of integrating an acquired company, business or technology has created, and will continue to create, unforeseen operating difficulties and expenditures. The areas where we face risks include:

- Diversion of management time and focus from operating our business to acquisition integration challenges.
- Failure to successfully operate and further develop the acquired business or technology.
- Implementation or remediation of controls, procedures and policies at the acquired company.
- Integration of the acquired company's accounting, human resource and other administrative systems, and coordination of product, engineering and sales and marketing functions.
- Transition of operations, users and customers onto our existing platforms.
- Failure to obtain required approvals or consents on a timely basis, if at all, including from governmental authorities or contractual counter-parties, or conditions placed upon approval or consent, including under competition and antitrust laws, which could, among other things, delay or prevent us from completing a transaction, or otherwise restrict our ability to realize the expected financial or strategic goals of an acquisition.
- In the case of foreign acquisitions, the need to integrate operations across different cultures and languages and to address the particular economic, currency, political and regulatory risks associated with specific countries.
- Cultural challenges associated with integrating employees from the acquired company into our organization, and retention of key employees from the businesses we acquire.
- Liability for activities of the acquired company before the acquisition, including patent and trademark infringement claims, violations of laws, commercial disputes, tax liabilities and other known and unknown liabilities.
- Assumption of contracts with terms, including, without limitation, terms relating to payment terms, warranty, liability, damages and indemnification, that are not consistent with our normal contracting practices.
- Litigation or other claims in connection with the acquired company, including claims from terminated employees, customers, former stockholders or other third parties.

Our failure to address these risks or other problems encountered in connection with our past or future acquisitions and investments could cause us to fail to realize the anticipated benefits of such acquisitions or investments, incur unanticipated costs or liabilities, and harm our business generally.

Our acquisitions could also result in dilutive issuances of our equity securities, the incurrence of debt, the assumption of contingent liabilities, amortization expenses, impairment of goodwill and purchased long-lived assets and restructuring charges, any of which could harm our financial condition or results of operations. Also, the anticipated benefit of many of our acquisitions may not materialize for reasons separate and apart from the specific risks set forth above.

We may be liable to complete the work of our joint venture partners under our joint venture arrangements.

We enter into contractual joint ventures in order to develop joint bids on certain contracts. The success of these joint ventures depends largely on the satisfactory performance by our joint venture partners of their obligations with respect to the joint venture. Under these joint venture arrangements, we may be required to complete our joint venture partner's portion of the contract if the joint venture partner is unable to complete its portion and a bond is not available. In such case, the additional obligations could result in reduced profits or, in some cases, significant losses for us.

Our backlog is an uncertain indicator of our future earnings.

Our backlog, which at December 31, 2019 was \$658.2 million, is subject to unexpected adjustments and cancellation. The revenues projected in this backlog may not be realized or, if realized, may not result in profits. We may be unable to complete some projects included in our backlog in the estimated time and, as a result, such projects could remain in backlog for extended periods of time. Further, our customers often have the contractual right to terminate our contract or reduce our scope of our work at the convenience of the customer. To the extent that we experience project or contract cancellation or scope adjustments, we could face a reduction in the dollar amount of our backlog and the revenues that we actually receive from such backlog. In addition, one or more of our large or multi-year contracts have in the past and may in the future contribute a material portion of our backlog in any one year. The loss of business from any one of these significant customers could have a material adverse effect on our business or results of operations. See the section above captioned "Contract Backlog" for additional information on our backlog.

The preparation of our consolidated financial statements requires us to make estimates and judgments, which are subject to an inherent degree of uncertainty and which may differ from actual results.

Our consolidated financial statements are prepared in accordance with accounting principles generally accepted in the United States, which require us to make estimates and judgments that affect the reported amounts of assets, liabilities, revenues and expenses and related disclosure of contingent assets and liabilities. Some accounting policies require the application of significant judgment by management in selecting the appropriate assumptions for calculating financial estimates. By their nature, these estimates and judgments are subject to an inherent degree of uncertainty and actual results may differ from these estimates and judgments under different assumptions or conditions, which may have an adverse effect on our financial condition or results of operations in subsequent periods.

Our use of input measures to recognize revenue on construction, engineering and installation services could result in a reduction or reversal of previously recorded results.

Revenues from construction, engineering and installation services are recognized over time using an input measure to measure progress toward satisfying performance obligations. This methodology recognizes revenues and profits over the life of a project based on costs incurred to date compared to total estimated project costs. Revisions to revenues and profits are made once amounts are known and can be reasonably estimated. Given the uncertainties associated with some of our contracts, it is possible for actual costs to vary from estimates previously made. Revisions to estimates could result in the reversal of revenues and gross profit previously recognized. For the year ended December 31, 2019, approximately 61% of our revenues were derived from accounting utilizing estimated input measures.

We may experience cost overruns on our projects.

We conduct a significant portion of our business under guaranteed maximum price or fixed price contracts, where we bear a significant portion of the risk for cost overruns. Under such contracts, prices are established in part on cost and scheduling estimates, which are based on a number of assumptions, including assumptions about future economic conditions, prices and availability of materials and other exigencies. Our profitability depends heavily on our ability to make accurate estimates. Inaccurate estimates, or changes in other circumstances, such as unanticipated technical problems, difficulties obtaining permits or approvals, changes in local laws or labor conditions, weather delays, cost of raw materials, trade disputes and tariffs, currency fluctuations or our suppliers' or subcontractors' inability to perform could result in substantial losses, as such changes adversely affect the revenues and gross profit recognized on each project.

Our recognition of revenues from change orders, extra work or variations in the scope of work could be subject to reversal in future periods.

We recognize revenues from change orders, extra work or variations in the scope of work as set forth in our written contracts with our clients when management believes that realization of these revenues is probable and the recoverable amounts can be reasonably estimated. We also factor in all other information that we possess with respect to the change order to determine whether the change order should be recognized at all and, if recognition is appropriate, what dollar amount of the change order should be recognized. Due to factors that we may not anticipate at the time of recognition, however, revenues ultimately received on these change orders could be less than revenues that we recognized in a prior reporting period or periods, which could require us in subsequent reporting periods to reduce or reverse revenues and gross profit previously recognized.

We may incur significant costs in providing services in excess of original project scope without having an approved change order.

After commencement of a contract, we may perform, without the benefit of an approved change order from the customer, additional services requested by the customer that were not contemplated in our contract price for various reasons, including customer changes, incomplete or inaccurate engineering, changes in project specifications and other similar information provided to us by the customer. Our construction contracts generally require the customer to compensate us for additional work or expenses incurred under these circumstances.

A failure to obtain adequate compensation for these matters could require us to record in the current period an adjustment to revenues and profit recognized in prior periods under the percentage-of-completion accounting method. Any such adjustments, if substantial, could have a material adverse effect on our results of operations and financial condition, particularly for the period in which such adjustments are made. We can provide no assurance that we will be successful in obtaining, through negotiation, arbitration, litigation or otherwise, approved change orders in an amount adequate to compensate us for our additional work or expenses.

Cyclical downturns in the mining, oil and natural gas industries, including a substantial or extended decline in the price of mined minerals, oil or natural gas, or in the oil field, refinery and mining services businesses, may have a material adverse effect on our financial condition or results of operations.

The mining, oil and natural gas industries are highly cyclical. Demand for the majority of the oil field, refinery and mining products and services provided by our Corrosion Protection and Energy Services platforms are substantially dependent on the level of expenditures by the mining, oil and natural gas industries for the exploration, development and production of mined minerals, crude oil and natural gas reserves, which are sensitive to the prices of these commodities and generally dependent on the industry's view of future mined mineral, oil and natural gas prices. The prices of these commodities can be volatile. There are numerous factors affecting the related industries and, thereby, the supply of, and demand for, our products and services, which include, but are not limited to:

- market prices of mined minerals, oil and natural gas and expectations about future prices;
- cost of producing mined minerals, oil and natural gas;
- the level of mining, drilling and production activity;
- the discovery rate of new oil and gas reserves;
- mergers, consolidations and downsizing among our clients;
- coordination by various oil-producing countries, including the Organization of Petroleum Exporting Countries (OPEC);
- the output and willingness to export of certain oil-producing countries;
- the impact of commodity prices on the expenditure levels of our clients;
- financial condition of our client base and their ability to fund capital and maintenance expenditures;
- political instability in oil-producing countries;
- tax incentives, including for alternative energy sources;
- domestic and worldwide economic conditions;
- adverse weather conditions, including those that can affect mining, oil or natural gas operations over a wide area;
- availability of energy sources other than oil and gas;
- level of consumption of minerals, oil, natural gas and petrochemicals by consumers, including the effects of increased regulation, conservation measures and technological advances affecting energy consumption; and
- availability of services and materials for our clients to grow their capital expenditures.

As seen in the historic high volatility in crude oil prices and other energy commodities, prices for mined minerals, oil and natural gas are subject to periodic downturns and large fluctuations in response to relatively minor changes in supply and demand, market uncertainty and a variety of other factors (including those set forth above) that are beyond our control, and we expect such prices to continue to be volatile. Demand for the products and services we provide could decrease in the event of a sustained reduction in demand for mined minerals, oil or natural gas, while perceptions of long-term decline in the prices of mined materials, oil and natural gas by mining, oil and gas companies (some of our customers) can similarly reduce or defer major expenditures given the long-term nature of many large-scale projects or result in downward pressure on the prices we charge. As such, a significant downturn in the mining, oil and/or natural gas industries could result in a reduction in demand for our mining, oil field and refinery services and could adversely affect our operating results. Additionally, the volatility of such prices and the resulting effects are difficult to predict, which reduces our ability to anticipate and respond effectively to changing conditions.

Our operations could be adversely impacted by the California Refinery Safety Law related to downstream work performed in California refineries.

Aegion Energy Services continues to face challenges from the impact of the California Refinery Safety Law, which went into effect on January 1, 2014. The law introduced new requirements for refineries and outside contractors at covered facilities when construction, alteration, demolition, installation, repair or maintenance work is performed at the covered facility. The law imposes the following requirements:

- all subject workers must be paid the applicable prevailing wage rate;
- all subject workers must be either “skilled journeymen” or “registered apprentices”; and
- at least 60% of skilled journeypersons on the project must be graduates of certified apprenticeship programs.

The effect of the California Refinery Safety Law is to require the use of building trade union contractors or refinery owners or operators to perform the covered work.

These requirements only pertain to contracts entered into, extended or renewed after January 1, 2014. Contracts entered into, extended or renewed prior to that date generally expired in 2018 across the industry. Aegion Energy Services has historically had long-term contracts in place with many of its major downstream clients, which it intends to maintain through its building trade union entity. Throughout 2018, Aegion Energy Services was able to transition its contracts with all of its California refinery clients to its building trade union entity in order to satisfy the conditions of the California Refinery Safety Law. However, as a result of this drastic change in the market in California, customers are looking at ways to reduce costs. For example, many clients are reevaluating their contracting strategies and have reduced, or may in the future reduce, the size of their contractor maintenance crews by increasing their own in-house maintenance capabilities. There are no assurances that clients will maintain their contracts, or the historical annual volume of work, with Aegion Energy Services as the industry adapts to operating under the California Refinery Safety Law, which could materially and adversely impact its revenues.

Federal and state legislative and regulatory initiatives as well as governmental reviews relating to hydraulic fracturing could result in increased costs and additional operating restrictions or delays that could adversely affect our Corrosion Protection customers.

Federal, state and local legislative and regulatory initiatives relating to hydraulic fracturing could result in increased costs and additional operating restrictions or delays in the production of oil and natural gas, including from the developing shale plays. Our Corrosion Protection segment services oil and gas companies in the shale plays and we foresee strong market opportunities here. A decline in drilling of new wells and related servicing activities caused by these initiatives could have an adverse effect on our business, financial position or results of operations.

We may be subject to liabilities under environmental laws and regulations.

Our services are subject to numerous U.S. and international environmental protection laws and regulations that are complex and stringent. For example, we must comply with a number of U.S. federal government laws that strictly regulate the handling, removal, treatment, transportation, and disposal of toxic and hazardous substances. Under the Comprehensive Environmental Response Compensation and Liability Act of 1980, as amended (“CERCLA”), and comparable state laws, we may be required to investigate and remediate regulated hazardous materials. CERCLA and comparable state laws typically impose strict, joint and several liabilities without regard to whether a company knew of or caused the release of hazardous substances. The liability for the entire cost of clean-up could be imposed upon any responsible party. Other principal U.S. federal environmental, health, and safety laws affecting us include, but are not limited to, the Resource Conservation and Recovery Act, National Environmental Policy Act, the Clean Air Act, the Occupational Safety and Health Act, the Federal Mine Safety and Health Act of 1977, the Toxic Substances Control Act, and the Superfund Amendments and Reauthorization Act. Our business operations may also be subject to similar state and international laws relating to environmental protection. Further, past business practices at companies that we have acquired may also expose us to future unknown environmental liabilities. Liabilities related to environmental contamination or human exposure to hazardous substances, or a failure to comply with applicable regulations, could result in substantial costs to us, including clean-up costs, fines, civil or criminal sanctions, and third-party claims for property damage or personal injury or cessation of remediation activities. Our continuing work in the areas governed by these laws and regulations exposes us to the risk of substantial liability.

The effects of the Tax Cuts and Jobs Act on our business are still not fully known and could have an adverse effect on our business and financial condition.

Public Law No. 115-97, commonly referred to as the Tax Cuts and Jobs Act (the “TCJA”), was signed into law on December 22, 2017. The TCJA contains significant changes to corporate taxation, including reducing the corporate tax rate from 35% to 21%, limiting the tax deduction for interest expense to 30% of earnings (except for certain small businesses), limiting the deduction for net operating losses to 80% of current year taxable income and eliminating net operating loss carrybacks, one-time taxing of offshore earnings at reduced rates regardless of whether they are repatriated, eliminating U.S. tax on foreign earnings (subject to certain important exceptions), immediately deducting certain new investments instead of deducting depreciation expense over time, and modifying or repealing many business deductions and credits. We anticipate additional guidance, both at the federal and state level, to be forthcoming. As such, the full impacts of the legislation may differ from our current estimates, interpretations and assumptions, possibly materially, and the amount of the impact on the Company may accordingly be adjusted over time.

A general downturn in U.S. and global economic conditions, specifically a downturn in the municipal bond market, or government disruptions, including government shutdowns, may reduce our business prospects and decrease our revenues and cash flows.

Our business is affected by general economic conditions. Any extended weakness in the U.S. and global economies could reduce our business prospects and could cause decreases in our revenues and operating cash flows. Specifically, a downturn in the municipal bond market caused by an actual downgrade of monoline insurers could result in our municipal customers being required to spend municipal funds previously allocated to projects that would benefit our business to pay off outstanding bonds. A period of prolonged economic weakness could impact our customers’ ability to pay bills in a timely manner and may result in customer bankruptcies. Untimely payment and customer bankruptcies may lead to increased bad debt expenses or other adverse effects on our financial position, results of operations and/or cash flows. In addition, government disruptions, such as government shutdowns, may delay or halt the granting and renewal of permits, licenses and other items required by us and our customers to conduct our business.

We conduct manufacturing, sales and distribution operations on a worldwide basis and are subject to a variety of risks associated with doing business outside the United States.

We maintain significant international operations, including operations in North America, Europe, Asia-Pacific, the Middle East and South America. For the years ended December 31, 2019, 2018 and 2017, approximately 24.7%, 27.5%, and 24.3%, respectively, of our revenues were derived from international operations. We expect a significant portion of our revenues and profits to come from international operations and joint ventures for the foreseeable future.

As a result, we are subject to a number of risks and complications associated with international manufacturing, sales, services and other operations. These include:

- difficulties in enforcing agreements, collecting receivables and resolving disputes through some foreign legal systems;
- foreign customers with longer payment cycles than customers in the United States;
- difficulties in enforcing intellectual property rights or weaker intellectual property right protections in some countries;

- tax rates in certain foreign countries that exceed those in the United States and foreign earnings subject to withholding requirements;
- tax laws that restrict our ability to use tax credits, offset gains or repatriate funds;
- tax laws that impose additional taxes on our operations, including the implementation of value added tax in certain countries in the Middle East;
- sanctions, tariffs, exchange controls, trade disputes (including so-called “trade wars”) or other trade restrictions, including transfer pricing restrictions, when products produced in one country are sold to an affiliated entity in another country;
- difficulties with regard to, or taxes imposed on, the movement of cash between countries, including the repatriation of cash back to the United States;
- abrupt changes in foreign government policies and regulations;
- unsettled political conditions;
- acts of terrorism or criminality;
- kidnapping of employees;
- nationalization or privatization of companies with which we do business;
- protectionist policies in certain foreign countries, including those in the Middle East, that disfavor foreign companies operating in such countries;
- forced negotiation or modification of contracts;
- increased governmental ownership and regulation of markets in which we operate;
- the financial instability of, and the related inability or unwillingness to timely pay for our services by, national oil companies and other foreign customers resulting from, and/or exacerbated by, depressed oil prices;
- hostility from local populations, particularly in the Middle East;
- tenuous, unstable or hostile relationships between countries that are interconnected in our operations; and
- difficulties associated with compliance with a variety of laws and regulations governing international trade, including the Foreign Corrupt Practices Act.

To the extent that our international operations are affected by these unexpected and adverse foreign economic and political conditions, we may experience project disruptions and losses that could significantly reduce our revenues and profits.

Implementation and achievement of international growth objectives also may be impeded by political, social and economic uncertainties or unrest in countries in which we conduct operations or market or distribute our products. In addition, compliance with multiple, and potentially conflicting, international laws and regulations, import and export limitations, anti-corruption laws and exchange controls may be difficult, burdensome or expensive.

For example, we are subject to compliance with various laws and regulations, including the Foreign Corrupt Practices Act and similar anti-bribery laws, which generally prohibit companies and their intermediaries from making improper payments to officials for the purpose of obtaining or retaining business. While our employees and agents are required to comply with these laws, we cannot provide assurance that our internal policies, procedures and controls will always protect us from violations of these laws, despite our commitment to legal compliance and corporate ethics. The occurrence or allegation of these types of risks may adversely affect our business, performance, prospects, value, financial condition and results of operations.

Operational disruptions caused by political instability and conflict in the Middle East, South America, Europe and Asia could adversely impact our current operations and plans of expansion in these regions.

Our Corrosion Protection segment currently operates in the Middle East and South America, and our Infrastructure Solutions segment currently operates in Europe and Asia. Political instability and social unrest in the Middle East, South America, Europe and Asia (including export restrictions, trade and other sanctions, taxes, repatriations and nationalizations), as well as the potential for catastrophic events such as abrupt political change, terrorist acts and conflicts or wars in these and other regions may cause damage or disruption to the economy, financial markets and our current and prospective customers in the these regions. Political instability, conflicts and the potential for catastrophic events have contributed to, and will likely continue to contribute to, volatility in these regions, which could adversely affect our operations and operating results.

As a result of our operations in these regions, we are also exposed to certain other uncertainties not generally encountered in our U.S. operations, including those detailed in the immediately preceding risk factor.

Business operations could be adversely affected by terrorism.

The threat of, or actual acts of, terrorism may affect our operations around the world in unpredictable ways and may force an increase in security measures and cause disruptions in supplies and markets. If any of our facilities, including our manufacturing facilities, or if any of the projects we are working on, particularly in the energy and mining sector, were to be a direct target, or an indirect casualty, of an act of terrorism, our operations could be adversely affected. Corresponding instability in the financial markets as a result of terrorism also could adversely affect our ability to raise capital.

We have international operations that are subject to foreign economic uncertainties and foreign currency fluctuation.

Global financial and credit markets have been, and continue to be, unstable and unpredictable. For example, on January 31, 2020, the United Kingdom exited the European Union (commonly referred to as “Brexit”) and is now in an eleven month transition period. This has created significant uncertainties affecting the economy and business operations, including our operations, in the United Kingdom and the European Union. The terms of Brexit remain uncertain at the current time and, as such, it is difficult to predict the effect of Brexit on our Company and our operations in the United Kingdom, including our operations in Northern Ireland and the Republic of Ireland, our manufacturing facility in Wellingborough, United Kingdom, which distributes liners to the European Union and elsewhere, and our manufacturing facility in Stockton-on-Tees, United Kingdom, which manufactures and distributes cathodic protection equipment worldwide. Brexit could, among other things, affect the legal and regulatory schemes to which our operations in the United Kingdom are subject, adversely affect trade between the United Kingdom and the European Union and continue to cause economic uncertainty. The instability of the markets and weakness of the economy could affect the demand for our services, the financial strength of our customers and suppliers, their ability or willingness to do business with us, our willingness to do business with them, and/or our suppliers’ and customers’ ability to fulfill their obligations to us and/or the ability of us, our customers or our suppliers to obtain credit. These factors could adversely affect our operations, earnings and financial condition.

A significant portion of our contracts and revenues are denominated in foreign currencies, which may result in additional risk of fluctuating currency values and exchange rates, hard currency shortages and controls on currency exchange. Changes in the value of foreign currencies could increase our U.S. dollar costs for, or reduce our U.S. dollar revenues from, our foreign operations. Any increased costs or reduced revenues as a result of foreign currency fluctuations could affect our profits. For example, Brexit to date has resulted in a sharp decline in the value of the British Pound as compared to the U.S. dollar and other major currencies. If there is a significant strengthening of the U.S. dollar compared to the British pound, Euro, or the Canadian dollar, it may adversely affect our operating results and financial condition.

The impact of the coronavirus outbreak, or similar global health concerns, could negatively impact our operations, supply chain and customer base.

Our international operations and supply chains for certain of our products or services could be negatively impacted by the regional or global outbreak of illnesses, including coronavirus. Any quarantines, labor shortages or other disruptions to our operations, or those of our suppliers or customers, may adversely impact our sales and operating results. In addition, a significant outbreak of epidemic, pandemic or contagious diseases in the human population could result in a widespread health crisis that could adversely affect the economies and financial markets of many countries, including those in which we operate, resulting in an economic downturn that could affect the supply or demand for our products and services. We are unable to accurately predict the possible future effect on the Company if coronavirus or another disease continues to expand globally.

New tariffs and other trade restrictions may adversely affect our business and results of operations.

Certain of our businesses use, or depend on our customers' access to, steel products, including steel pipe, that may be imported into the United States from international markets. Certain new tariffs have been recently imposed or threatened by the United States on, among other things, steel products. Imposed tariffs have increased prices for imported steel products and have led domestic sellers to respond with market-based increases. In response, certain other countries have proposed responsive tariffs or other trade restrictions on U.S. products.

These new tariffs and trade restrictions, along with any additional tariffs and restrictions that may be implemented by the United States or other countries in the future, may result in further increased prices, decreased available supply of steel and other materials used in our business and decreased demand for U.S. products internationally. We may not be able to pass any resulting price increase on to our customers. Further, we, or our customers, may be unable to secure adequate supplies of steel or other materials on a timely basis, which may reduce demand for our products and services. As a result, our business and results of operations may be adversely affected.

An inability to attract and retain qualified personnel, and in particular, engineers, estimators, project managers, line workers, skilled craft workers and other experienced professionals, could impact our ability to perform on our contracts, which could harm our business and impair our future revenues and profitability.

Our ability to attract and retain qualified engineers, estimators, project managers, line workers, skilled craft workers and other experienced professionals in accordance with our needs is an important factor in our ability to maintain profitability and grow our business. The market for these professionals is competitive, particularly during periods of economic growth when the supply is limited. We cannot provide any assurance that we will be successful in our efforts to retain or attract qualified personnel when needed. Therefore, when we anticipate or experience growing demand for our services, we may incur additional cost to maintain a professional staff in excess of our current contract needs in an effort to have sufficient qualified personnel available to address this anticipated demand. If we do incur additional compensation and benefit costs, our customer contracts may not allow us to pass through these costs. We may recruit skilled professionals from other countries to work in the U.S., and from the U.S. and other countries to work abroad. Limitations imposed by immigration laws in the U.S. and abroad, travel bans, and difficulties obtaining visas and other restrictions on international travel could hinder our ability to attract necessary qualified personnel and harm our business and future operating results.

Competent and experienced engineers, project managers and craft workers are especially critical to the profitable performance of our contracts, particularly on our fixed-price contracts where superior design or execution of the project can result in profits greater than originally estimated or where inferior design or project execution can reduce or eliminate estimated profits or even result in a loss. Our project managers are involved in most aspects of contracting and contract execution including:

- supervising the bidding process, including providing estimates of significant cost components, such as material and equipment needs, and the size, productivity and composition of the workforce;
- negotiating contracts;
- supervising project performance, including performance by our employees, subcontractors and other third-party suppliers and vendors;
- estimating costs for completion of contracts that is used to estimate amounts that can be reported as revenues and earnings on the contract under the percentage-of-completion method of accounting;
- negotiating requests for change orders and the final terms of approved change orders; and
- determining and documenting claims by us for increased costs incurred due to the failure of customers, subcontractors and other third-party suppliers of equipment and materials to perform on a timely basis and in accordance with contract terms.

The California Refinery Safety Law, which requires owners and operators to use only building trade union contractors for covered work at the refineries (if not self-performed), has the potential to reduce, constrict or disrupt the entire labor pool for refinery maintenance in California by: (i) eliminating the non-union workforce; and (ii) requiring the use of the same workforce that also performs public works and general construction in California. This could adversely affect staffing for large turnaround projects at California refineries. This could also adversely affect Energy Services' ability to support turnaround and project work outside California, due to its past reliance on its mobile California workforce to staff short term projects throughout the West Coast. There will be a significant wage differential between high union wages in California and wages in other states on the West Coast, creating a large disincentive for the California workforce to leave the state. The uncertainty created by this industry workforce change has the potential to negatively impact the entire West Coast refinery labor market, which in turn would negatively impact our revenues, profits and operations.

In addition, we use a multi-level sales force structured around target markets and key accounts, focusing on marketing our products and services to engineers, consultants, administrators, technical staff and elected officials. We are dependent on our personnel to continue to develop improvements to our proprietary processes, including materials used and the methods of manufacturing, installing, strengthening, coating and cathodic protection and we require quality field personnel to effectively and profitably perform our work. Our success in attracting and retaining qualified personnel is dependent on the resources available in individual geographic areas and the impact on the labor supply of general economic conditions, as well as our ability to provide a competitive compensation package and work environment. Our failure to attract, train, integrate, engage and retain qualified personnel could have a significant effect on our financial condition and results of operations.

Our profitability could be negatively impacted if we are not able to maintain appropriate utilization of our workforce.

The extent to which we utilize our workforce affects our profitability. If we under-utilize our workforce, our project gross margins and overall profitability suffer in the short term. If we over-utilize our workforce, we may also negatively impact margins and overall profitability, as well as safety, employee satisfaction and project execution, which could result in an increase in injuries to our employees and a decline of future project awards. The utilization of our workforce is impacted by numerous factors including:

- our estimate of the headcount requirements for various units based on our forecast of the demand for our products and services;
- our ability to maintain our talent base and manage attrition;
- our ability to schedule our portfolio of projects to efficiently utilize our employees and minimize downtime between project assignments; and
- our need to invest time and resources into functions such as training, business development, employee recruiting, and sales that are not chargeable to customer projects.

Our business may be adversely impacted by work stoppages, staffing shortages and other labor matters.

As of December 31, 2019, our Aegion Energy Services business had approximately 1,250 employees that were represented by unions, although these numbers are constantly changing as customer demands change. Infrastructure Solutions has approximately 140 employees represented by unions. Although we believe that our relations with our employees and the unions are good, no assurances can be made that we will not experience these and other types of conflicts with labor unions, works councils, other groups representing employees, or our employees in general, especially in the context of any future negotiations with our labor unions. We can also make no assurance that future negotiations with our labor unions will not result in a significant increase in the cost of labor. Approximately 70% of our Energy Services union employees currently participate in multi-employer benefit plans, which is a result of the transition of many of our clients to our building trade union contracting entity. The number of multi-employer plans in which our employees participate varies depending on how many local unions we are using at any particular time, but it is usually between 20 and 30 multi-employer plans. Participation in multi-employer benefit plans may result in liability to Aegion Energy Services in excess of that directly attributable to employees of Aegion Energy Services.

Additionally, the employees of some of our customers are unionized, especially the customers of our Aegion Energy Services business. Any strikes, work stoppages or other labor matters experienced by our customers may impact our ability to work on projects and, as a result, have an adverse effect on our financial condition and results of operations.

Finally, in certain areas of our business, most notably in our Corrosion Protection platform, our employees are not represented by unions. As a result, we may not be eligible to bid or perform certain work that requires union labor, which may have an adverse effect on our financial condition and results of operations.

The revenues from the water and wastewater portion of our Infrastructure Solutions platform are substantially dependent on municipal government spending.

Many of our customers are municipal governmental agencies and, as such, we are dependent on municipal spending. Spending by our municipal customers can be affected by local political circumstances, budgetary constraints and other factors. Consequently, future municipal spending may not be allocated to projects that would benefit our business or may not be allocated in the amounts or for the size of the projects that we anticipated. A decrease in municipal spending on such projects would adversely impact our revenues, results of operations and cash flows.

The loss of one or more of our significant customers could adversely affect us.

One or more customers have in the past and may in the future contribute a material portion of our revenues in any one year. Because these significant customers generally contract with us for specific projects or for specific periods of time, we may lose these customers from year to year as the projects or maintenance contracts are completed. The loss of business from any one of these customers could have a material adverse effect on our business or results of operations.

The execution of our growth strategy is dependent upon the continued availability of third-party financing arrangements for our customers.

Tighter credit markets could adversely affect our customers' ability to secure the financing necessary to proceed or continue with pipe or other infrastructure installation, rehabilitation, strengthening, coating and cathodic protection projects. Our customers' or potential customers' inability to secure financing for projects could result in the delay, cancellation or downsizing of new projects or the suspension of projects already under contract, which could cause a decline in the demand for our services and negatively impact our revenues and earnings.

A substantial portion of our raw materials is from a limited number of vendors, and we are subject to market fluctuations in the prices of certain commodities.

The primary products and raw materials used by our Corrpro operations include zinc, aluminum, magnesium and other metallic anodes, as well as wire and cable. We believe that Corrpro has multiple sources available for these raw materials and is not dependent on any single vendor to meet its supply needs. However, the prices of these raw materials have historically been affected by the prices of energy, petroleum, steel and other commodities, tariffs and duties on imported materials and foreign currency and exchange rates. A significant increase in the prices of these raw materials could adversely affect our results of operations.

We purchase the majority of our fiber requirements for Insituform[®] tube manufacturing from four sources. We believe, however, that alternate sources are readily available, and we continue to negotiate with other supply sources. The manufacture of the Insituform[®] tubes used in our water and wastewater pipeline rehabilitation business is dependent upon the availability of resin, a petroleum-based product. We currently have qualified multiple resin suppliers, however, at the current time we purchase the majority of our resin for our North American operations from one supplier. For our European operations, we currently have qualified six resin suppliers. We believe that these and other sources of resin supply are readily available. Historically, resin prices have fluctuated on the basis of the prevailing prices of its inputs, including styrene and oil. We anticipate that prices will continue to be heavily influenced by the events affecting these inputs, including the oil market. If there is a shortage or contraction of fiber or resin suppliers or if the price of fiber or resin increase, it could have an adverse effect on our results of operations.

The primary products and raw materials used in the manufacture of our FRP composite systems are carbon, glass, resins, fabric and epoxy raw materials. Carbon and epoxies are the largest materials purchased, which are currently purchased through a select group of suppliers, although we believe these and the other materials are available from a number of vendors. The price of epoxy historically is affected by the price of oil. In addition, a number of factors such as worldwide demand, labor costs, energy costs, import duties and other trade restrictions may influence the price of these raw materials. An increase in the price of these raw materials may have an adverse effect on our operations. Further, because we utilize a limited number of extruders to manufacture our Fusible PVC[®] pipe products, we could be adversely affected if one or more of these extruders is unable to continue to manufacture our Fusible PVC[®] pipe products.

We also purchase a significant volume of fuel to operate our trucks and equipment. At present, we do not engage in any type of hedging activities to mitigate the risks of fluctuating market prices for oil or fuel. A significant increase in the price of oil could cause an adverse effect on our cost structure that we may not be able to recover from our customers.

We may become involved in legal proceedings, which will increase our costs and, if adversely determined, could have a material effect on our financial condition, results of operations, cash flows and liquidity.

As a result of the type of work we do, namely construction, we may become engaged in legal proceedings arising from the operation of our business, including being named as a defendant in future actions. Such actions against us may arise out of the normal course of performing services on project sites, and include workers' compensation claims, personal injury claims, property damage claims, environmental claims and contract disputes with our customers. From time to time, we may also be named as a defendant for actions involving the violation of federal and state labor laws related to employment practices, wages and benefits. We may also be a plaintiff in legal proceedings against customers seeking to recover wages and benefits or seeking to recover payment of contractual amounts due to us. Further, we may make claims against customers for increased costs incurred by us resulting from, among other things, services performed by us at the request of a customer that are in excess of original project scope that are later disputed by the customer and customer-caused delays in our contract performance.

We maintain insurance against operating hazards in amounts that we believe are customary in our industry. However, in some instances we are self-insured and in other instances our insurance policies include deductibles and certain coverage exclusions, so we cannot provide assurance that we are adequately insured against all of the risks associated with the conduct of our business. A successful claim brought against us in excess of, or outside of, our insurance coverage could have a material adverse effect on our financial condition, results of operations, cash flows and liquidity.

Litigation, regardless of its outcome, is expensive, typically diverts the efforts of our management away from operations for varying periods of time, and can disrupt or otherwise adversely impact our relationships with current or potential customers, subcontractors and suppliers. Payment and claim disputes with customers may also cause us to incur increased interest costs resulting from incurring indebtedness under our revolving line of credit or receiving less interest income resulting from fewer funds invested due to the failure to receive payment for disputed claims and accounts.

Extreme weather conditions may adversely affect our operations.

We are likely to be impacted by weather extremes, such as excessive rain or hurricanes, tornadoes, typhoons, snow and ice or frigid temperatures, which may cause temporary, short-term anomalies in our operational performance in certain localized geographic regions. Our Infrastructure Solutions and Corrosion Protection segments are particularly sensitive to weather extremes. Delays and other weather impacts could adversely affect our ability to meet project deadlines and may increase a project's cost and decrease its profitability.

Certain of our facilities are located in regions that may be affected by natural disasters.

We have multiple facilities in and around the U.S. Gulf Coast, including facilities near Houston, Texas, and in Florida. These regions are subject to increased hurricane activity that can result in substantial flooding. Our Aegion Energy Services business serves large oil and gas customers in California and is headquartered in Irvine, California. Furthermore, our Infrastructure Solutions and Corrosion Protection segments have substantial operations in California. Historically, California has been susceptible to natural disasters, such as earthquakes, drought, floods and wildfires. Although we maintain loss insurance where necessary, a hurricane, earthquake, wildfire or other natural disaster could result in significant damage to our facilities, destruction or disruption of our critical business or information technology systems, recovery costs and interruption to certain of our operations. In addition, a catastrophic event could interrupt operations of our customers and suppliers, which could result in delays or cancellation of customer orders, the loss of customers, and impediments to the manufacture or shipment of products or execution of projects, which could result in loss of business or an increase in expense, both of which may have a material adverse effect on our business. In the specific case of wildfires, an accusation or ultimate determination that our operations were the cause of a wildfire may also have a material adverse effect on our business.

The actual timing, costs and benefits of the Restructuring may differ from those currently expected, which may reduce our operating results.

On July 28, 2017, we introduced the Restructuring and, through several additional actions during 2018, 2019 and 2020, expanded the scope of the restructuring to include many of our operations around the world. The Restructuring is intended to reduce complexity and risk in our business operations, eliminate losses from underperforming businesses and also significantly reduce our consolidated annual operating expenses. We substantially completed much of the Restructuring during 2017, 2018 and 2019 and expect to complete all remaining activities during 2020. See Notes 1 and 4 to the consolidated financial statements contained in this report for additional information and disclosures regarding our restructuring activities.

The Restructuring is subject to various risks, which could result in the actual timing, costs and benefits of the plan differing from those currently anticipated. These risks and uncertainties include, among others, that: (i) we may not be able to implement the Restructuring in the time frame currently planned; (ii) our costs related to the Restructuring may be higher than currently estimated; (iii) the expected annual expense reductions may be less than currently estimated; and (iv) unanticipated disruptions to our operations may result in additional costs being incurred. Because of these and other factors, we cannot predict whether we will realize the purpose and anticipated benefits of the Restructuring, and if we do not, our business and results of operations may be adversely impacted. We also cannot provide assurance that we will not undertake additional restructuring activities in the future.

Additionally, the Restructuring may yield unintended consequences, such as:

- actual or perceived disruption of service or reduction in service standards to customers;
- the failure to preserve supplier relationships and distribution, sales and other important relationships and to resolve conflicts that may arise;
- attrition beyond our intended reduction in headcount and reduced employee morale, which may cause our employees who were not affected by the Restructuring to seek alternate employment;
- increased risk of employment litigation; and
- diversion of management attention from ongoing business activities.

Divestitures and discontinued operations could negatively impact our business, and retained liabilities from businesses that we sell could adversely affect our financial results.

As part of our portfolio management process, we review our operations for businesses, which may no longer be aligned with our strategic initiatives and long-term objectives. For example, as part of our Restructuring discussed above, we have recently or are in the process of divesting or otherwise exiting multiple businesses. We also continue to review our portfolio and may pursue additional divestitures. Divestitures pose risks and challenges that could negatively impact our business, including required separation or carve-out activities and costs, disputes with buyers or potential impairment charges. We may also dispose of a business at a price or on terms that are less than we had previously anticipated. After reaching an agreement with a buyer for the disposition of a business, we are also subject to the satisfaction of pre-closing conditions, as well as necessary contractual counterparty, regulatory and governmental approvals or consents on acceptable terms, which may prevent us from completing a transaction. Dispositions may also involve continued financial involvement, as we may be required to retain responsibility for, or agree to indemnify buyers against contingent liabilities related to a business sold, such as lawsuits, tax liabilities, lease payments, product liability claims or environmental matters. Under these types of arrangements, performance by the divested businesses or other conditions outside of our control could affect future financial results.

If we do not realize the expected benefits or synergies of any divestiture transaction, our consolidated financial position, results of operations and cash flows could be negatively impacted. Any divestiture may result in a dilutive impact to our future earnings if we are unable to offset the dilutive impact from the loss of revenue associated with the divestiture, as well as significant write-offs, including those related to goodwill and other intangible assets, which could have a material adverse effect on our results of operations and financial condition.

We may from time to time undertake internal reorganizations that may adversely impact our business and results of operations.

From time to time, including in 2019, in an effort to simplify our organizational structure and streamline our operations or for other operational reasons, we may undertake certain internal reorganizations that may involve, among other things, the combination or dissolution of certain of our existing subsidiaries, the creation of new subsidiaries and business divisions and the settlement of historical inter-company transactions. Additionally, as a result of the enactment of the TCJA and its effect on the taxation of offshore earnings, in connection with these actions or our operations generally, we may determine to repatriate certain earnings from our international subsidiaries, which earnings were previously permanently reinvested in such subsidiaries' operations. In undertaking such actions, we consider, among other things, the alignment of our corporate structure with our organizational objectives, the operational and tax efficiency of our corporate structure and the long-term cash flow needs of our business. These efforts may not result in the intended or expected benefits, may result in disruptions to our business and may cause the Company to incur additional expenses or tax liabilities. Accordingly, such actions may adversely impact our business and results of operations.

Changes in the industries within which we operate and market conditions could lead to charges related to discontinuances of certain of our businesses, asset impairment, workforce reductions or restructurings.

In response to changes in industry and market conditions, we may be required to strategically realign our resources and to consider restructuring, disposing of or otherwise exiting businesses. Any resource realignment, or decision to limit investment in or dispose of or otherwise exit businesses, may result in the recording of special charges, such as asset write-offs, workforce reductions, restructuring costs or charges relating to consolidation of excess facilities or businesses. Our estimates with respect to the useful life or ultimate recoverability of our carrying basis of assets, including purchased intangible assets, could change as a result of such assessments and decisions. Further, our estimates relating to the liabilities for excess facilities are affected by changes in real estate market conditions.

We may incur impairments to goodwill or long-lived assets.

We review our long-lived assets, including goodwill and other intangible assets, for impairment annually or whenever events or changes in circumstances indicate that the carrying value of these assets may not be recoverable. The valuation of goodwill and other intangible assets requires assumptions and estimates of many critical factors, including revenue and market growth, operating cash flows, market multiples and discount rates. Negative industry or economic trends, including reduced market prices of our common stock, reduced estimates of future cash flows, disruptions to our business, slower growth rates, or lack of growth in our relevant businesses, could lead to further impairment charges against our long-lived assets, including goodwill and other intangible assets. If, in any period, our stock price decreases to the point where our fair value, as determined by our market capitalization, is less than the book value of our assets for an extended period of time, this could also indicate a potential impairment, and we may be required to record an impairment charge in that period, which could adversely affect our results of operations.

We may be subject to information technology system failures, network disruptions, cybersecurity attacks and breaches in data security, which could disrupt our operations and could result in a loss of assets.

In the ordinary course of our business, we collect and store sensitive data, including intellectual property, proprietary business information, and personally identifiable information of our customers, suppliers, employees and other individuals. In storing and managing this information, we rely upon multiple information technology systems and networks, some of which are web-based or managed by third parties, to process, transmit and store electronic information and to manage or support a variety of critical business processes and activities. The secure and consistent operation of these systems, networks and processes is critical to our business operations. Our systems and networks have been, and will continue to be, the target of cybersecurity threats, such as botnets, distributed denial-of-service attacks, malware, ransomware, phishing, viruses, spoofing and other cyber-security incidents that could result in the unauthorized release, gathering, monitoring, use, loss or destruction of our customers', suppliers' or employees' sensitive and personal data. Successful cyber-attacks or other data breaches, as well as risks associated with compliance with applicable data privacy laws, could harm our reputation, divert management attention and resources, increase our operating expenses due to the employment of consultants and third party experts and the purchase of additional infrastructure, and/or subject us to legal or regulatory liability, resulting in increased costs and loss of revenue.

While we proactively safeguard our data and are continuously enhancing our security software and controls, the increase in frequency and sophistication of cyber-attacks may result in our security controls and practices and business continuity plans being ineffective in anticipating, preventing and effectively responding to all potential cyber-risk exposures. Further, data privacy is subject to frequently changing rules and regulations, which are not uniform and may possibly conflict in jurisdictions and countries where we provide services. Our failure to adhere to or successfully implement processes in response to changing regulatory requirements in this area could result in legal liability or impairment to our reputation in the marketplace.

Additionally, our employees and certain of our third-party service providers may have access or exposure to sensitive customer data and systems. The misuse or unauthorized disclosure of information could result in contractual and legal liability for us due to the actions or inactions of our employees or vendors.

To improve the effectiveness of our operations and to interface with our customers and suppliers, we use our customers' or suppliers' information technology systems to submit and process invoices and payments. The failures of these systems could disrupt our operations by causing transaction errors, processing inefficiencies, delays or cancellation of customer orders, impediments to the manufacture or shipment of products and other business disruptions. These events could lead to financial losses from loss of business or an increase in expense, all of which may have a material adverse effect on our business.

Increasing regulatory focus on privacy issues and expanding laws could expose us to increased liability as it relates to our necessary collection of employee and independent contractor personal data to effectively execute operations and comply with various regulatory requirements.

In May 2018, the European Union's new General Data Protection Regulation replaced the existing European Union Data Protection Directive, and has had a significant impact on how businesses can collect and process the personal data of European Union individuals, including the requirement for business to self-report personal data breaches to the relevant supervisory authority and, under certain circumstances, to the affected data subjects, and provide additional rights to individuals whose data is processed. Penalties for non-compliance are also significantly higher under the new law, with the maximum fine being the higher of €20 million or 4% of global turnover for the preceding year. Approximately 4% of our workforce as of December 31, 2019 was employed in the European Union. In January 2020, the California Consumer Privacy Act took effect, which establishes certain transparency rules and creates new data privacy rights for California residents. Approximately 38% of our workforce are California residents as of December 31, 2019. In addition, numerous proposals regarding privacy and data protection are pending before U.S. and non-U.S. legislative and regulatory bodies. Despite our commitment to complying with applicable laws, actual or alleged violations of these laws could result in legal claims or proceedings and regulatory penalties, which could disrupt our business, distract our employees and negatively impact our reputation as well as our results of operations. These rules and regulations may not be uniform and may possibly conflict in jurisdictions and countries where we conduct business. Our failure to adhere to or successfully implement processes in response to changing regulatory requirements in this area could result in legal liability or impairment to our reputation in the marketplace.

We are subject to a number of restrictive debt covenants under our credit facility.

In October 2015, the Company amended and restated its \$650.0 million senior secured credit facility, followed by subsequent amendments in February 2018 and December 2018, (the "amended Credit Facility") with a syndicate of banks. Our amended Credit Facility contains certain restrictive covenants, which restrict our ability to, among other things, incur additional indebtedness, incur certain liens on our assets or sell assets, make investments and make other restricted payments. Our amended Credit Facility also requires us to maintain specified financial ratios under certain conditions and satisfy financial condition tests. Our ability to meet those financial ratios and tests and otherwise comply with our financial covenants may be affected by the factors described in this "Risk Factors" section of this Report and other factors outside our control, and we may not be able to continue to meet those ratios, tests and covenants. Our ability to generate sufficient cash from operations to meet our debt obligations will depend upon our future operating performance, which will be affected by general economic, financial, competitive, business and other factors beyond our control. A breach of any of these covenants, ratios, tests or restrictions, as applicable, or any inability to pay interest on, or principal of, our outstanding debt as it becomes due could result in an event of default. Upon an event of default, if not waived by our lenders, our lenders may declare all amounts outstanding as due and payable.

At December 31, 2019, we were in compliance with all of our debt covenants as required under the amended Credit Facility. If we are unable to comply with the restrictive covenants in the future, we would be required to obtain amendments or waivers from our lenders or secure another source of financing. If our current lenders accelerate the maturity of our indebtedness, we may not have sufficient capital available at that time to pay the amounts due to our lenders on a timely basis.

In addition, these restrictive covenants may prevent us from engaging in transactions that benefit us, including responding to changing business and economic conditions and taking advantage of attractive business opportunities.

We occasionally access the financial markets to finance a portion of our working capital requirements and support our liquidity needs. Our ability to access these markets may be adversely affected by factors beyond our control and could negatively impact our ability to finance our operations, meet certain obligations or implement our operating strategy.

We occasionally borrow under our existing credit facility to fund operations, including working capital investments. Market disruptions such as those experienced in the United States and abroad in the past few years have materially impacted liquidity in the credit and debt markets, making financing terms for borrowers less attractive and, in certain cases, resulting in the unavailability of certain types of financing. Uncertainty in the financial markets may negatively impact our ability to access additional financing or to refinance our existing credit facility or existing debt arrangements on favorable terms or at all, which could negatively affect our ability to fund current and future expansion as well as future acquisitions and development. These disruptions may include turmoil in the financial services industry, volatility in the markets where our outstanding securities trade and general economic downturns in the areas where we do business. If we are unable to access funds at competitive rates, or if our short-term or long-term borrowing costs increase, our ability to finance our operations, meet our short-term obligations and implement our operating strategy could be adversely affected.

As a holding company, Aegion depends on its operating subsidiaries to meet its financial obligations.

Aegion Corporation is a holding company with no significant operating assets. Our subsidiaries conduct all of our operations and own substantially all of our assets. Our cash flow and our ability to meet our obligations depends on the cash flow of our subsidiaries. In addition, the payments of funds in the form of dividends, intercompany payments, tax sharing payments and other forms may be subject to restrictions under the laws of the states and countries in which we operate.

The market price of our common stock is highly volatile and may result in investors selling shares of our common stock at a loss.

The trading price of our common stock is highly volatile and subject to wide fluctuations in price in response to various factors, many of which are beyond our control, including:

- actual or anticipated variations in quarterly operating results;
- changes in financial estimates by securities analysts that cover our stock or our failure to meet these estimates;
- conditions or trends in the U.S. wastewater rehabilitation market;
- conditions or trends in mined materials, oil and natural gas markets;
- changes in municipal and corporate spending practices;
- a downturn of the municipal bond market or lending markets generally;
- changes in the federal or state governments that impact regulation and spending regarding energy and infrastructure;
- changes in market valuations of other companies operating in our industries;
- announcements by us or our competitors of a significant acquisition or divestiture; and
- additions or departures of key personnel.

In addition, the stock market in general and The Nasdaq Global Select Market in particular have experienced extreme price and volume fluctuations that may be unrelated or disproportionate to the operating performance of listed companies. Industry factors may seriously harm the market price of our common stock, regardless of our operating performance. Such stock price volatility could result in investors selling shares of our common stock at a loss.

Future sales of our common stock or equity-linked securities in the public market could adversely affect the trading price of our common stock and our ability to raise funds in new stock offerings.

Sales of substantial numbers of additional shares of our common stock or any shares of our preferred stock, including sales of shares in connection with any future acquisitions, or the perception that such sales could occur, may have a harmful effect on prevailing market prices for our common stock and our ability to raise additional capital in the financial markets at a time and price favorable to us. We may issue equity securities in the future for a number of reasons, including to finance our operations and business strategy, to adjust our ratio of debt to equity, to satisfy obligations upon exercise of outstanding warrants or options or for other reasons. Our certificate of incorporation provides that we have authority to issue 125,000,000 shares of common stock. As of December 31, 2019, 30,715,959 shares of common stock were issued and outstanding.

Provisions in our certificate of incorporation could make it more difficult for a third party to acquire us or could adversely affect the rights of holders of our common stock or the market price of our common stock.

Our certificate of incorporation provides that our board of directors has the authority, without any action of our stockholders, to issue up to 2,000,000 shares of preferred stock. Preferred stock may be issued upon such terms and with such designations as our board of directors may fix in its discretion, including with respect to: (i) the payment of dividends upon our liquidation, dissolution or winding up; (ii) voting rights that dilute the voting power of our common stock; (iii) dividend rates; (iv) redemption or conversion rights; (v) liquidation preferences; or (vi) voting rights.

In addition, our certificate of incorporation provides that subject to the rights of the holders of any class or series of preferred stock set forth in our certificate of incorporation, the certificate of designation relating to such class or series of preferred stock, or as otherwise required by law, any stockholder action may be taken only at a meeting of stockholders and may not be effected by any written consent by such stockholders. The affirmative vote of the holders of at least 80% of the capital stock entitled to vote for the election of directors is required to amend, repeal or adopt any provision inconsistent with such arrangement.

These provisions could potentially be used to discourage attempts by others to obtain control of our company through merger, tender offer, proxy, consent or otherwise by making such attempts more difficult or more costly, even if the offer may be considered beneficial by our stockholders. These provisions also may make it more difficult for stockholders to take action opposed by our board of directors or otherwise adversely affect the rights of holders of our common stock or the market price of our common stock.

Our amended and restated by-laws designate the state courts of Delaware or, if no such state court has jurisdiction, the federal court for the District of Delaware, as the sole and exclusive forum for certain types of claims that may be initiated by our stockholders, which could discourage lawsuits against Aegion and Aegion's directors and officers.

Our amended and restated by-laws provide that, unless waived by Aegion, the state courts of the State of Delaware or, if no state court located in the State of Delaware has jurisdiction, the federal court for the District of Delaware, will be the sole and exclusive forum for any claims brought by a stockholder (including a beneficial owner) (i) that are based upon a violation of a duty by a current or former director, officer or stockholder in such capacity or (ii) as to which the Delaware General Corporation Law confers jurisdiction upon the Delaware Court of Chancery. This exclusive forum provision may limit the ability of our stockholders to bring a claim in a judicial forum that such stockholders find favorable for disputes with Aegion or Aegion's directors or officers, which may discourage such lawsuits against Aegion and Aegion's directors and officers. Alternatively, if a court outside of Delaware were to find this exclusive forum provision inapplicable to, or unenforceable in respect of, one or more of the specified types of actions or proceedings described above, we could incur additional costs associated with resolving such matters in other jurisdictions, which could adversely affect our business, financial condition or results of operations.

We do not intend to pay cash dividends on our common stock in the foreseeable future.

We do not anticipate paying cash dividends on our common stock in the foreseeable future. Our present policy is to retain earnings to provide for the operation and expansion of our business or for the repurchase of shares of our common stock. Any payment of cash dividends will depend upon our earnings, financial condition, cash flows, financing agreements and other factors deemed relevant by our board of directors. Furthermore, under the terms of certain debt arrangements to which we are a party, we are subject to certain limitations on paying dividends. However, we carefully review this policy regularly and could initiate dividends in the future depending on appropriate circumstances.

Item 1B. Unresolved Staff Comments.

None.

Item 2. Properties.

We own our executive offices located in Chesterfield, Missouri, a suburb of St. Louis, at 17988 Edison Avenue. We also own our research and development and training facilities in Chesterfield.

Insituform Technologies, LLC owns a liner manufacturing facility and a contiguous felt manufacturing facility in Batesville, Mississippi. Insituform Linings Limited, our United Kingdom manufacturing company, owns certain premises in Wellingborough, United Kingdom, where its felt liner manufacturing facility is located and leases a facility for its glass liner manufacturing.

Underground Solutions, our wholly-owned subsidiary, leases office and warehouse space in California and Pennsylvania, and also leases pipe storage space in North Dakota and South Carolina.

Fyfe Co. and Fibrwrap Construction Services, our wholly-owned subsidiaries, lease an office in San Diego, California.

Corrpro, our wholly-owned subsidiary, owns certain office and warehouse space in Medina, Ohio as well as a manufacturing and warehouse facility in Sands Springs, Oklahoma. Corrpro also leases substantial office space in Houston, Texas. Its subsidiary, Corrpro Canada, Inc., owns certain premises in Edmonton, Alberta, Canada used for office and warehouse space. In addition, our Corrpro subsidiary in the United Kingdom, Corrpro Companies Europe Ltd., owns an office and production facility in Stockton-on-Tees, United Kingdom.

Our wholly-owned subsidiary, United Pipeline Systems, Inc., owns an office and shop facility as well as additional property in Durango, Colorado. In addition, our wholly-owned Canadian subsidiary, United Pipeline Systems Limited, owns an operating facility in Edmonton, Alberta, Canada for office space and manufacturing.

ACS, another wholly-owned subsidiary, owns certain premises in Conroe, Texas that are used as office space and operational facilities and leases certain premises in Tulsa, Oklahoma that are also used as office space and operational facilities.

Our wholly-owned subsidiary, Aegion Energy Services, leases an office in Irvine, California for its headquarters and also leases various operational facilities throughout California as well as in Washington, Texas and Utah.

We own or lease various other operational facilities in the United States, Canada, Europe, South America, Asia-Pacific and the Middle East, and the foregoing facilities are regarded by management as adequate for the current requirements of our business.

Item 3. Legal Proceedings.

We are involved in certain actions incidental to the conduct of our business and affairs. Management, after consultation with legal counsel, does not believe that the outcome of any such actions, individually and in the aggregate, will have a material adverse effect on our consolidated financial condition, results of operations or cash flows.

Item 4. Mine Safety Disclosure.

Information concerning mine safety violations or other regulatory matters required by section 1503(a) of the Dodd-Frank Wall Street Reform and Consumer Protection Act and Item 104 of SEC Regulation S-K is included in Exhibit 95 to this annual report on Form 10-K.

Item 4A. Information about our Executive Officers.

Our executive officers, and their respective ages and positions with us, are as follows:

Charles R. Gordon	62	President and Chief Executive Officer
David F. Morris	58	Executive Vice President and Chief Financial Officer
Mark A. Menghini	47	Senior Vice President, General Counsel and Secretary
Kenneth L. Young	68	Senior Vice President, Treasury and Tax
John L. Heggemann	42	Senior Vice President, Corporate Controller and Chief Accounting Officer

Charles R. Gordon serves as our President and Chief Executive Officer, a position he has held since October 2014. Mr. Gordon had been serving as our interim Chief Executive Officer since May 2014 and has served on our board of directors since 2009. Prior to serving as interim Chief Executive Officer of the Company, Mr. Gordon served as Chief Executive Officer of Natural Systems Utilities, LLC, a distributed water infrastructure company, from February 2014 to May 2014. Prior to Natural Systems Utilities, LLC, Mr. Gordon was President and Chief Operating Officer of Nuverra Environmental Solutions, Inc. (a holding company formerly known as Heckmann Corporation that buys and builds companies in the water sector) from November 2010 until his resignation in October 2013. Mr. Gordon was President and Chief Executive Officer of Siemens Water Technologies (a business unit of Siemens AG, a world leader in products, systems and services for water and wastewater treatment for industrial, institutional and municipal customers) from 2008 to 2010. Previously, Mr. Gordon served as Executive Vice President of the Siemens Water & Wastewater Systems Group from 2005 to 2008 and as Executive Vice President of the Siemens Water & Wastewater Services and Products Group from 2003 to 2005. His past experience also includes various management positions with US Filter Corporation and Arrowhead Industrial Water, prior to the acquisition of US Filter Corporation by the Siemens family of companies in 2004.

David F. Morris serves as our Executive Vice President and Chief Financial Officer, a position he has held since April 2018. Mr. Morris served as our Executive Vice President, Chief Administrative Officer, General Counsel and Secretary from October 2014 through April 2018 and as our interim Chief Financial Officer from November 2017 through April 2018. Mr. Morris served as our Vice President, General Counsel and Secretary beginning in January 2005 through April 2007, at which time he was promoted to Senior Vice President. Mr. Morris became our Chief Administrative Officer in August 2007. Mr. Morris was promoted to Executive Vice President in October 2014. From March 1993 until January 2005, Mr. Morris was an attorney with the law firm of Thompson Coburn LLP, St. Louis, Missouri, most recently as a partner in its corporate and securities practice areas.

Mr. Menghini serves as our Senior Vice President and General Counsel, a position he has held since May 2018. Mr. Menghini served as our Senior Vice President and Interim General Counsel from November 2017 through May 2018. Mr. Menghini served as our Senior Vice President and Deputy General Counsel from October 2014 through November 2017 and as our Vice President and Deputy General Counsel from December 2013 through October 2014. Prior to joining Aegion, Mr. Menghini was an officer and shareholder with the law firm of Greensfelder, Hemker & Gale, P.C., a regional law firm based in St. Louis, Missouri, where he practiced as a member of the firm's Construction Law Practice Group from 1998 until 2013.

Kenneth L. Young serves as our Senior Vice President, Treasury and Tax, a position he has held since June 2019. He served as our Senior Vice President, Controller, Principal Accounting Officer and Treasurer from December 2018 until June 2019. Mr. Young served as our Senior Vice President and Treasurer from October 2014 through December 2018, and as interim Corporate Controller from May to December 2018. Mr. Young served as our Vice President and Treasurer from April 2009 until October 2014. Prior to joining our Company in April 2009, he worked for Huttig Building Products, Inc., a building supply distributor, from 2005 to 2009, most recently serving as Chief Financial Officer, Secretary and Treasurer. Prior to that, he worked for MEMC Electronic Materials (now SunEdison Semiconductor) from 1989 to 2005, most recently serving as Corporate Treasurer.

John L. Heggemann serves as our Senior Vice President, Corporate Controller and Chief Accounting Officer, a position he has held since June 2019. He served as our Vice President – Operational Finance, Middle East and Asia Pacific from April 2018 to June 2019. Prior to that, Mr. Heggemann served as our Senior Controller and Director of Cost Accounting in the Corrosion Protection Platform and as a Plant/Manufacturing Controller and Senior Financial Analyst in the Infrastructure Solutions Platform. Mr. Heggemann has been with the Company since August 2013 and previously worked for the Company from September 2001 to September 2006. Mr. Heggemann served in finance-related roles with Spartan Showcase, a division of Leggett & Platt, Inc., and with Carboline Company, a division of RPM International Inc., from September 2006 to August 2013.

PART II

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

Our common shares, \$.01 par value, are traded on The Nasdaq Global Select Market under the symbol “AEGN”.

During the quarter ended December 31, 2019, we did not offer any equity securities that were not registered under the Securities Act of 1933, as amended. As of February 21, 2020, the number of holders of record of our common stock was 374.

Holders of common stock are entitled to receive dividends as and when they may be declared by our board of directors. Our present policy is to retain earnings to provide for the operation and expansion of our business. However, our board of directors will review our dividend policy from time to time and will consider our earnings, financial condition, cash flows, financing agreements and other relevant factors in making determinations regarding future dividends, if any. Under the terms of our debt arrangement to which we are a party, we are subject to certain limitations on paying dividends. See “Management’s Discussion and Analysis of Financial Condition and Results of Operations – Liquidity and Capital Resources – Long-Term Debt” for further discussion of such limitations.

The following table provides information as of December 31, 2019 with respect to the shares of common stock that may be issued under our existing equity compensation plans:

Equity Compensation Plan Information

Plan Category	Number of securities to be issued upon exercise of outstanding options, warrants and rights (a)	Weighted-average exercise price of outstanding options, warrants and rights (b)	Number of securities remaining available for future issuance under equity compensation plans (excluding securities reflected in column (a)) (c)
Equity compensation plans approved by security holders ⁽¹⁾	1,288,304	\$ 22.71	2,099,380
Equity compensation plans not approved by security holders	—	—	—
Total	1,288,304	\$ 22.71	2,099,380

⁽¹⁾ The number of securities to be issued upon exercise of granted/awarded options, warrants and rights includes: (i) 1,034,964 restricted stock units and restricted performance units; and (ii) 253,340 deferred stock units outstanding at December 31, 2019.

Issuer Purchases of Equity Securities

The following table provides information regarding repurchases made by us of our common stock during the year ended December 31, 2019, pursuant to share repurchase programs approved by our board of directors.

	Total Number of Shares (or Units) Purchased	Average Price Paid per Share (or Unit)	Total Number of Shares (or Units) Purchased as Part of Publicly Announced Plans or Programs	Maximum Number (or Approximate Dollar Value) of Shares (or Units) that May Yet Be Purchased Under the Plans or Programs
January 2019 ⁽¹⁾⁽²⁾	232,134	\$ 17.96	222,901	1,777,099
February 2019 ⁽¹⁾⁽²⁾	280,640	19.86	137,107	1,639,992
March 2019 ⁽¹⁾⁽²⁾	262,215	17.07	262,035	1,377,957
April 2019 ⁽¹⁾⁽²⁾	184,846	19.09	184,162	1,193,795
May 2019 ⁽¹⁾⁽²⁾	286,721	15.84	286,721	907,074
June 2019 ⁽¹⁾⁽²⁾	181,160	15.88	181,160	725,914
July 2019 ⁽¹⁾⁽²⁾	74,939	17.96	70,330	655,584
August 2019 ⁽¹⁾⁽²⁾	55,576	19.19	55,000	600,584
September 2019 ⁽¹⁾⁽²⁾	27,500	20.36	27,500	573,084
October 2019 ⁽¹⁾⁽²⁾	64,033	20.59	24,763	548,321
November 2019 ⁽¹⁾⁽²⁾	21,343	21.68	19,955	528,366
December 2019 ⁽¹⁾⁽²⁾	20,884	22.19	20,714	507,652
Total	1,691,991	\$ 17.96	1,492,348	(3)

⁽¹⁾ In December 2018, our board of directors authorized the open market repurchase of up to two million shares of our common stock beginning January 1, 2019. Any shares repurchased are pursuant to one or more 10b5-1 plans. The program expires on the earlier of the repurchase by the Company of two million shares of common stock pursuant to the program or the board of directors' termination of the program. In December 2018, we amended our senior secured credit facility, which limited the open market repurchase of our common stock to be made during 2019 to \$32.0 million. We began repurchasing shares under this program in January 2019 and repurchased 1,492,348 shares of our common stock during 2019. Once repurchased, we promptly retired the shares.

⁽²⁾ In connection with approval of our credit facility, our board of directors approved the purchase of up to \$10.0 million of our common stock in each calendar year in connection with our equity compensation programs for employees. The number of shares purchased includes shares surrendered to us to pay the exercise price and/or to satisfy tax withholding obligations in connection with "net, net" exercises of employee stock options and/or the vesting of restricted stock, restricted stock units or performance units issued to employees. During 2019, 48,409 shares were surrendered in connection with stock swap transactions and 151,234 shares were surrendered in connection with restricted stock unit and performance unit transactions. The deemed price paid was the closing price of our common stock on the Nasdaq Global Select Market on the date that the restricted stock units or performance units vested. Once repurchased, we promptly retired the shares.

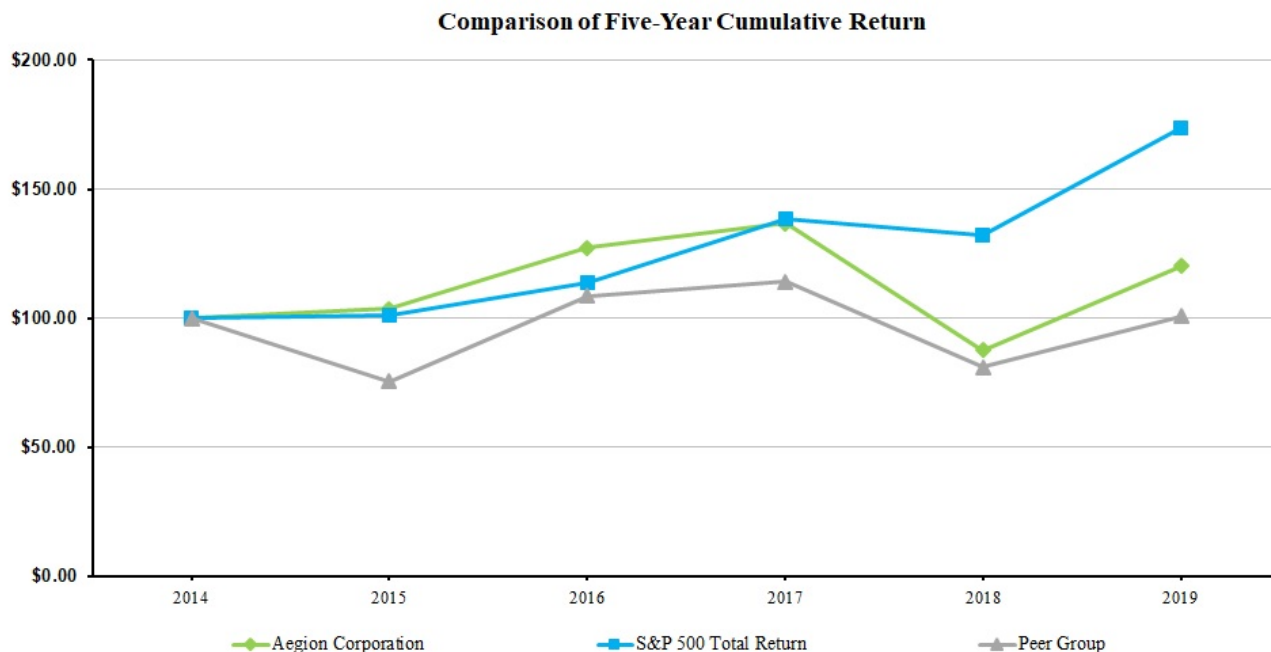
⁽³⁾ In December 2019, our board of directors authorized the open market repurchase of up to an additional two million shares of our common stock upon completion of the program approved by the board of directors in December 2018. As of December 31, 2019, 507,652 shares remained to be repurchased under the 2018 program and an additional two million shares under the new 2019 program. Any shares repurchased will be pursuant to one or more 10b5-1 plans. The 2019 program will expire on the earlier of the repurchase by the Company of two million shares of common stock pursuant to the program or the board of directors' termination of the program. The terms of our senior secured credit facility limit the open market repurchase of our common stock to \$40.0 million annually while our consolidated financial leverage ratio remains greater than 2.50 to 1.00.

Performance Graph

The following performance graph compares the total stockholder return on our common stock to the S&P 500 Index and a selected peer group index for the past five years. The compensation committee of our board of directors also reviews data for this peer group in establishing the compensation of our executive officers. In 2019, the peer group index was comprised of the following companies:

Actuant Corporation	Matrix Service Company
Barnes Group, Inc.	McDermott International Inc.
CIRCOR International, Inc.	Mistras Group, Inc.
Dril-Quip, Inc.	Newpark Resources, Inc.
Forum Energy Technologies, Inc.	Oil States International Inc.
Granite Construction Incorporated	Primoris Services Corporation
Helix Energy Solutions Group, Inc.	Team, Inc.
Kennametal, Inc.	Tetra Tech, Inc.
MasTec, Inc.	Valmont Industries, Inc.

The graph assumes that \$100 was invested in our common stock and each index on December 31, 2014 and that all dividends, if any, were reinvested.



Comparison of Five-Year Cumulative Return

	2014	2015	2016	2017	2018	2019
Aegion Corporation	\$ 100.00	\$ 103.76	\$ 127.35	\$ 136.65	\$ 87.69	\$ 120.20
S&P 500 Total Returns	100.00	101.38	113.51	138.29	132.23	173.86
Peer Group	100.00	75.43	108.63	114.06	80.96	100.64

Notwithstanding anything set forth in any of our previous filings under the Securities Act of 1933 or the Securities Exchange Act of 1934 which might incorporate future filings, including this Annual Report on Form 10-K, in whole or in part, the preceding performance graph shall not be deemed incorporated by reference into any such filings.

Item 6. Selected Financial Data.

The selected financial data set forth below has been derived from our consolidated financial statements contained in “Item 8. Financial Statements and Supplementary Data” of this Report and previously published historical financial statements not included in this Report. The selected financial data set forth below should be read in conjunction with “Management’s Discussion and Analysis of Financial Condition and Results of Operations” and our consolidated financial statements, including the footnotes, contained in this Report.

<i>(In thousands, except per share amounts)</i>	Years Ended December 31,				
	2019⁽¹⁾	2018⁽²⁾	2017⁽³⁾	2016⁽⁴⁾	2015⁽⁵⁾
STATEMENT OF OPERATIONS DATA:					
Revenues	\$ 1,213,935	\$ 1,333,568	\$ 1,359,019	\$ 1,221,920	\$ 1,333,570
Operating income (loss)	10,973	29,647	(43,520)	50,791	17,729
Net income (loss) ⁽⁶⁾	(20,892)	2,928	(69,401)	29,453	(10,284)
Basic earnings (loss) per share ⁽⁶⁾	(0.67)	0.09	(2.09)	0.85	(0.28)
Diluted earnings (loss) per share ⁽⁶⁾	(0.67)	0.09	(2.09)	0.84	(0.28)
BALANCE SHEET DATA:					
Cash and cash equivalents	\$ 64,874	\$ 83,527	\$ 105,717	\$ 129,500	\$ 209,253
Working capital, net of cash	142,194	178,690	219,673	172,136	171,176
Current assets	450,215	481,867	587,064	532,237	678,196
Property, plant and equipment, net	101,091	107,059	109,040	156,747	144,833
Goodwill	256,835	260,633	260,715	298,619	249,120
Intangible assets, net	104,828	119,696	132,345	194,911	174,118
Total assets	995,513	992,417	1,107,099	1,193,582	1,254,013
Current liabilities	234,041	219,650	261,674	230,601	297,767
Total long-term debt	276,432	311,472	344,795	370,620	351,128
Total liabilities	560,420	522,230	602,043	617,399	659,457
Total stockholders’ equity	435,093	462,737	494,246	568,500	578,025

- (1) 2019 results include pre-tax charges of \$32.3 million related to our restructuring efforts, impairment charges of \$23.4 million related to our held for sale operations, \$3.4 million in acquisition and divestiture expenses related primarily to our held for sale operations and a \$4.4 million project remediation charge related to a CIPP project in Infrastructure Solutions.
- (2) 2018 results include pre-tax charges of \$29.5 million related to our restructuring efforts, \$7.0 million in acquisition and divestiture expenses related primarily to our divestiture of Bayou and two small acquisitions, \$2.8 million in non-cash charges related to estimates for inventory obsolescence, \$2.2 million related to amending our Credit Facility and a \$7.0 million loss on the sale of Bayou. Results also include a tax benefit of \$1.9 million related to certain adjustments from the TCJA.
- (3) 2017 results include pre-tax charges of \$24.0 million related to our restructuring efforts, \$86.4 million related to certain goodwill and definite-lived intangible asset impairments, and \$3.1 million in acquisition and divestiture expenses related to our acquisition of Environmental Techniques and our planned divestiture of Bayou. Results also include tax expenses of \$2.4 million related to impacts from the TCJA.
- (4) 2016 results include pre-tax charges of \$15.9 million related to our restructuring efforts and \$2.7 million in acquisition expenses related to our acquisitions of Underground Solutions, Fyfe Europe, Concrete Solutions, LMJ and diligence on other targets. Results also include a pre-tax gain of \$6.6 million in connection with the settlement of two longstanding lawsuits.
- (5) 2015 results include pre-tax charges of \$11.0 million related to our restructuring efforts, \$43.5 million related to certain goodwill impairments, and \$1.9 million in acquisition expenses related to our acquisitions of Schultz, Underground Solutions and diligence on other targets. Results also include pre-tax charges of \$3.4 million related to issuing our Credit Facility.
- (6) All periods presented include amounts attributable to Aegion Corporation.

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

Executive Summary

Aegion combines innovative technologies with market leading expertise to maintain, rehabilitate and strengthen pipelines and other infrastructure around the world. For nearly 50 years, we have played a pioneering role in finding innovative solutions to rehabilitate aging infrastructure, primarily pipelines in the wastewater, water, energy, mining and refining industries. We also maintain the efficient operation of refineries and other industrial facilities and provide innovative solutions for the strengthening of buildings, bridges and other structures. We are committed to keeping infrastructure working better, safer and longer for customers and communities around the world. We believe the depth and breadth of our products and services make us a leading provider for the world's infrastructure rehabilitation and protection needs.

Business Outlook

Aegion primarily serves aging infrastructure markets, where the demand for maintenance and rehabilitation exceeds available funding and resources. That imbalance results in favorable long-term growth trends in our core markets. Our focus on rehabilitation also lessens our dependence on new construction activity, which reduces our risk in cyclical markets. We also see a growing global awareness of health, safety and environmental issues, which further reinforces the need for the environmentally sustainable solutions we provide.

We have substantially completed a process that began five years ago to position our operations in markets with favorable scale and earnings profiles and reduce our footprint in markets where growth opportunities were limited, uneven or better served by a different business model. We also simplified our overhead and legal entity structure to align with our more focused organization. As a result of these efforts, we shrank the top line in certain underperforming or divested portions of our business.

Moving into 2020, we are transitioning into a new phase of growth for the organization, focused on profitable expansion in our core markets. We are differentiated from our competitors in several ways:

- Our strong focus on technology & innovation, evidenced by R&D investments that have doubled historical levels in recent years.
- Our unmatched market coverage, which enables us to serve customers in all 50 states, in more than 90 countries and on six continents. As we deploy new technologies, we are well-positioned to leverage our channels to market for faster product acceptance.
- Our global manufacturing capabilities, which allow us to enjoy stronger margins than traditional installation-only contractors and provide tremendous market intelligence as we look for new ways to meet the ever-changing needs of our customers.

We are well positioned with a positive market outlook and growth opportunities in each of our three operating segments, and we are targeting significant earnings expansion in 2020. Longer term, we believe our core businesses can generate annual revenue growth in the low-to mid-single digit range, which should result in low double-digit annual earnings per share growth.

Infrastructure Solutions

One of the most attractive areas for growth is in the rehabilitation of municipal wastewater and pressure pipelines, primarily in North America. Recent Bluefield Research forecasts estimate that in the U.S. alone, more than \$230 billion of capital expenditures are forecasted over the next decade to address water and wastewater pipeline infrastructure, where the national average age of water and wastewater pipeline has climbed to 45 years. It is estimated that water loss at U.S. utilities averages 15% annually with some municipalities losing more than half of all water pumped and treated for distribution to customers. Rehabilitation of existing pipes is expected to be the fastest growing spend category, and with installation costs including labor and paving making up a significant percentage of overall capex, municipalities will continue to look for trenchless solutions in lieu of more expensive and socially disruptive dig-and-replace alternatives.

We are well positioned to serve this growing demand both domestically and abroad through our extensive portfolio of trenchless solutions. We offer a diverse portfolio of solutions in a highly fragmented and growing market. Outside North America, we also have an attractive market in Asia-Pacific for large-diameter pressure pipe strengthening, and we are continuing to pursue a strategy of growing third-party product sales around the globe. Our objective is to maintain growth and our share in a large and mature market through a continued focus on productivity and offering customer-driven solutions through technological differentiation.

For more than two years, we have focused heavily on developing new technology initiatives to serve the pressure pipe and wastewater rehabilitation business. In 2019, we substantially completed the development for a robotic system to mechanically and effectively seal the service connection between a CIPP pressurized water main line to residential lines into homes. Success with this development initiative could address a weak point in current commercially available small-diameter pressure pipe rehabilitation systems today. We also recently introduced the application of ultraviolet light technology to cure felt CIPP tubes, which has the potential to reduce the environmental and equipment footprint that is currently required for the curing process. Any new technology takes time to penetrate the market, but we believe both initiatives represent long-term growth levers for the segment and we are focused on commercializing these initiatives to gain broader market acceptance.

Corrosion Protection

Oil and gas fundamentals support a positive outlook for our Corrosion Protection segment. In the U.S., 2019 oil & gas production set records and the International Energy Agency projects the country will continue to dominate global growth in oil and natural gas through 2025. As supply has grown, so has the U.S. export market and the EIA projects the U.S. will become a net energy exporter by 2022. For North America midstream operators, this strength in production and demand continues to create new opportunities to expand existing networks, build greenfield pipelines and ensure existing infrastructure is operating as safely and efficiently as possible. Our corrosion protection segment is well positioned to serve this demand with our broad suite of offerings, providing pipeline protection through interior pipe linings, interior and exterior pipe weld coatings and insulation as well as best-in-class cathodic protection systems that inhibit exterior pipeline corrosion.

Our Corrpro business in the U.S. further stands to benefit by using our digital data collection and analysis tool to help our customers comply with new midstream and upstream pipeline regulations, expected to take effect in July of this year. Approximately three in four of Corrpro's customers are regulated pipeline operators and our proprietary handheld advanced data collection units and corrosion protection databases offer a faster, more efficient way to collect pipeline data for analysis, supporting both PHMSA compliance and pipeline rehabilitation and maintenance decisions. Corrpro's pipeline assessment services are expected to create a multiplier effect for our other capabilities in direct pipeline assessments, engineering, cathodic protection system installation and pipeline corrosion remediation. Our objective is to expand the relationships with our top customers, who are the leading pipeline owners in North America, to accelerate revenue growth.

We have seen improved demand for our Tite Liner[®] lining pipeline protection system and our field pipe coatings applications, both in our North America market as well as overseas. The outlook for growth in the Middle East is strong, with hundreds of billions in investment from major national energy companies either planned or under construction to increase production through multiple major onshore and offshore gas and oil field development and expansion projects. Strong product acceptance for our industrial linings and coatings applications, along with our solid track record over the past decade, positions us well to capture growth opportunities arising from this multi-year development pipeline. In 2019, our industrial linings business expanded its presence in Saudi Arabia after successfully working with local operators to have HDPE liners specified into projects. We also commissioned a new first-of-its-kind rotolining facility with our industrial linings joint venture partner to offer a more comprehensive linings solution to serve the growing demand in the region.

Energy Services

We expect Energy Services to continue to build on the momentum achieved over the last few years. The outlook for day-to-day downstream refinery maintenance remains robust. The average age of West Coast refineries is greater than 80 years old with current capacity operating consistently at utilization rates above 90%, contributing to strong demand for maintenance, turnaround and construction services to keep plants operating safely and efficiently. Additionally, high regulatory standards and environmental mandates drive strict compliance criteria and investment for refinery maintenance and support recurring revenue streams. Our union operation has differentiated itself by successfully navigating California's strict labor market regulations, which we believe has increased stickiness with our blue-chip customer base.

We are well positioned as the lead outsourced provider of maintenance services at refineries on the United States West Coast. We have an effort underway to expand our services to those customers in mechanical maintenance, turnaround services, electrical and instrumentation maintenance and small capital construction activities as well as expand beyond our current West Coast footprint to the Rocky Mountain region.

Strategic Initiatives/Divestitures

Restructuring

On July 28, 2017, our board of directors approved the Restructuring, a comprehensive global realignment and restructuring plan. As part of the Restructuring, we announced plans to: (i) divest our pipe coating and insulation businesses in Louisiana, The Bayou Companies, LLC and Bayou Wasco Insulation, LLC (collectively “Bayou”); (ii) exit all non-pipe related contract applications for the Tyfo[®] system in North America; (iii) right-size the cathodic protection services operation in Canada and the CIPP businesses in Australia and Denmark; and (iv) reduce corporate and other operating costs.

During 2018 and 2019, our board of directors approved additional actions with respect to the Restructuring, which included the decisions to: (i) divest the Australia and Denmark CIPP businesses; (ii) take actions to further optimize operations within North America, including measures to reduce consolidated operating costs; and (iii) divest or otherwise exit multiple additional international businesses, including: (a) our cathodic protection installation activities in the Middle East, including Corppower International Limited, our cathodic protection materials manufacturing and production joint venture in Saudi Arabia; (b) United Pipeline de Mexico S.A. de C.V., our Tite Liner[®] joint venture in Mexico (“United Mexico”); (c) our Tite Liner[®] businesses in Brazil and Argentina; (d) Aegion South Africa Proprietary Limited, our Tite Liner[®] and CIPP joint venture in the Republic of South Africa; and (e) our CIPP contract installation operations in England, the Netherlands, Spain and Northern Ireland.

We completed the divestitures of Bayou and the Denmark CIPP business in 2018. We also completed the divestitures of the Netherlands CIPP business and Tite Liner[®] joint venture in Mexico in 2019, as well as the shutdown of activities for the CIPP business in England. We completed the divestitures of CIPP operations in Australia and Spain in early 2020. Remaining divestiture and shutdown activities include the sale of the Northern Ireland contracting operation and minor final dissolution activities in South America and South Africa, all of which is expected to be completed in the first half of 2020. Additionally, the exit of our cathodic protection installation activities in the Middle East is substantially complete, though we expect minimal wind-down activities will extend through the second quarter of 2020 related to a small number of projects remaining in backlog.

As part of efforts to optimize our cathodic protection operations in North America, management initiated plans during the fourth quarter of 2019 to further downsize operations in the U.S., including the closure of three branch offices and the exit of capital intensive drilling activities at four branch offices. These actions included a reduction of approximately 20% of the cathodic protection domestic workforce and an exit of drilling activities that contributed approximately 20% to our cathodic protection domestic revenues in 2019. We expect these actions to improve our cathodic protection cost structure in the U.S., eliminate unprofitable results in certain parts of the business and reduce consolidated annual expenses for the business overall. Also during the fourth quarter of 2019, we reduced corporate headcount and took other actions to reduce corporate costs.

Total pre-tax Restructuring charges recorded during 2019 were \$32.3 million (\$29.9 million post-tax) and consisted of employee severance, retention, extension of benefits, employment assistance programs, early lease and contract termination costs and other restructuring charges associated with the restructuring efforts described above. Total pre-tax Restructuring and related impairment charges since inception were \$171.9 million (\$155.7 million post-tax), including cash charges of \$45.3 million and non-cash charges of \$126.6 million, of which \$86.4 million relates to goodwill and long-lived asset impairment charges recorded in 2017 as part of exiting the non-pipe FRP contracting market in North America. We reduced headcount by approximately 650 employees as a result of these actions.

We are substantially complete with respect to our restructuring efforts and expect to incur additional cash charges of between \$2 million and \$4 million. We could also incur additional non-cash charges primarily associated with the release of cumulative currency translation adjustments and losses on the closure or liquidation of international entities. The identified charges are primarily focused in the international operations of both Infrastructure Solutions and Corrosion Protection, but will also include certain charges in Energy Services and Corporate to a lesser extent.

See “Financial Statements and Supplementary Data” in Item 8 of this Report for further discussion regarding our recent strategic initiatives. See Note 4 to the consolidated financial statements contained in this Report for additional information on the charges related to our restructuring efforts.

Divestitures – Planned and Completed

Through our restructuring efforts to exit higher risk, low return markets and streamline our operations, we have divested, or planned to divest, certain businesses in our Infrastructure Solutions and Corrosion Protection segments during 2020, 2019 and 2018:

- i. In February 2020, we sold our CIPP contracting entity in Spain. In connection with the sale, we entered into a five-year exclusive tube-supply agreement whereby the buyer will exclusively purchase our Insituform® CIPP liners. The buyer is also entitled to use the Insituform® trade name in Spain based on a trademark license granted for the same five-year time period.
- ii. In January 2020, we sold our CIPP contracting entity in Australia. In connection with the sale, we entered into a five-year exclusive tube-supply agreement whereby the buyer will exclusively purchase our Insituform® CIPP liners. The buyer is also entitled to use the Insituform® trade name in Australia based on a trademark license granted for the same five-year time period.
- iii. In October 2019, we sold the CIPP contracting operations of Insituform Netherlands. We retained certain assets relating to the wet-out facility in The Netherlands and will continue such operation in order to provide liners in continental Europe as part of our tube manufacturing and product sales business. In connection with the sale, we entered into a five-year tube supply agreement whereby the buyer will purchase our Insituform® CIPP liners.
- iv. In October 2019, we sold our interest in United Mexico to our joint venture partner. In connection with the sale, we entered into a long-term license agreement pursuant to which United Mexico will be the exclusive licensee in Mexico with respect to certain trademarks, patents and other intellectual property relating to our pipe lining business. We further expect to enter into a long-term agreement for the supply of equipment and consumables as well as the provision of services to United Mexico.
- v. During the second quarter of 2019, we initiated plans to sell Environmental Techniques, our contracting operation in Northern Ireland. We currently believe it is probable that a sale of Environmental Techniques will occur in the first half of 2020.
- vi. During the third quarter of 2018, we sold substantially all of the fixed assets and inventory from our CIPP operations in Denmark. In connection with the sale, we entered into a five-year exclusive tube-supply agreement whereby the buyer will exclusively purchase our Insituform® CIPP liners. The buyer will also be entitled to use the Insituform® trade name in Denmark based on a trademark license granted for the same five-year time period.
- vii. During the third quarter of 2018, we sold substantially all of the assets of Bayou and our ownership interest in Bayou Wasco Insulation LLC, which collectively had been held for sale as part of our restructuring efforts and reflected our desire to reduce further our exposure in the North American upstream oil and gas markets.

See Notes 1 and 5 to the consolidated financial statements contained in this Report for a detailed discussion regarding strategic initiatives and divestitures.

Results of Operations

Overview

Revenues of \$1.21 billion were generated in 2019, a decrease of 9.0% from 2018 revenues of \$1.33 billion, which were bolstered by large projects in our Middle East coating services operation within Corrosion Protection. Through our restructuring efforts, we are exiting or divesting higher-risk, non-core businesses in Infrastructure Solutions and Corrosion Protection. Revenue from exited or to be exited operations totaled \$70.4 million and \$126.3 million in 2019 and 2018, respectively. Excluding the impact from these business exits, revenues on a same-store basis declined 5.3% in 2019 compared to 2018, primarily due to the expected reduction in large coating project contributions noted above. Additionally, we recorded improved gross margins and lower operating expenses in 2019 as compared to 2018, largely as a result of our restructuring actions.

Infrastructure Solutions had lower revenues in 2019 compared to 2018 primarily due to exiting a majority of its international locations for CIPP contracting installation services. The cornerstone CIPP business in North America increased revenues and improved gross margins in 2019 as compared to 2018.

Corrosion Protection was negatively impacted in 2019 by lower revenue from our coating services operation, as discussed above, and decreased profitability from our North American cathodic protections operations, which experienced lower revenues, project delays and other inefficiencies. Our industrial linings operations in the United States and Middle East, however, experienced significantly increased activity in 2019.

Energy Services revenues decreased in 2019, primarily related to expected lower turnaround and construction activities compared to the record revenues achieved in 2018. These decreases were more than mitigated during 2019 through a higher volume of maintenance services activity and improved performance on turnaround and construction services projects.

Our interest costs decreased in 2019 as we continued to benefit from lower debt balances and a stable interest rate environment.

Significant Events

Restructuring – As part of the Restructuring, we recorded pre-tax charges of \$32.3 million (\$29.9 million post-tax), \$29.5 million (\$24.2 million post-tax) and \$23.7 million (\$20.6 million post-tax) during 2019, 2018 and 2017, respectively. These charges include goodwill and intangible asset impairment charges of \$1.4 million and \$2.2 million, respectively, in 2018 related to the exits of Denmark and our cathodic protection activities in the Middle East, but exclude long-lived asset impairment charges of \$86.4 million in 2017 for the Fyfe reporting unit noted below (see Notes 1 and 4 to the consolidated financial statements contained in this Report).

Impairment of Assets Held for Sale – During 2019, we recorded a pre-tax loss on assets held for sale of \$23.4 million (\$23.4 million post-tax) based on our expectation of fair value less cost to sell. Charges impacted the Infrastructure Solutions and Corrosion Protection reportable segments as well as Corporate.

Warranty Reserve – In 2019, we recorded a pre-tax estimated project warranty reserve of \$4.4 million (\$3.3 million post-tax) related to a CIPP wastewater project in our North American operation of Infrastructure Solutions. The project was originally awarded in 2016 and construction was substantially completed during 2017. Recent inspections of the installed liners revealed structural failures due to extreme environmental conditions at the time of the installation. Replacement work was performed during 2019 and early 2020 to remediate the warranty issues.

Acquisition and Divestiture Expenses – We recorded pre-tax expenses of \$3.4 million (\$2.7 million post-tax), \$7.0 million (\$5.2 million post-tax) and \$3.1 million (\$2.0 million post-tax) during 2019, 2018 and 2017, respectively, related to our acquisition and divestiture activity.

Divestiture – The sale of our pipe coating and insulation businesses in Louisiana resulted in a pre-tax loss of \$7.0 million (\$5.2 million post-tax) in 2018. The loss is included in “Other expense” in the Consolidated Statements of Operations (see Note 1 to the consolidated financial statements contained in this Report).

Impairment of Goodwill – We recorded pre-tax, non-cash goodwill impairment charges of \$45.4 million (\$42.2 million post-tax) during 2017 as a result of exiting all non-pipe related contract applications for the Tyfo® system in North America. See Note 2 to the consolidated financial statements contained in this Report.

Impairment of Long-Lived Assets – During 2017, we recorded pre-tax, non-cash long-lived asset impairment charges of \$41.0 million (\$36.4 million post-tax) related to customer relationships, trademarks and patents associated with the Fyfe North America asset group. See Note 2 to the consolidated financial statements contained in this Report.

Operating Results

(dollars in thousands)

	Years Ended December 31,			2019 vs 2018		2018 vs 2017	
	2019	2018	2017	Increase (Decrease)		Increase (Decrease)	
				\$	%	\$	%
Revenues	\$1,213,935	\$1,333,568	\$1,359,019	\$(119,633)	(9.0)%	\$ (25,451)	(1.9)%
Gross profit	246,235	266,926	284,812	(20,691)	(7.8)%	(17,886)	(6.3)%
Gross profit margin	20.3%	20.0%	21.0%	N/A	30bp	N/A	(100)bp
Operating expenses	199,430	219,823	226,173	(20,393)	(9.3)%	(6,350)	(2.8)%
Goodwill impairment	—	1,389	45,390	(1,389)	N/M	(44,001)	(96.9)%
Definite-lived intangible asset	—	2,169	41,032	(2,169)	N/M	(38,863)	(94.7)%
Impairment of assets held for sale	23,427	—	—	23,427	N/M	—	N/M
Acquisition and divestiture expenses	3,375	7,004	2,923	(3,629)	(51.8)%	4,081	139.6%
Restructuring and related charges	9,030	6,894	12,814	2,136	31.0%	(5,920)	(46.2)%
Operating income (loss)	10,973	29,647	(43,520)	(18,674)	(63.0)%	73,167	(168.1)%
Operating margin	0.9%	2.2%	(3.2)%	N/A	(130)bp	N/A	540bp
Net income (loss) attributable to Aegion	(20,892)	2,928	(69,401)	(23,820)	(813.5)%	72,329	(104.2)%

“N/A” represents not applicable.

“N/M” represents not meaningful.

2019 Compared to 2018

Revenues

Revenues decreased \$119.6 million, or 9.0%, to \$1,213.9 million in 2019 compared to \$1,333.6 million in 2018. The decrease in revenues was due to: (i) a \$98.7 million decrease in Corrosion Protection, driven by the sale of our pipe coating and insulation operation in 2018 and lower revenues in our Middle East coating services operation due to the absence of large coatings projects in 2019; (ii) a \$13.3 million decrease in Infrastructure Solutions from lower international revenues from our CIPP contracting installation services operations as we exit certain international markets and decreased Fusible PVC[®] project activity; and (iii) a \$7.7 million decrease in Energy Services mainly due to lower turnaround and construction services activities.

Gross Profit and Gross Profit Margin

Gross profit decreased \$20.7 million, or 7.8%, to \$246.2 million in 2019 compared to \$266.9 million in 2018. Included in gross profit are the following items: (i) restructuring charges of \$2.3 million and \$1.9 million in 2019 and 2018, respectively, related primarily to inventory write offs; (ii) a \$4.4 million charge in 2019 for estimated project warranty costs related to a CIPP contracting installation project in our North American operation of Infrastructure Solutions; and (iii) non-cash charges of \$2.8 million in 2018 related to estimates for inventory obsolescence in our cathodic protection operation of Corrosion Protection. Excluding these charges, gross profit decreased \$18.6 million, or 6.8%, to \$253.0 million in 2019 compared to \$271.6 million in 2018. The decrease in gross profit was primarily due to: (i) a \$33.6 million decrease in Corrosion Protection driven by decreased gross profits from our divested pipe coating and insulation operation and lower gross profit from our Middle East coating services operation; and (ii) a \$0.3 million decrease in Energy Services due mainly from the lower revenues noted above. Partially offsetting the decreases in gross profit was an increase of \$15.3 million in Infrastructure Solutions primarily due to improved productivity in CIPP contracting installation services activity in our North American operation and loss avoidance from the divestiture of Denmark in 2018.

Gross profit margin improved 30 basis points to 20.3% in 2019 compared to 20.0% in 2018. Excluding restructuring charges, project warranty costs and inventory obsolescence charges noted above, gross profit margin improved 40 basis points to 20.8% in 2019 from 20.4% in 2018. The increase was primarily due to: (i) the improvements noted in Infrastructure Solutions above; and (ii) an increase in Energy Services from improved project performance on turnaround services activities and the elimination of cost overruns and project performance issues on a large lump-sum construction services project in 2018.

Operating Expenses

Operating expenses decreased \$20.4 million, or 9.3%, to \$199.4 million in 2019 compared to \$219.8 million in 2018. Included within operating expenses are restructuring charges of \$10.7 million and \$13.2 million in 2019 and 2018, respectively. Excluding these charges, operating expenses decreased \$18.0 million, or 8.7%, to \$188.6 million in 2019 compared to \$206.6 million in 2018. The decrease in operating expenses was primarily due to: (i) a \$9.6 million decrease in Corrosion Protection mainly due to our divested pipe coating and insulation operation and cost savings achieved in connection with our restructuring actions; (ii) a \$3.5 million decrease in Infrastructure Solutions from exiting CIPP contracting installation services in certain international locations in Europe and Asia, and achieved cost savings in North America; (iii) a \$1.8 million decrease in Energy Services primarily due to lower variable costs associated with decreased turnaround and construction activity as well as higher prior year costs to support the labor transitions of our refinery personnel to the comply with labor laws in California; and (iv) a \$3.2 million decrease in Corporate expenses from reduced spending and lower medical and prescription drug expenses as a result of improved claims history and changes to the structure of our medical plan to reduce costs.

Operating expenses as a percentage of revenues were 16.4% and 16.5% in 2019 and 2018, respectively. Excluding restructuring charges, operating expenses as a percentage of revenues were 15.5% in both years.

Consolidated Net Income (Loss)

Consolidated net income (loss) decreased \$23.8 million to a loss of \$20.9 million in 2019 from income of \$2.9 million in 2018. Included in consolidated net income (loss) were the following pre-tax items: (i) restructuring charges of \$32.3 million and \$25.9 million in 2019 and 2018, respectively, related to employee severance, retention, extension of benefits, employee assistance programs, early lease and contract termination costs, wind-down costs, release of cumulative currency translation adjustments and other restructuring costs; (ii) goodwill impairment charges of \$1.4 million in 2018; (iii) definite-lived intangible asset impairment charges of \$2.2 million in 2018; (iv) impairment charges of \$23.4 million related to assets held for sale in 2019; (v) acquisition and divestiture expenses of \$3.4 million and \$7.0 million in 2019 and 2018, respectively; (vi) warranty reserve charges of \$4.4 million related to a project in Infrastructure Solutions in 2019; (vii) a \$2.8 million charge related to estimates for inventory obsolescence in Corrosion Protection in 2018; (viii) credit facility amendment fees of \$2.2 million in 2018; and (ix) a loss on the sale of business of \$7.0 million in 2018.

Excluding the after-tax effect of the above items, consolidated net income decreased \$0.8 million, or 2.1%, to \$38.4 million in 2019 from \$39.2 million in 2018. This decrease was due to lower operating income in Corrosion Protection due to: (i) our divested pipe coating and insulation operation; (ii) lower contributions from the high-margin, large projects in our Middle East coating services operation in 2018; and (iii) lower revenues and gross profit associated with our North American cathodic protection operations in 2019. Partially offsetting the decrease in consolidated net income was: (i) increased contributions from Infrastructure Solutions related to higher profitability from our North American CIPP operation and loss avoidance from the Denmark sale in 2018; (ii) increased maintenance service activities and an improved mix of higher margin services at Energy Services; (iii) decreased spending at Corporate; and (iv) a lower effective income tax rate due to positive return-to-provision true-ups in 2019 primarily related to foreign tax credits applied to the mandatory deemed repatriation from the TCJA. Consolidated net income in 2019, as compared to 2018, was also positively impacted by lower interest expense due to lower debt balances, but was negatively impacted by higher non-controlling interest income in 2019 and income of \$1.3 million related to the release of a long-term retirement obligation in 2018.

2018 Compared to 2017

Revenues

Revenues decreased \$25.5 million, or 1.9%, to \$1,333.6 million in 2018 compared to record revenues of \$1,359.0 million in 2017. The decrease in revenues was due to a \$62.4 million decrease in Corrosion Protection, driven by a \$90.8 million decrease in revenues at our pipe coating and insulation operation, which completed a large deepwater project in 2017 and was sold during the third quarter of 2018. Also contributing to the decrease was an \$8.0 million decrease in Infrastructure Solutions primarily as a result of lower CIPP contracting installation services activities in our North American and European operations. Partially offsetting these decreases was a \$45.0 million increase in Energy Services mainly due to an increase in construction services activities and the successful completion of labor transitions at refineries to comply with labor laws in California.

Gross Profit and Gross Profit Margin

Gross profit decreased \$17.9 million, or 6.3%, to \$266.9 million in 2018 compared to \$284.8 million in 2017. Included in gross profit are the following items: (i) restructuring charges of \$1.9 million and \$0.2 million in 2018 and 2017, respectively, related primarily to inventory write offs; and (ii) non-cash charges of \$2.8 million in 2018 related to estimates for inventory obsolescence in our cathodic protection operations. Excluding these charges, gross profit decreased \$13.4 million, or 4.7%, to \$271.6 million in 2018 compared to \$285.0 million in 2017. The decrease in gross profit was primarily due to: (i) a \$11.9 million decrease in Corrosion Protection driven by a decrease in margins from our pipe coating and insulation operation, which completed a large offshore project in 2017 and was sold during the third quarter of 2018, partially offset by improved project performance in our U.S. cathodic protection operation and Middle East coating services operation; and (ii) a decrease of \$7.3 million in Infrastructure Solutions primarily due to lower gross profit generated from CIPP contracting installation services activity in our North American operation and project performance issues in our European CIPP operations, most notably in Denmark and the Netherlands. Offsetting the decreases was a \$5.8 million increase in Energy Services generated primarily from increased revenues and activity from maintenance and construction services.

Gross profit margin declined 100 basis points to 20.0% in 2018 compared to 21.0% in 2017. Excluding restructuring charges and the inventory obsolescence charge, gross profit margin decreased 60 basis points to 20.4% in 2018 compared to 21.0% in 2017. The decline was primarily due to a decrease in margins driven by our pipe coating and insulation operation in Corrosion Protection, and certain isolated project execution issues related to CIPP contracting installation services activity in our European and North American operations in Infrastructure Solutions. Offsetting the decreases was improved gross profit margin performance in Corrosion Protection, primarily related to improved project performance in our U.S. cathodic protection operation and high-margin project activities in our coating services operation, most notably in the Middle East.

Operating Expenses

Operating expenses decreased \$6.4 million, or 2.8%, to \$219.8 million in 2018 compared to \$226.2 million in 2017. Included within operating expenses are restructuring charges totaling \$13.2 million and \$11.0 million in 2018 and 2017, respectively. Excluding these charges, operating expenses decreased \$8.5 million, or 4.0%, to \$206.6 million in 2018 compared to \$215.2 million in 2017. The decrease in operating expenses was primarily due to: (i) a \$4.6 million decrease in Infrastructure Solutions primarily from exiting contracting installation services for non-pressure pipe FRP applications in our North American operation and cost savings in connection with our restructuring actions; (ii) a \$2.3 million decrease in Corrosion Protection mainly due to cost savings achieved in connection with our restructuring actions and the sale of Bayou in the third quarter of 2018; and (iii) a \$5.3 million decrease in Corporate costs primarily due to cost reduction initiatives as a result of our restructuring, lower medical and prescription drug expenses described above, and lower incentive compensation expense. Partially offsetting the decrease in operating expenses was a \$3.6 million increase in Energy Services primarily due to an increase in general and administrative expenses to support continued growth in the business and additional costs necessary to support the transition of our refinery personnel to the trade unions. Additionally, we recorded a reserve reversal for certain Brinderson pre-acquisition matters in 2017 that lessened the year-over-year decrease.

Operating expenses as a percentage of revenues were 16.5% and 16.6% in 2018 and 2017, respectively. Excluding restructuring charges, operating expenses as a percentage of revenues were 15.5% and 15.8% in 2018 and 2017, respectively.

Consolidated Net Income (Loss)

Consolidated net income (loss) improved \$72.3 million to income of \$2.9 million in 2018 from a loss of \$69.4 million in 2017. Included in consolidated net income (loss) were the following pre-tax items: (i) restructuring charges of \$25.9 million and \$24.0 million in 2018 and 2017, respectively; (ii) goodwill impairment charges of \$1.4 million and \$45.4 million in 2018 and 2017, respectively; (iii) definite-lived intangible asset impairment charges of \$2.2 million and \$41.0 million in 2018 and 2017, respectively; (iv) acquisition and divestiture expenses of \$7.0 million and \$3.1 million in 2018 and 2017, respectively; (v) a \$2.8 million charge related to estimates for inventory obsolescence in our cathodic protection operations in 2018; (vi) credit facility amendment fees of \$2.2 million in 2018; and (vii) a \$7.0 million loss on the sale of Bayou in 2018.

Excluding the after-tax effect of the above items, consolidated net income increased \$4.7 million, or 13.7%, to \$39.2 million in 2018 from \$34.4 million in 2017, primarily due to lower income taxes due to lower U.S. statutory rates, lower interest expense due to lower debt balances, reduced foreign currency transaction losses and income of \$1.3 million related to the release of a long-term retirement obligation. Partially offsetting the increases in consolidated net income was lower operating income in 2018, primarily due to decreased revenues in Corrosion Protection's pipe coating and insulation operation driven by production in 2017 on a large deepwater project and subsequent divestiture in 2018.

Contract Backlog

Contract backlog is our expectation of revenues to be generated from received, signed and uncompleted contracts, the cancellation of which is not anticipated at the time of reporting. We assume these signed contracts are funded. For government or municipal contracts, our customers generally obtain funding through local budgets or pre-approved bond financing. We have not undertaken a process to verify funding status of these contracts and, therefore, cannot reasonably estimate what portion, if any, of contracts in backlog have not been funded. However, we have little history of signed contracts being canceled due to the lack of funding. Contract backlog excludes any term contract amounts for which there are not specific and determinable work releases and projects where we have been advised that we are the low bidder, but have not formally been awarded the contract.

The following table summarizes our consolidated backlog by segment (in millions):

	2019	2018	2017
Infrastructure Solutions ⁽¹⁾	\$ 303.2	\$ 323.3	\$ 328.9
Corrosion Protection ⁽²⁾	127.0	127.9	155.7
Energy Services	228.0	218.2	207.8
Total backlog ⁽³⁾	\$ 658.2	\$ 669.4	\$ 692.4

⁽¹⁾ December 31, 2019, 2018 and 2017 included backlog from exited or to-be exited operations of \$11.1 million, \$30.7 million and \$44.3 million, respectively.

⁽²⁾ December 31, 2019, 2018 and 2017 included backlog from exited or to-be exited operations of \$2.4 million, \$11.6 million and \$43.6 million, respectively.

⁽³⁾ Total backlog for December 31, 2019, 2018 and 2017 included backlog from exited or to-be exited operations of \$13.5 million, \$42.3 million and \$87.9 million, respectively.

Included within backlog for Energy Services are amounts that represent expected revenues to be realized under long-term MSAs and other signed contracts. If the remaining term of these arrangements exceeds 12 months, the unrecognized revenues attributable to such arrangements included in backlog are limited to only the next 12 months of expected revenues. Although backlog represents only those contracts and MSAs that are considered to be firm, there can be no assurance that cancellation or scope adjustments will not occur with respect to such contracts.

Within our Infrastructure Solutions and Corrosion Protection segments, certain contracts are performed through our variable interest entities, in which we own a controlling portion of the entity. As of December 31, 2019, 20.9% of our Corrosion Protection backlog related to these variable interest entities. The backlog related to variable interest entities in Infrastructure Solutions was de minimus. A substantial majority of our contracts in these two segments are fixed price contracts with individual private businesses and municipal and federal government entities across the world. Energy Services, however, generally enters into cost reimbursable contracts that are based on costs incurred at agreed upon contractual rates.

In accordance with industry practice, substantially all of our contracts are subject to cancellation or termination at the discretion of the customer. In a situation where a customer terminates a contract, we would ordinarily be entitled to receive payment for work performed up to the date of termination and, in certain circumstances, we may be entitled to allowable termination and cancellation costs. There were no significant cancellations in 2019.

While management uses all information available to it to determine backlog, our backlog at any given time is subject to changes in the scope of services to be provided as well as increases or decreases in costs relating to the contracts included therein. Accordingly, backlog is not necessarily a reliable indicator of future revenues.

Total contract backlog decreased \$11.2 million, or 1.7%, to \$658.2 million at December 31, 2019 from \$669.4 million at December 31, 2018. The decrease in backlog was due primarily to our restructuring actions as we exit certain international markets in Infrastructure Solutions and Corrosion Protection. Excluding exited and to-be exited operations, backlog at December 31, 2019 increased \$17.6 million, or 2.8%, from December 31, 2018. The increase was due to: (i) increased activity in the North American and Middle East Corrosion Protection market; and (ii) increased market share and geographic expansion for our maintenance services activities in Energy Services. Partially offsetting these increases is the timing of awards for our coating services operation in the Middle East and market softness for our FRP contracting operations in Asia.

Consolidated customer orders, net of cancellations (“New Orders”), decreased \$110.5 million, or 8.3%, to \$1,223.3 million in 2019 compared to \$1,333.8 million in 2018. New Orders in 2017 were \$1,362.3 million.

Subject to factors discussed in Item 1A – “Risk Factors”, we estimate that approximately \$646.5 million, or 98.2%, of total backlog at December 31, 2019 will be realized as revenues in 2020.

Segment Results

Infrastructure Solutions Segment

Key financial data for Infrastructure Solutions was as follows:

(dollars in thousands)

	Years Ended December 31,			2019 vs 2018		2018 vs 2017	
	2019	2018	2017	Increase (Decrease)		Increase (Decrease)	
				\$	%	\$	%
Revenues	\$ 590,797	\$ 604,121	\$ 612,154	\$ (13,324)	(2.2)%	\$ (8,033)	(1.3)%
Gross profit	144,074	132,411	140,823	11,663	8.8%	(8,412)	(6.0)%
Gross profit margin	24.4%	21.9%	23.0%	N/A	250bp	N/A	(110)bp
Operating expenses	81,595	86,990	92,792	(5,395)	(6.2)%	(5,802)	(6.3)%
Goodwill impairment	—	1,389	45,390	(1,389)	N/M	(44,001)	(96.9)%
Definite-lived intangible asset impairment	—	870	41,032	(870)	N/M	(40,162)	(97.9)%
Impairment of assets held for sale	17,617	—	—	17,617	N/M	—	N/M
Acquisition and divestiture expenses	1,054	432	80	622	144.0%	352	440.0%
Restructuring and related charges	1,729	5,221	8,845	(3,492)	(66.9)%	(3,624)	(41.0)%
Operating income (loss)	42,079	37,509	(47,316)	4,570	12.2%	84,825	(179.3)%
Operating margin	7.1%	6.2%	(7.7)%	N/A	90bp	N/A	1390bp

“N/A” represents not applicable.

“N/M” represents not meaningful.

2019 Compared to 2018

Revenues

Revenues in Infrastructure Solutions decreased \$13.3 million, or 2.2%, to \$590.8 million in 2019 compared to \$604.1 million in 2018. Revenue from exited or to be exited operations totaled \$57.3 million and \$70.5 million in 2019 and 2018, respectively. Excluding the impact from these business exits, revenues on a same-store basis were on par for both years. Additionally, revenues increased in 2019 as compared to 2018 from increased CIPP contracting installation services activity in North America as a result of improved crew productivity, but was largely offset by decreased Fusible PVC[®] project activity in our North American operation following a strong comparable prior year.

Gross Profit and Gross Profit Margin

Gross profit in Infrastructure Solutions increased \$11.7 million, or 8.8%, to \$144.1 million in 2019 compared to \$132.4 million in 2018. Included in gross profit are the following items: (i) restructuring charges of \$0.5 million and \$1.3 million in 2019 and 2018, respectively; and (ii) a \$4.4 million charge in 2019 for estimated project warranty costs related to one CIPP contracting installation project in our North American operation. Excluding these charges, gross profit increased \$15.3 million, or 11.4%, to \$149.0 million in 2019 compared to \$133.7 million in 2018. The increase in gross profit was primarily due to improved productivity in CIPP contracting installation services activity in our North American operation and loss avoidance from the divestiture of Denmark in 2018. Partially offsetting the increases were decreased contributions from our exited international CIPP contracting installation services operations and lower revenues and resulting gross profit from Fusible PVC[®] project activity.

Gross profit margin improved 250 basis points to 24.4% in 2019 from 21.9% in 2018. Excluding restructuring charges and project warranty costs noted above, gross profit margin increased 310 basis points to 25.2% in 2019 from 22.1% in 2018. Gross profit margin increased primarily due to the same factors impacting the changes in gross profit, as noted above.

Operating Expenses

Operating expenses in Infrastructure Solutions decreased \$5.4 million, or 6.2%, to \$81.6 million in 2019 compared to \$87.0 million in 2018. As part of our restructuring efforts, we recognized charges of \$5.3 million and \$7.3 million in 2019 and 2018, respectively, related to cost reduction efforts. Excluding restructuring charges, operating expenses decreased \$3.5 million, or 4.3%, to \$76.2 million in 2019 compared to \$79.7 million in 2018. The decrease in operating expenses was primarily due to exiting CIPP contracting installation services in certain international locations in Europe and Asia, and achieved cost savings from our FRP operation in North America in connection with our restructuring actions. These decreases were partially offset by increased costs to support the growth of our North American CIPP operation.

Operating expenses as a percentage of revenues were 13.8% and 14.4% in 2019 and 2018, respectively. Excluding restructuring charges, operating expenses as a percentage of revenues were 12.9% and 13.2% in 2019 and 2018, respectively.

Operating Income and Operating Margin

Operating income in Infrastructure Solutions increased \$4.6 million, or 12.2%, to \$42.1 million in 2019 compared to \$37.5 million in 2018. Operating margin increased to 7.1% in 2019 compared to 6.2% in 2018. Included in operating income were the following items: (i) restructuring charges of \$7.5 million and \$13.8 million in 2019 and 2018, respectively, related to severance, extension of benefits, employee assistance programs, wind-down and other restructuring costs; (ii) goodwill impairment charges of \$1.4 million in 2018; (iii) definite-lived intangible asset impairment charges of \$0.9 million in 2018; (iv) impairment charges of \$17.6 million in 2019 related to assets held for sale; (v) a \$4.4 million charge in 2019 for estimated project warranty costs; and (vi) acquisition and divestiture related expenses of \$1.1 million and \$0.4 million in 2019 and 2018, respectively.

Excluding the above items, operating income increased \$18.7 million, or 34.7%, to \$72.7 million in 2019 compared to \$54.0 million in 2018 and operating margin increased 340 basis points to 12.3% in 2019 from 8.9% in 2018. Operating income and operating margin increased primarily due to: (i) improved profitability from our North American CIPP operation due to crew productivity improvements; (ii) increased revenues and achieved cost savings from our FRP operation in North America; and (iii) loss avoidance from the divestiture of Denmark in 2018. These increases were partially offset by decreased profitability from Fusible PVC[®] project activity in our North American operation.

2018 Compared to 2017

Revenues

Revenues in Infrastructure Solutions decreased \$8.0 million, or 1.3%, to \$604.1 million in 2018 compared to \$612.2 million in 2017. The decrease in revenues was primarily driven by: (i) a decrease in CIPP contracting installation services activity in North America as a result of an unfavorable mix of work performed (despite a 5% increase in installed CIPP liner footage, average revenue per foot declined nearly 8% due to a higher mix of lower-value, small-diameter projects, which negatively impacted revenues by nearly \$35 million); (ii) a decrease in FRP project activity in our North American operation, specifically associated with our exit of non-pressure pipe FRP contracting installation services activity in North America as part of our restructuring efforts; and (iii) a decrease in license royalty income from a \$3.9 million license settlement in 2017 in our North American CIPP operation. Partially offsetting the decreases in revenues was an increase in Fusible PVC[®] project activity and royalty income in our North American operation.

Gross Profit and Gross Profit Margin

Gross profit in Infrastructure Solutions decreased \$8.4 million, or 6.0%, to \$132.4 million in 2018 compared to \$140.8 million in 2017. Included in gross profit are restructuring charges of \$1.3 million and \$0.1 million in 2018 and 2017, respectively. Excluding restructuring charges, gross profit decreased \$7.3 million, or 5.2%, to \$133.7 million in 2018 compared to \$141.0 million in 2017. Gross profit decreased primarily due to lower revenues, execution issues and project write-downs related to CIPP contracting installation services activity in our North American and European operations. Additionally, severe weather negatively impacted North American CIPP productivity during the first four months of 2018 and an unfavorable project mix negatively impacted gross profit during the second half of 2018. Partially offsetting the decreases in gross profit and gross profit margin was improved execution of FRP project activity in our North American operation and CIPP project activity in our Australian operation. Additionally, gross profit and gross profit margin improvements were noted as Fusible PVC[®] project activity increased in our North American operation.

Gross profit margin declined 110 basis points to 21.9% in 2018 from 23.0% in 2017. Excluding restructuring charges, gross profit margin declined 90 basis points to 22.1% in 2018 from 23.0% in 2017. Gross profit margin declined primarily due to the same factors impacting the changes in gross profit, as noted above.

Operating Expenses

Operating expenses in Infrastructure Solutions decreased \$5.8 million, or 6.3%, to \$87.0 million in 2018 compared to \$92.8 million in 2017. As part of our restructuring efforts, we recognized charges of \$7.3 million and \$8.5 million in 2018 and 2017, respectively, related to cost reduction efforts. Excluding restructuring charges, operating expenses decreased \$4.6 million, or 5.4%, to \$79.7 million in 2018 compared to \$84.3 million in 2017. The decrease in operating expenses was primarily due to exiting contracting installation services for non-pressure pipe FRP applications in our North American operation, cost savings in connection with our restructuring actions and lower incentive compensation in our North American operation.

Operating expenses as a percentage of revenues were 14.4% and 15.2% in 2018 and 2017, respectively. Excluding restructuring charges, operating expenses as a percentage of revenues were 13.2% and 13.8% in 2018 and 2017, respectively.

Operating Income (Loss) and Operating Margin

Operating income (loss) in Infrastructure Solutions increased \$84.8 million to income of \$37.5 million in 2018 compared to a loss of \$47.3 million in 2017. Operating margin improved to 6.2% in 2018 compared to (7.7)% in 2017. Included in operating income (loss) were the following items: (i) goodwill impairment charges of \$1.4 million and \$45.4 million in 2018 and 2017, respectively; (ii) definite-lived intangible asset impairment charges of \$0.9 million and \$41.0 million in 2018 and 2017, respectively; (iii) restructuring charges of \$13.8 million and \$17.5 million in 2018 and 2017, respectively, primarily related to severance, extension of benefits, employee assistance programs, wind-down and other restructuring costs; and (iv) acquisition and divestiture related expenses of \$0.4 million and \$0.1 million in 2018 and 2017.

Excluding the above items, operating income decreased \$2.7 million, or 4.8%, to \$54.0 million in 2018 compared to \$56.7 million in 2017 and operating margin declined 40 basis points to 8.9% in 2018 from 9.3% in 2017. Operating income and operating margin decreased primarily due to: (i) severe weather that negatively impacted productivity in our North American CIPP contracting operation during the first four months of 2018; (ii) a \$3.9 million favorable license royalty settlement in 2017; (iii) certain isolated project execution issues related to CIPP contracting installation services activity in our European and North American operations; and (iv) increasing labor, fuel and chemical costs in our North America operation. Offsetting these decreases were increases in operating income primarily due to higher revenues and profitability from Fusible PVC[®] project activity in our North American operation and cost savings in our North American FRP operation in connection with our restructuring actions.

Corrosion Protection Segment

Key financial data for Corrosion Protection was as follows:

(dollars in thousands)	Years Ended December 31,			2019 vs 2018		2018 vs 2017	
	2019	2018	2017	Increase (Decrease)		Increase (Decrease)	
				\$	%	\$	%
Revenues	\$ 295,090	\$ 393,740	\$ 456,139	\$ (98,650)	(25.1)%	\$ (62,399)	(13.7)%
Gross profit	60,927	92,968	108,240	(32,041)	(34.5)%	(15,272)	(14.1)%
Gross profit margin	20.6%	23.6%	23.7%	N/A	(300)bp	N/A	(10)bp
Operating expenses	58,808	71,799	71,038	(12,991)	(18.1)%	761	1.1%
Definite-lived intangible asset impairment	—	1,299	—	(1,299)	N/M	1,299	N/M
Impairment of assets held for sale	2,950	—	—	2,950	N/M	—	N/M
Acquisition and divestiture expenses	128	2,468	1,642	(2,340)	(94.8)%	826	50.3%
Restructuring and related charges	4,676	1,119	3,338	3,557	317.9%	(2,219)	(66.5)%
Operating income (loss)	(5,635)	16,283	32,222	(21,918)	(134.6)%	(15,939)	(49.5)%
Operating margin	(1.9)%	4.1%	7.1%	N/A	(600)bp	N/A	(300)bp

“N/A” represents not applicable.

“N/M” represents not meaningful.

2019 Compared to 2018

Revenues

Revenues in Corrosion Protection decreased \$98.7 million, or 25.1%, to \$295.1 million in 2019 compared to \$393.7 million in 2018. The decrease was primarily due to: (i) a \$26.3 million decrease in revenues related to our pipe coating and insulation operation, which was divested in the third quarter of 2018; (ii) decreased revenue from our coating services operation, which benefited in 2018 from large project activity in the Middle East; (iii) decreased project activities in our North American cathodic protection operations, primarily in Canada; and (iv) decreased international revenues from certain industrial linings and cathodic protection operations as we exit or divest non-core operations as part of our restructuring efforts. Partially offsetting the decreases in revenues was an improvement in U.S. and Middle East revenues in our industrial linings operations.

Gross Profit and Gross Profit Margin

Gross profit in Corrosion Protection decreased \$32.0 million, or 34.5%, to \$60.9 million in 2019 compared to \$93.0 million in 2018. Included in gross profit are the following items: (i) restructuring charges of \$1.9 million and \$0.6 million in 2019 and 2018, respectively; and (ii) non-cash charges of \$2.8 million in 2018 related to estimates for inventory obsolescence in our cathodic protection operations. Excluding these charges, gross profit decreased \$33.6 million, or 34.8%, to \$62.8 million in 2019 compared to \$96.4 million in 2018. The decrease in gross profit was primarily due to (i) a \$5.0 million decrease in gross profit related to our divested pipe coating and insulation operation; (ii) lower revenues and gross margins associated with our coating services operation, most notably in the Middle East, as larger projects contributing to the prior year results were completed; (iii) lower gross profit associated with our U.S. cathodic protection operations, which experienced lower revenues, project delays and other inefficiencies; and (iv) decreased gross profit from certain international industrial linings and cathodic protection operations as we exit or divest non-core operations as part of our restructuring efforts. Gross profit was also negatively impacted by lower revenues from our Canadian cathodic protection operations, as noted above, but was partially offset by increased revenues and strong operational performance from the U.S. and Middle East industrial linings operations.

Gross profit margin declined 300 basis points to 20.6% in 2019 from 23.6% in 2018. Excluding restructuring charges and the inventory obsolescence charge, gross profit margin decreased 320 basis points to 21.3% in 2019 compared to 24.5% in 2018. This decrease was primarily due to lower margins generated from our Middle East coating services operation, our U.S. cathodic protection operation and certain international industrial linings and cathodic protection operations being exited as part of our restructuring efforts, as noted above.

Operating Expenses

Operating expenses in Corrosion Protection decreased \$13.0 million, or 18.1%, to \$58.8 million in 2019 compared to \$71.8 million in 2018. As a part of our restructuring efforts, we recognized charges of \$1.1 million and \$4.5 million in 2019 and 2018, respectively. Excluding restructuring charges, operating expenses decreased \$9.6 million, or 14.2%, to \$57.7 million in 2019 compared to \$67.3 million in 2018. The decrease in operating expenses was primarily due to: (i) a \$3.9 million decrease related to

our divested pipe coating and insulation operation; (ii) cost savings achieved in connection with our restructuring actions; and (iii) lower incentive compensation expense.

Operating expenses as a percentage of revenues were 19.9% and 18.2% in 2019 and 2018, respectively. Excluding restructuring charges, operating expenses as a percentage of revenues were 19.5% and 17.1% in 2019 and 2018, respectively. The increase from 2018 to 2019, as a percentage of revenues, was primarily driven by the lower revenues generated from our coating services operation in 2019, as noted above.

Operating Income (Loss) and Operating Margin

Operating income (loss) in Corrosion Protection decreased \$21.9 million to a loss of \$5.6 million in 2019 compared to \$16.3 million of income in 2018. Operating margin declined 560 basis points to (1.9)% in 2019 compared to 4.1% in 2018. Included in operating income (loss) were the following items: (i) restructuring charges of \$7.7 million and \$7.6 million in 2019 and 2018, respectively, related to employee severance, retention, extension of benefits, employee assistance programs, early lease termination, wind-down and other restructuring costs; (ii) acquisition and divestiture related expenses of \$0.1 million and \$2.5 million in 2019 and 2018, respectively, primarily related to the sale of our pipe coating and insulation operation; (iii) impairment charges of \$3.0 million in 2019 related to assets held for sale; and (iv) a \$2.8 million non-cash charge related to estimates for inventory obsolescence in 2018.

Excluding the above items, operating income decreased \$24.0 million, or 82.4%, to \$5.1 million in 2019 compared to \$29.1 million in 2018 and operating margin declined 570 basis points to 1.7% in 2019 from 7.4% in 2018. The decreases in operating income and operating margin were substantially the result of: (i) lower revenues and related gross profit generated from our coating services operation in the Middle East; (ii) lower revenues and decreased project performance in our North American cathodic protection operations; (iii) decreased contributions from certain international industrial linings and cathodic protection operations as we exit or divest non-core operations as part of our restructuring efforts; and (iv) a \$1.0 million decrease in operating income related to our divested pipe coating and insulation operation. These decreases were partially offset by increased revenues and strong operational performance from the U.S. and Middle East industrial linings operations.

2018 Compared to 2017

Revenues

Revenues in Corrosion Protection decreased \$62.4 million, or 13.7%, to \$393.7 million in 2018 compared to \$456.1 million in 2017. The decrease was primarily due to a \$90.8 million decrease in revenues in our pipe coating and insulation operation driven by production on a large deepwater project in 2017 and the operation's subsequent divestiture in the third quarter of 2018. Also contributing to the decrease in revenues was a decrease in project activities in our cathodic protection operation in North America and our industrial linings operation in South America. Partially offsetting the decreases in revenues was an increase in revenues in our coating services operation, which benefited from increased project activity in the Middle East and its field services operation in North America.

Gross Profit and Gross Profit Margin

Gross profit in Corrosion Protection decreased \$15.3 million, or 14.1%, to \$93.0 million in 2018 compared to \$108.2 million in 2017. Included in gross profit are the following items: (i) restructuring charges of \$0.6 million in 2018 related to write offs of other assets; and (ii) non-cash charges of \$2.8 million in 2018 related to estimates for inventory obsolescence in our cathodic protection operations. Excluding these charges, gross profit decreased \$11.9 million, or 11.0%, to \$96.4 million in 2018 compared to 2017. The decrease in gross profit was substantially due to our pipe coating and insulation operation related to the reduced revenues as described above, partially offset by project activities in our Middle East coating services operation.

Gross profit margin declined 10 basis points to 23.6% in 2018 from 23.7% in 2017. Excluding restructuring charges and the inventory obsolescence charge, gross profit margin improved 80 basis points to 24.5% in 2018 compared to 2017. The gross profit margin improvement was driven by high-margin project activities in our coating services operation, most notably in the Middle East, and improved project performance in our U.S. cathodic protection operation.

Operating Expenses

Operating expenses in Corrosion Protection increased \$0.8 million, or 1.1%, to \$71.8 million in 2018 compared to \$71.0 million in 2017. As a part of our restructuring efforts, we recognized charges of \$4.5 million and \$1.5 million in 2018 and 2017, respectively. Excluding these restructuring charges, operating expenses decreased \$2.3 million, or 3.3%, to \$67.2 million in 2018 compared to \$69.5 million in 2017. Operating expenses decreased primarily due to cost savings achieved in connection with our restructuring actions and lower incentive compensation expense.

Operating expenses as a percentage of revenues were 18.2% and 15.6% in 2018 and 2017, respectively. Excluding restructuring charges, as noted above, operating expenses as a percentage of revenues were 17.1% and 15.2% in 2018 and 2017, respectively, and driven primarily by lower revenues generated from our pipe coating and insulation operation in 2018.

Operating Income and Operating Margin

Operating income in Corrosion Protection decreased \$15.9 million, or 49.5%, to \$16.3 million in 2018 compared to \$32.2 million in 2017. Operating margin declined 300 basis points to 4.1% in 2018 compared to 7.1% in 2017. Included in operating income were the following items: (i) restructuring charges of \$7.6 million and \$4.9 million in 2018 and 2017, respectively, related to employee severance, retention, extension of benefits, employee assistance programs, early lease termination, wind-down and other restructuring costs; (ii) a \$2.8 million non-cash charge related to estimates for inventory obsolescence in 2018; and (iii) acquisition and divestiture related expenses of \$2.5 million and \$1.6 million in 2018 and 2017, respectively, primarily related to the sale of our pipe coating and insulation operation.

Excluding the above items, operating income decreased \$9.6 million, or 24.8%, to \$29.1 million in 2018 compared to \$38.7 million in 2017 and operating margin declined 110 basis points to 7.4% in 2018 from 8.5% in 2017. The decreases in operating income and operating margin were primarily the result of lower revenues and related gross profit in our pipe coating and insulation operation driven by production on a large deepwater project in 2017 and the operation's subsequent divestiture in 2018. Partially offsetting the decreases in operating income and operating margin were increases generated from our coating service operation in the Middle East and our U.S. cathodic protection operation, as well as reduced operating expenses as described above.

Energy Services Segment

Key financial data for Energy Services was as follows:

(dollars in thousands)

	Years Ended December 31,			2019 vs 2018		2018 vs 2017	
	2019	2018	2017	Increase (Decrease)		Increase (Decrease)	
				\$	%	\$	%
Revenues	\$ 328,048	\$ 335,707	\$ 290,726	\$ (7,659)	(2.3)%	\$ 44,981	15.5%
Gross profit	41,234	41,547	35,749	(313)	(0.8)%	5,798	16.2%
Gross profit margin	12.6%	12.4%	12.3%	N/A	20bp	N/A	10bp
Operating expenses	30,652	31,675	28,013	(1,023)	(3.2)%	3,662	13.1%
Restructuring and related charges	842	234	—	608	259.8%	234	N/M
Operating income	9,740	9,638	7,736	102	1.1%	1,902	24.6%
Operating margin	3.0%	2.9%	2.7%	N/A	10bp	N/A	20bp

"N/A" represents not applicable.

"N/M" represents not meaningful.

2019 Compared to 2018

Revenues

Revenues in Energy Services decreased \$7.7 million, or 2.3%, to \$328.0 million in 2019 compared to \$335.7 million in 2018. The decrease was primarily due to expected lower turnaround and construction activities compared to the record revenues achieved in 2018. These decreases were partially offset by a higher volume of maintenance services activity and increased labor rates at refineries that were transitioned in 2018 to comply with California labor laws.

Gross Profit and Gross Profit Margin

Gross profit in Energy Services decreased \$0.3 million, or 0.8%, to \$41.2 million in 2019 compared to \$41.5 million in 2018. The decrease in gross profit was primarily due to the lower turnaround and construction activities, as noted above, partially offset by higher revenues associated with maintenance services activities.

Gross profit margin improved 20 basis points to 12.6% in 2019 compared to 12.4% in 2018 primarily due to improved project performance on turnaround services activities and the elimination of cost overruns and project performance issues on a large lump-sum construction services project in 2018.

Operating Expenses

Operating expenses in Energy Services decreased \$1.0 million, or 3.2%, to \$30.7 million in 2019 compared to \$31.7 million in 2018. As part of our restructuring efforts, we recognized charges of \$0.8 million in 2019 primarily related to professional fees associated with right-sizing our operation. Excluding restructuring charges, operating expenses decreased \$1.8 million, or 5.7%. The decrease was primarily due to lower variable costs associated with decreased turnaround and construction activity as well as higher prior year costs to support the labor transitions at refineries to comply with labor laws in California.

Operating expenses as a percentage of revenues were 9.3% and 9.4% in 2019 and 2018, respectively. Excluding restructuring charges noted above, operating expenses as a percentage of revenues were 9.1% and 9.4% in 2019 and 2018, respectively.

Operating Income and Operating Margin

Operating income in Energy Services increased \$0.1 million, or 1.1%, to \$9.7 million in 2019 compared \$9.6 million in 2018. Operating margin improved 10 basis points to 3.0% in 2019 from 2.9% in 2018. Included in operating income were restructuring charges of \$1.7 million in 2019 and \$0.3 million in 2018 primarily related to severance, retention, extension of benefits, employee assistance programs, professional fees and other restructuring costs.

Excluding restructuring charges, operating income increased \$1.5 million, or 15.2%, to \$11.4 million in 2019 compared to \$9.9 million in 2018 and operating margin improved 60 basis points to 3.5% in 2019 compared to 2.9% in 2018. These increases in operating income and operating margin were driven by increased maintenance services activities, improved gross profit margins and lower operating expenses, as discussed above.

2018 Compared to 2017

Revenues

Revenues in Energy Services increased \$45.0 million, or 15.5%, to \$335.7 million in 2018 compared to \$290.7 million in 2017. The increase was primarily due to higher volume associated with construction services activity and increased maintenance services activities. These increases were the result of increased demand from existing customers and successful completion of several labor transitions at refineries to comply with labor laws in California.

Gross Profit and Gross Profit Margin

Gross profit in Energy Services increased \$5.8 million, or 16.2%, to \$41.5 million in 2018 compared to \$35.7 million in 2017. The increase in gross profit was primarily due to an increase in revenues, mostly driven by maintenance and construction services activity, and completion of labor transitions at refineries, as noted above. Gross profit margin improved 10 basis points to 12.4% in 2018 compared to 12.3% in 2017.

Operating Expenses

Operating expenses in Energy Services increased \$3.7 million, or 13.1%, to \$31.7 million in 2018 compared to \$28.0 million in 2017 primarily due to an increase in general and administrative expenses to support continued growth in the business and additional costs necessary to support the transition of our refinery personnel to the trade unions. Additionally, 2017 included a \$1.5 million reserve reversal for certain Brinderson pre-acquisition matters. Operating expenses as a percentage of revenues were 9.4% and 9.6% in 2018 and 2017, respectively.

Operating Income and Operating Margin

Operating income in Energy Services increased \$1.9 million, or 24.6%, to \$9.6 million in 2018 compared to \$7.7 million in 2017. Operating margin improved 20 basis points to 2.9% in 2018 from 2.7% in 2017. Included in operating income were restructuring charges of \$0.3 million in 2018 primarily related to severance, extension of benefits, employee assistance programs and other restructuring costs.

Excluding restructuring charges, operating income increased \$2.2 million, or 28.0%, to \$9.9 million in 2018 compared to \$7.7 million in 2017 and operating margin declined 20 basis points to 2.9% in 2018 compared to 2.7% in 2017. These increases were primarily due to increased revenues and gross profit contributions from maintenance services activities as a result of increased demand from existing customers, partially offset by decreased gross profit contributions associated with higher-margin turnaround services activities; (ii) project performance execution issues on a large lump-sum construction services project; and (iii) increased operating expenses from investments to support the business and a reserve reversal for certain Brinderson pre-acquisition matters in 2017.

Corporate

Key financial data for Corporate was as follows:

(dollars in thousands)

	Years Ended December 31,			2019 vs 2018		2018 vs 2017	
	2019	2018	2017	Increase (Decrease)		Increase (Decrease)	
				\$	%	\$	%
Revenues	\$ —	\$ —	\$ —	\$ —	—	\$ —	—
Gross profit	—	—	—	—	—	—	—
Gross profit margin	—	—	—	—	—	—	—
Operating expenses	28,375	29,359	34,330	(984)	(3.4)%	(4,971)	(14.5)%
Impairment of assets held for sale	2,860	—	—	2,860	N/M	—	N/M
Acquisition and divestiture expenses	2,193	4,104	1,201	(1,911)	(46.6)%	2,903	241.7%
Restructuring and related charges	1,783	320	631	1,463	457.2%	(311)	(49.3)%
Operating loss	(35,211)	(33,783)	(36,162)	(1,428)	4.2%	2,379	(6.6)%
Operating margin	N/A	N/A	N/A	N/A	N/A	N/A	N/A

“N/A” represents not applicable.

“N/M” represents not meaningful.

2019 Compared to 2018

Operating Expenses

Operating expenses in 2019 decreased \$1.0 million, or 3.4% compared to 2018. As part of our restructuring efforts, we recognized charges of \$3.4 million and \$1.3 million in 2019 and 2018, respectively. Excluding restructuring charges, operating expenses decreased \$3.2 million, or 11.3% in 2019 compared to 2018. The decrease in operating expenses was primarily due to reduced spending and other cost reduction initiatives as a result of the Restructuring and lower medical and prescription drug expenses as a result of improved claims history and changes to the structure of our medical plan to reduce costs. Partially offsetting those decreases was higher incentive compensation expense. Corporate operating expenses as a percentage of consolidated revenues were 2.3% and 2.2% in 2019 and 2018, respectively. Excluding restructuring charges, operating expenses as a percentage of revenues were 2.0% in 2019 compared to 2.1% in 2018.

Operating Loss

Operating loss in Corporate increased \$1.4 million, or 4.2%, to \$35.2 million in 2019 compared to \$33.8 million in 2018. Included in operating loss were the following items: (i) restructuring charges of \$5.2 million and \$1.6 million in 2019 and 2018, respectively, related to severance, extension of benefits, employee assistance programs, wind-down and other restructuring costs; (ii) impairment charges of \$2.9 million in 2019 related to assets held for sale; and (iii) acquisition and divestiture related expenses of \$2.2 million in 2019 related primarily to expenses incurred in connection with the divestitures in Europe and Australia, and \$4.1 million in 2018 related primarily to expenses incurred in connection with the divestiture of Bayou.

Excluding the above items, operating loss decreased \$3.2 million, or 11.3%, to \$24.9 million in 2019 compared to \$28.0 million in 2018. Operating loss decreased due to the same factors impacting the changes in operating expenses above.

2018 Compared to 2017

Operating Expenses

Operating expenses in 2018 decreased \$5.0 million, or 14.5% compared to 2017. As part of our restructuring efforts, we recognized charges of \$1.3 million and \$1.0 million in 2018 and 2017, respectively. Excluding restructuring charges, operating expenses decreased \$5.3 million, or 15.9%, in 2018 compared to 2017. The decrease in operating expenses was primarily due to reduced spending and other cost reduction initiatives as a result of the Restructuring, lower medical and prescription drug expenses described above, lower incentive compensation expense and the exclusion of certain isolated charges from 2017 related to executive severance and professional fees for changes in accounting standards. Corporate operating expenses as a percentage of consolidated revenues were 2.2% and 2.5% in 2018 and 2017, respectively. Excluding restructuring charges, operating expenses as a percentage of revenues were 2.1% in 2018 compared to 2.5% in 2017.

Operating Loss

Operating loss in Corporate decreased \$2.4 million, or 6.6%, to \$33.8 million in 2018 compared to \$36.2 million in 2017. Included in operating loss were the following items: (i) restructuring charges of \$1.6 million in both 2019 and 2018 related to severance, extension of benefits, employee assistance programs, wind-down and other restructuring costs; (ii) acquisition and divestiture related expenses of \$4.1 million in 2018, related primarily to expenses incurred in connection with the divestiture of Bayou, and \$1.2 million in 2017 related primarily to expenses incurred in connection with the acquisition of Environmental Techniques and the divestiture of Bayou.

Excluding the above items, operating loss decreased \$5.3 million, or 15.9%, to \$28.0 million in 2018 compared to \$33.3 million in 2017. Operating loss decreased due to the same factors impacting the changes in operating expenses above.

Other Income (Expense)

Interest Income and Expense

Interest income increased \$0.5 million in 2019 compared to 2018 primarily due to interest received on the \$8.0 million note receivable acquired in the Bayou sale during the third quarter of 2018. Interest expense decreased \$3.3 million in 2019 to \$14.0 million compared to \$17.3 million in 2018. During 2018, we recognized expenses of \$2.2 million related to certain arrangement and other fees associated with amending our credit facility as well as the write-off of previously unamortized deferred financing costs. Both charges were recorded to "Interest expense" in the Consolidated Statement of Operations. Excluding these expenses, interest expense decreased \$1.1 million in 2019 as compared to 2018 due to reduced loan principal balances.

Interest income increased \$0.4 million in 2018 compared to 2017 primarily due to interest received on the note receivable mentioned above. Interest expense increased by \$1.3 million to \$17.3 million in 2018 compared to \$16.0 million in 2017. During 2018, we recognized expenses of \$2.2 million related to fees and deferred financing costs associated with amending our credit facility, as discussed above. Excluding these charges, interest expense decreased by \$0.9 million in 2018 as compared to 2017 due to reduced loan principal balances, partially offset by higher LIBOR-based borrowing costs under our amended Credit Facility.

Other Income (Expense)

Other expense was \$10.9 million in 2019, which included: (i) charges of \$10.2 million related to the dissolution of certain restructured entities including the release of cumulative currency translation adjustments resulting from those disposals; and (ii) foreign currency transaction losses.

Other expense was \$9.9 million in 2018, which included: (i) charges of \$7.0 million related to the loss on sale of our pipe coating and insulation businesses in Louisiana; (ii) charges of \$4.0 million related to the dissolution of certain restructured entities including the release of cumulative currency translation adjustments resulting from those disposals; and (iii) foreign currency transaction losses. Partially offsetting the charges was income of \$1.3 million related to the release of a long-term retirement obligation.

Other expense was \$2.2 million in 2017 and primarily consisted of foreign currency transaction losses.

Taxes on Income (Loss)

On December 22, 2017, the U.S. government enacted the TCJA. The TCJA includes significant changes to the U.S. corporate income tax system including: (i) a federal corporate rate reduction from 35% to 21%; (ii) limitations on the deductibility of interest expense and executive compensation; (iii) creation of new minimum taxes such as the Global Intangible Low Taxed Income ("GILTI") tax and the base erosion anti-abuse tax ("BEAT"); and (iv) the transition of U.S. international taxation from a worldwide tax system to a modified territorial tax system, which resulted in a one-time U.S. tax liability on those earnings that had not previously been repatriated to the U.S. Beginning in 2018, we no longer record U.S. federal income tax on our share of income from foreign subsidiaries and no longer record a benefit for foreign tax credits related to that income.

Tax expense on the pre-tax loss in 2019 was \$6.6 million compared to a \$0.1 million tax benefit on pre-tax income in 2018. Our effective tax rate was negative 50.9% on a pre-tax loss in 2019 compared to negative 4.5% on pre-tax income in 2018. The effective tax rate for 2019 was unfavorably impacted by: (i) significant pre-tax charges primarily related to impairments of held for sale assets and the release of cumulative currency translation adjustments, which were not deductible for tax purposes; and (ii) valuation allowances recorded on certain net operating losses and deferred tax assets in domestic and foreign jurisdictions where we are unlikely to recognize these benefits. Partially offsetting the negative factors was a \$1.7 million of return-to-provision true-up primarily related to foreign tax credits applied to the mandatory deemed repatriation from the TCJA.

Taxes on income (loss) decreased \$5.1 million to a benefit of \$0.1 million in 2018 compared to \$5.0 million in 2017. Our effective tax rate was negative 4.5% and negative 8.1% in 2018 and 2017, respectively. The effective tax rate in 2018 was positively impacted by: (i) a \$1.9 million adjustment to the mandatory deemed repatriation tax on foreign earnings; and (ii) a \$1.5 million discrete item related to employee share-based awards that vested during 2018. Together, the adjustment to the repatriation tax and the discrete item had a 114.6% benefit to the effective tax rate during 2018. Partially offsetting the benefits were valuation allowances recorded on certain net operating losses in foreign jurisdictions for which no income tax benefit can be recognized.

The effective tax rate in 2017 was unfavorably impacted by (i) charges associated with the TCJA, which resulted in additional income tax expense of \$2.4 million. The expense was primarily related to the TCJA's transition tax on previously unremitted earnings of non-U.S. subsidiaries offset by the release of a deferred tax liability on unremitted foreign earnings; (ii) significant pre-tax charges primarily related to goodwill impairment, which were not deductible for tax purposes; and (iii) the impact of establishing valuation allowances on deferred tax assets in jurisdictions where we are unlikely to recognize these benefits.

Non-controlling Interests

Income attributable to non-controlling interests was \$1.4 million, \$0.2 million and \$2.8 million in 2019, 2018 and 2017, respectively. In 2019, income was primarily driven from our Corrosion Protection joint ventures in Oman and Saudi Arabia and our Infrastructure Solutions joint ventures in Asia. In 2018, income from our Corrosion Protection joint ventures in Oman and Louisiana and our Infrastructure Solutions joint ventures in Asia were partially offset by losses from our Corrosion Protection joint venture in Mexico. In 2017, income was primarily driven from our joint venture in Louisiana, which performed a majority of its work on a large deepwater project in our pipe coating and insulation operation.

Liquidity and Capital Resources

Sources and Uses of Cash

Our primary source of cash is operating activities. We occasionally borrow under our line of credit's available capacity to fund operating activities, including working capital investments. Our operating activities include the collection of accounts receivable as well as the ultimate billing and collection of contract assets. At December 31, 2019, we believed our net accounts receivable and our contract assets, as reported on our Consolidated Balance Sheet, were fully collectible and a significant portion of the receivables will be collected within the next twelve months. From time to time, we have net receivables recorded that we believe will be collected but are being disputed by the customer in some manner. Disputes of this nature could meaningfully impact the timing of receivable collection or require us to invoke our contractual or legal rights in a lawsuit or alternative dispute resolution proceeding. If in a future period we believe any of these receivables are no longer collectible, we would increase our allowance for bad debts through a charge to earnings.

We expect the principal operational use of funds for the foreseeable future will be for capital expenditures, working capital, debt service and share repurchases.

During 2019, capital expenditures were primarily used to: (i) support our Infrastructure Solutions North American CIPP business and expand our Corrosion Protection businesses in the Middle East; and (ii) boost our information systems platform with upgrades to our enterprise resource planning system. For 2020, we anticipate that we will spend approximately \$25 million for capital expenditures, which is slightly below that in 2019.

Open market repurchases of Aegion's common stock totaled 1,492,348 shares, or \$26.3 million, in 2019. In December 2019, our board of directors authorized the open market repurchase of up to an additional two million shares of our common stock. The program did not establish a time period in which the repurchases had to be made, although the authorization is limited to \$40.0 million in 2020 by our amended Credit Facility while our consolidated financial leverage ratio remains greater than 2.50 to 1.00. The shares are repurchased from time to time in the open market, subject to cash availability, market conditions and other factors, and in accordance with applicable regulatory requirements. We are not obligated to acquire any particular amount of common stock and, subject to applicable regulatory requirements, may commence, suspend or discontinue purchases at any time without notice or authorization. Any shares repurchased during 2020 are expected to be funded primarily through available cash. Once repurchased, we promptly retire such shares.

As part of our Restructuring, we utilized cash of \$13.8 million during 2019 and \$37.1 million in cumulative cash payments since 2017 related to employee severance, extension of benefits, employment assistance programs, early lease and contract termination and other restructuring related costs. Cumulatively, we have incurred both cash and non-cash charges of \$171.9 million, of which \$86.4 million relates to goodwill and long-lived asset impairment charges recorded in 2017 as part of exiting the non-pipe FRP contracting market in North America. We are substantially complete with respect to our restructuring efforts and expect to incur additional cash charges of between \$2 million and \$4 million. We could also incur additional non-cash charges primarily associated with the release of cumulative currency translation adjustments and losses on the closure or liquidation of international entities. See Note 4 to the consolidated financial statements contained in this Report for additional information and disclosures regarding our Restructuring.

The following table is a condensed schedule of cash flows used in the discussion of liquidity and capital resources (in thousands):

	Years Ended December 31,		
	2019	2018	2017
Net cash provided by operating activities	\$ 78,814	\$ 39,669	\$ 63,594
Net cash provided by (used in) investing activities	(27,726)	1,165	(39,547)
Net cash used in financing activities	(66,757)	(60,448)	(56,447)
Effect of exchange rate changes on cash	(2,995)	(4,045)	6,553
Net decrease in cash, cash equivalents and restricted cash for the year	\$ (18,664)	\$ (23,659)	\$ (25,847)

Cash Flows from Operating Activities

Cash flows from operating activities provided \$78.8 million and \$39.7 million in 2019 and 2018, respectively. The increase in operating cash flow from 2019 to 2018 was primarily due to improved working capital management in 2019 as compared to 2018, partially offset by lower operating income during 2019 as compared to 2018, exclusive of significant non-cash charges in both periods. Cash flows during 2019 and 2018 were negatively impacted by \$13.8 million and \$14.8 million, respectively, in cash payments related to our restructuring activities. Cash flows in 2017 were negatively impacted by \$9.4 million in cash payments related to our restructuring activities.

Net loss recorded in 2019 was negatively impacted by non-cash charges of \$12.8 million related to restructuring and impairments of assets held for sale. Net income recorded in 2018 was negatively impacted by non-cash charges of \$24.4 million related to restructuring, impairments and the loss on sale of Bayou. The net loss recorded in 2017 was negatively impacted by non-cash charges of \$96.5 million related to restructuring, definite-lived intangible asset impairments and goodwill impairments. Working capital provided \$16.0 million of cash during 2019 compared to \$35.4 million used in 2018. This increased inflow was primarily attributed to improved working capital management in 2019, especially as it relates to accounts receivable collections in the U.S. as well as settling international accounts receivable as part of our restructuring efforts.

Cash flows from operating activities provided \$39.7 million and \$63.6 million in 2018 and 2017, respectively. The decrease was primarily due to lower operating income during 2018 as compared to 2017, exclusive of significant non-cash charges in both periods. Working capital used \$35.4 million of cash during 2018 compared to \$10.2 million used in 2017. This increased usage was primarily attributed to favorable customer prepayments in 2017 related to large Middle East coating projects executed in 2018.

Cash Flows from Investing Activities

Cash flows from investing activities used \$27.7 million of cash in 2019 and provided \$1.2 million of cash in 2018. We used \$28.8 million in cash for capital expenditures in 2019 compared to \$30.5 million in 2018 and \$30.8 million in 2017. In 2019 and 2018, \$0.9 million of non-cash capital expenditures were included in accounts payable and accrued expenses in both years. Capital expenditures in 2019, 2018 and 2017 were partially offset by \$1.3 million, \$3.0 million and \$0.7 million, respectively, in proceeds received from asset disposals. During 2018, we received \$37.9 million from the sale of Bayou and we used \$9.0 million for two smaller acquisitions. During 2017, we used approximately \$8.0 million to acquire Environmental Techniques.

Cash Flows from Financing Activities

Cash flows from financing activities used \$66.8 million during 2019 compared to \$60.4 million used in 2018. In 2019 and 2018, we used cash of \$29.4 million and \$25.8 million, respectively, to repurchase 1.7 million and 1.2 million shares, respectively, of our common stock through open market purchases and in connection with our equity compensation programs as discussed in Note 10 to the consolidated financial statements contained in this report. During 2019, we had net repayments on the line of credit of \$7.0 million, and we used cash of \$28.4 million to pay down the principal balance of our term loan. During 2018, we had net repayments on the line of credit of \$7.0 million, which included a \$35.0 million repayment from the proceeds on the Bayou sale, net of borrowings of \$28.0 million for domestic working capital needs, and we used cash of \$26.3 million to pay down the principal balance of our term loan. During 2017, we used cash of \$37.8 million to repurchase 1.7 million shares of our common stock. We also had net borrowings of \$2.0 million from our line of credit to fund domestic working capital needs, and we used \$21.6 million to pay down the principal balance of our term loan.

Financial Condition

The following table presents our capitalization (in thousands):

	December 31,	
	2019	2018
Cash and cash equivalents	\$ 64,874	\$ 83,527
Restricted cash	1,348	1,359
Total long-term debt	276,432	311,472
Total equity	435,093	470,187
Total capitalization (debt plus equity)	711,525	781,659
Debt to total capitalization	39%	40%

Cash and Cash Equivalents

At December 31, 2019, our cash balances were located worldwide for working capital and support needs. Given the breadth of our international operations, approximately \$25.3 million, or 39.0%, of our cash was denominated in currencies other than the United States dollar as of December 31, 2019. We manage our worldwide cash requirements by reviewing available funds among the many subsidiaries through which we conduct business and the cost effectiveness with which those funds can be accessed. The repatriation of cash balances from certain of our subsidiaries could have adverse tax consequences or be subject to regulatory capital requirements; however, those balances are generally available without legal restrictions to fund ordinary business operations. Certain provisions within the TCJA effectively transition the U.S. to a territorial system and eliminates deferral on U.S. taxation for certain amounts of income that are not taxed at a minimum level. At this time, we do not intend to distribute earnings in a taxable manner, and therefore, intend to limit distributions to: (i) earnings previously taxed in the U.S.; (ii) earnings that would qualify for the 100 percent dividends received deduction provided in the TCJA; or (iii) earnings that would not result in significant foreign taxes. As a result, we did not recognize a deferred tax liability on any remaining undistributed foreign earnings at December 31, 2019.

Restricted cash held in escrow primarily relates to funds reserved for legal requirements, deposits made in lieu of retention on specific projects performed for municipalities and state agencies, or advance customer payments and compensating balances for bank undertakings in Europe.

Long-Term Debt

In October 2015, we entered into an amended and restated \$650.0 million senior secured credit facility with a syndicate of banks. In February 2018 and December 2018, we amended this facility (the "amended Credit Facility"). The amended Credit Facility consists of a \$225.0 million revolving line of credit and a \$308.4 million term loan facility, each with a maturity date in February 2023.

We paid expenses of \$3.1 million associated with the amended Credit Facility, \$1.4 million related to up-front lending fees and \$1.7 million related to third-party arranging fees and expenses, the latter of which was recorded in "Interest expense" in the Consolidated Statement of Operations in 2018. In addition, we had \$2.4 million in unamortized loan costs associated with the original Credit Facility, of which \$0.6 million was written off and recorded in "Interest expense" in the Consolidated Statement of Operations in 2018.

Our indebtedness at December 31, 2019 consisted of \$253.8 million outstanding from the term loan under the amended Credit Facility and \$24.0 million on the line of credit under the amended Credit Facility. Additionally, the Company had \$0.8 million of debt held by its joint ventures (representing funds loaned by its joint venture partners).

As of December 31, 2019, we had \$26.1 million in letters of credit issued and outstanding under the amended Credit Facility. Of such amount, \$12.2 million was collateral for the benefit of certain of our insurance carriers and \$13.9 million was for letters of credit or bank guarantees of performance or payment obligations of foreign subsidiaries.

In October 2015, we entered into an interest rate swap agreement for a notional amount of \$262.5 million, which is set to expire in October 2020. The notional amount of this swap mirrors the amortization of a \$262.5 million portion of our \$350.0 million term loan drawn from the original Credit Facility. The swap requires us to make a monthly fixed rate payment of 1.46% calculated on the amortizing \$262.5 million notional amount, and provides us to receive a payment based upon a variable monthly LIBOR interest rate calculated on the same amortizing \$262.5 million notional amount. The receipt of the monthly LIBOR-based payment offsets a variable monthly LIBOR-based interest cost on a corresponding \$262.5 million portion of our term loan from the original Credit Facility. This interest rate swap is used to partially hedge the interest rate risk associated with the volatility of monthly LIBOR rate movement and is accounted for as a cash flow hedge.

In March 2018, we entered into an interest rate swap forward agreement that begins in October 2020 and expires in February 2023 to coincide with the amortization period of the amended Credit Facility. The swap will require us to make a monthly fixed rate payment of 2.937% calculated on the then amortizing \$170.6 million notional amount, and provides us to receive a payment based upon a variable monthly LIBOR interest rate calculated on the same amortizing \$170.6 million notional amount. The receipt of the monthly LIBOR-based payment will offset the variable monthly LIBOR-based interest cost on a corresponding \$170.6 million portion of our term loan from the amended Credit Facility. This interest rate swap will be used to partially hedge the interest rate risk associated with the volatility of monthly LIBOR rate movement and accounted for as a cash flow hedge.

The amended Credit Facility is subject to certain financial covenants including a consolidated financial leverage ratio and consolidated fixed charge coverage ratio. We were in compliance with all covenants at December 31, 2019 and expect continued compliance for the foreseeable future.

We believe that we have adequate resources and liquidity to fund future cash requirements and debt repayments with cash generated from operations, existing cash balances and additional short- and long-term borrowing capacity for the next 12 months.

See Note 9 to the consolidated financial statements contained in this Report for additional information and disclosures regarding our long-term debt.

Disclosure of Contractual Obligations and Commercial Commitments

We have entered into various contractual obligations and commitments in the course of our ongoing operations and financing strategies. Contractual obligations are considered to represent known future cash payments that we are required to make under existing contractual arrangements, such as debt and lease agreements. These obligations may result from both general financing activities or from commercial arrangements that are directly supported by related revenue-producing activities. Commercial commitments represent contingent obligations, which become payable only if certain pre-defined events were to occur, such as funding financial guarantees. See Note 13 to the consolidated financial statements contained in this Report for further discussion regarding our commitments and contingencies.

The following table provides a summary of our contractual obligations and commercial commitments as of December 31, 2019. This table includes cash obligations related to principal outstanding under existing debt agreements and operating leases (in thousands):

Cash Obligations ^{(1) (2) (3) (4) (5)}	Payments Due by Period						
	Total	2020	2021	2022	2023	2024	Thereafter
Long-term debt	\$ 277,750	\$ 32,033	\$ 25,061	\$ 30,844	\$ 189,813	\$ —	\$ —
Interest on long-term debt	30,661	10,973	9,800	8,641	1,247	—	—
Operating leases	83,688	18,739	16,287	13,509	10,950	7,845	16,358
Total contractual cash obligations	\$ 392,099	\$ 61,745	\$ 51,148	\$ 52,994	\$ 202,010	\$ 7,845	\$ 16,358

⁽¹⁾ Cash obligations are not discounted. See Notes 9 and 13 to the consolidated financial statements contained in this Report regarding our long-term debt and amended Credit Facility and commitments and contingencies, respectively.

⁽²⁾ Interest on long-term debt was calculated using the current annualized rate on our long-term debt as discussed in Note 9 to the consolidated financial statements contained in this Report.

⁽³⁾ Liabilities related to FASB ASC 740, *Income Taxes*, have not been included in the table above because we are uncertain as to if or when such amounts may be settled. As of December 31, 2019, we had income tax receivable and income tax payable of \$5.7 million and \$1.8 million, respectively, recorded on our consolidated balance sheet.

⁽⁴⁾ There were no material purchase commitments at December 31, 2019.

⁽⁵⁾ Amounts exclude approximately \$5.0 million of cash charges expected to be incurred in 2020 related to our Restructuring.

Off-Balance Sheet Arrangements

We use various structures for the financing of operating equipment, including borrowings and operating leases. All debt is presented in the balance sheet. Our future commitments were \$392.1 million at December 31, 2019. We have no other off-balance sheet financing arrangements or commitments. See Note 13 to the consolidated financial statements contained in this Report regarding commitments and contingencies.

Critical Accounting Policies

Discussion and analysis of our financial condition and results of operations are based upon our consolidated financial statements, which have been prepared in accordance with accounting principles generally accepted in the United States of America. The preparation of these financial statements requires us to make estimates and judgments that affect the reported amount of assets and liabilities, revenues and expenses, and related disclosure of contingent assets and liabilities at the financial statement dates. Actual results may differ from these estimates under different assumptions or conditions.

Some accounting policies require the application of significant judgment by management in selecting the appropriate assumptions for calculating financial estimates. By their nature, these judgments are subject to an inherent degree of uncertainty. We believe that our critical accounting policies are those described below. For a detailed discussion on the application of these and other accounting policies, see Note 2 to the consolidated financial statements contained in this Report.

Revenue Recognition

On January 1, 2018, we adopted FASB ASC 606, *Revenue from Contracts with Customers* (“FASB ASC 606”) for all contracts that were not completed using the modified retrospective transition method. We recognized the cumulative effect of initially applying FASB ASC 606 as an adjustment to the opening balance of retained earnings. Prior period information has not been restated and continues to be reported under the accounting standards in effect for those periods.

A performance obligation is a promise in a contract to transfer a distinct good or service to the customer, and is the unit of account in FASB ASC 606. A contract’s transaction price is allocated to each distinct performance obligation and recognized as revenue when, or as, the performance obligation is satisfied. For contracts in which construction, engineering and installation services are provided, there is generally a single performance obligation as the promise to transfer the individual goods or services is not separately identifiable from other promises in the contracts and, therefore, not distinct. The bundle of goods and services represents the combined output for which the customer has contracted. For product sales contracts with multiple performance obligations where each product is distinct, we allocate the contract’s transaction price to each performance obligation using our best estimate of the standalone selling price of each distinct good in the contract. For royalty license agreements whereby intellectual property is transferred to the customer, there is a single performance obligation as the license is not separately identifiable from the other goods and services in the contract.

Our performance obligations are satisfied over time as work progresses or at a point in time. Revenues from construction, engineering and installation services are recognized over time using an input measure (e.g., costs incurred to date relative to total estimated costs at completion) to measure progress toward satisfying performance obligations. Incurred cost represents work performed, which corresponds with, and thereby best depicts, the transfer of control to the customer. Contract costs include labor, material, overhead and, when appropriate, general and administrative expenses. Revenues from maintenance contracts are structured such that we have the right to consideration from a customer in an amount that corresponds directly with the performance completed to date. Therefore, we utilize the practical expedient in FASB ASC 606-55-255, which allows us to recognize revenue in the amount to which we have the right to invoice. Revenues from royalty license arrangements are recognized either at contract inception when the license is transferred or when the royalty has been earned, depending on whether the contract contains fixed consideration. Revenues from stand-alone product sales are recognized at a point in time, when control of the product is transferred to the customer.

Accounting for long-term contracts involves the use of various techniques to estimate total contract revenue and costs. For long-term contracts, we estimate the profit on a contract as the difference between the total estimated revenue and expected costs to complete a contract, and recognizes that profit over the life of the contract. Contract estimates are based on various assumptions to project the outcome of future events that sometimes span multiple years. These assumptions include labor productivity and availability; the complexity of the work to be performed; the cost and availability of materials; the performance of subcontractors; and the availability and timing of funding from the customer.

Our contracts do not typically contain variable consideration or other provisions that increase or decrease the transaction price. In rare situations where the transaction price is not fixed, we estimate variable consideration at the most likely amount to which we expect to be entitled. We include estimated amounts in the transaction price to the extent it is probable that a significant reversal of cumulative revenue recognized will not occur when the uncertainty associated with the variable consideration is resolved. For royalty license agreements, we apply the sales-based and usage-based royalty exception and recognize royalties at the later of: (i) when the subsequent sale or usage occurs; or (ii) the satisfaction or partial satisfaction of the performance obligation to which some or all of the sales-or usage-based royalty has been allocated. For contracts in which a portion of the transaction price is retained and paid after the good or service has been transferred to the customer, we do not recognize a significant financing component. The primary purpose of the retainage payment is often to provide the customer with assurance that we will perform our obligations under the contract, rather than to provide financing to the customer.

Our estimates of variable consideration and determination of whether to include estimated amounts in the transaction price are based largely on an assessment of anticipated performance and all information (historical, current and forecasted) that is reasonably available.

Taxation

We provide for estimated income taxes payable or refundable on current year income tax returns, as well as the estimated future tax effects attributable to temporary differences and carryforwards, in accordance with FASB ASC 740, *Income Taxes* (“FASB ASC 740”). FASB ASC 740 also requires that a valuation allowance be recorded against any deferred tax assets that are not likely to be realized in the future. The determination is based on our ability to generate future taxable income and, at times, is dependent on our ability to implement strategic tax initiatives to ensure full utilization of recorded deferred tax assets. Should we not be able to implement the necessary tax strategies, we may need to record valuation allowances for certain deferred tax assets, including those related to foreign income tax benefits. Significant management judgment is required in determining the provision for income taxes, deferred tax assets and liabilities and any valuation allowances recorded against net deferred tax assets.

As a result of the TCJA’s reduction in the U.S. corporate income tax rate from 35% to 21%, FASB ASC 740 required us to remeasure our deferred tax assets and liabilities based on tax rates at which the balances are expected to reverse in the future. The provisional amount recorded for the remeasurement of our deferred tax balances resulted in no adjustment to tax expense. The remeasurement of the deferred tax assets gave rise to an additional income tax expense of \$5.1 million in 2017, which was offset by an equal reduction in the valuation allowance of \$5.1 million.

In accordance with FASB ASC 740, tax benefits from an uncertain tax position may be recognized when it is more likely than not that the position will be sustained upon examination, including resolutions of any related appeals or litigation processes, based on the technical merits. In addition, this recognition model includes a measurement attribute that measures the position as the largest amount of tax that is greater than 50% likely of being realized upon ultimate settlement in accordance with FASB ASC 740. This interpretation also provides guidance on derecognition, classification, interest and penalties, accounting in interim periods, disclosure and transition.

We recognize tax liabilities in accordance with FASB ASC 740 and we adjust these liabilities when our judgment changes as a result of the evaluation of new information not previously available. Due to the complexity of some of these uncertainties, the ultimate resolution may result in a payment that is materially different from our current estimate of the tax liabilities. These differences will be reflected as increases or decreases to income tax expense in the period in which they are determined. While we believe the resulting tax balances as of December 31, 2019 and 2018 were appropriately accounted for in accordance with FASB ASC 740, the ultimate outcome of such matters could result in favorable or unfavorable adjustments to our consolidated financial statements and such adjustments could be material.

In 2017, in connection with our initial analysis of the TCJA, we recorded a provisional estimated net income tax expense of \$2.4 million by applying the guidance under Staff Accounting Bulletin No. 118, *Income Tax Accounting Implications of the Tax Cuts and Jobs Act* (“SAB 118”). In accordance with SAB 118, the estimated income tax represented our best estimate at the time it was made, but also understanding that the provisional amount was subject to further adjustments under SAB 118. During 2018, we finalized our calculations of the transition tax liability under the TCJA and adjusted the liability downward by \$1.9 million primarily due to further refinement of computations related to earnings and profits, cash and cash equivalents, state income tax and foreign withholding taxes pursuant to guidance issued during the year. This adjustment was recorded as a reduction to income tax expense in 2018.

Purchase Price Accounting

We account for our acquisitions in accordance with FASB ASC 805, *Business Combinations*. The base cash purchase price plus the estimated fair value of any non-cash or contingent consideration given for an acquired business is allocated to the assets acquired (including identified intangible assets) and liabilities assumed based on the estimated fair values of such assets and liabilities. The excess of the total consideration over the aggregate net fair values assigned is recorded as goodwill. Contingent consideration, if any, is recognized as a liability as of the acquisition date with subsequent adjustments recorded in the consolidated statements of operations. Indirect and general expenses related to business combinations are expensed as incurred.

We typically determine the fair value of tangible and intangible assets acquired in a business combination using independent valuations that rely on management’s estimates of inputs and assumptions that a market participant would use. Key assumptions include cash flow projections, growth rates, asset lives, and discount rates based on an analysis of weighted average cost of capital.

Long-Lived Assets

Property, plant and equipment and other identified intangibles (primarily customer relationships, patents and acquired technologies, trademarks, licenses and non-compete agreements) are recorded at cost, net of accumulated depreciation, amortization and impairment, and, except for goodwill, are depreciated or amortized on a straight-line basis over their estimated useful lives. Changes in circumstances such as technological advances, changes to our business model or changes in our capital strategy can result in the actual useful lives differing from our estimates. During 2019, no such changes were noted. If we determine that the useful life of our property, plant and equipment or our identified intangible assets should be shortened, we would depreciate or amortize the net book value in excess of the salvage value over its revised remaining useful life, thereby increasing depreciation or amortization expense.

Long-lived assets, including property, plant and equipment and other intangibles, are reviewed for impairment whenever events or changes in circumstances indicate that the carrying value of an asset may not be recoverable. Such impairment tests are based on a comparison of undiscounted cash flows to the recorded value of the asset. The estimate of cash flow is based upon, among other things, assumptions about expected future operating performance. Our estimates of undiscounted cash flow may differ from actual cash flow due to, among other things, technological changes, economic conditions, changes to our business model or changes in our operating performance. If the sum of the undiscounted cash flows is less than the carrying value, we recognize an impairment loss, measured as the amount by which the carrying value exceeds the fair value of the asset.

Impairment Review – 2017

As part of the Restructuring, we exited all non-pipe related contract applications for the Tyfo[®] system in North America. As a result of this action, we evaluated the fair value of long-lived assets in our Fyfe reporting unit in accordance with FASB ASC 360, *Property, Plant and Equipment* (“FASB ASC 360”). The results of the Fyfe reporting unit and its related asset groups are reported within the Infrastructure Solutions reportable segment.

Based on the results of the valuation, the carrying amount of certain long-lived assets for the Fyfe North America asset group exceeded the fair value. Accordingly, we recorded impairment charges of \$3.4 million to trademarks, \$20.8 million to customer relationships and \$16.8 million to patents and acquired technology in 2017. The impairment charges were recorded to “Definite-lived intangible asset impairment” in the Consolidated Statement of Operations. Property, plant and equipment was determined to have a carrying value that exceeded fair value; thus, no impairment was recorded.

The fair value estimates described above were determined using observable inputs and significant unobservable inputs, which are based on level 3 inputs as defined in Note 2 to the consolidated financial statements contained in this Report.

Goodwill

Under FASB ASC 350, we conduct an impairment test of goodwill on an annual basis or when events or changes in circumstances indicate that the carrying value of goodwill may not be recoverable. An impairment charge will be recognized to the extent that the fair value of a reporting unit is less than its carrying value. Factors that could potentially trigger an impairment review include (but are not limited to):

- significant underperformance of a segment relative to expected, historical or forecasted operating results;
- significant negative industry or economic trends;
- significant changes in the strategy for a segment including extended slowdowns in the segment’s market;
- a decrease in market capitalization below our book value; and
- a significant change in regulations.

Whether during the annual impairment assessment or during a trigger-based impairment review, we estimate the fair value of our reporting units and compare such fair value to the carrying value of those reporting units to determine if there are any indications of goodwill impairment.

Fair value of reporting units is estimated using a combination of two valuation methods: a market approach and an income approach with each method given equal weight in estimating the fair value assigned to each reporting unit. Absent an indication of fair value from a potential buyer or similar specific transaction, we believe the use of these two methods provides a reasonable estimate of a reporting unit’s fair value. Assumptions common to both methods are operating plans and economic outlooks, which are used to forecast future revenues, earnings and after-tax cash flows for each reporting unit. These assumptions are applied consistently for both methods.

The market approach estimates fair value by first determining earnings before interest, taxes, depreciation and amortization (“EBITDA”) multiples for comparable publicly-traded companies with similar characteristics of the reporting unit. The EBITDA multiples for comparable companies are based upon current enterprise value. The enterprise value is based upon current market capitalization and includes a control premium. We believe this approach is appropriate because it provides a fair value estimate using multiples from entities with operations and economic characteristics comparable to its reporting units.

The income approach is based on forecasted future (debt-free) cash flows that are discounted to present value using factors that consider timing and risk of future cash flows. We believe this approach is appropriate because it provides a fair value estimate based upon the reporting unit’s expected long-term operating cash flow performance. Discounted cash flow projections are based on financial forecasts developed from operating plans and economic outlooks, growth rates, estimates of future expected changes in operating margins, terminal value growth rates, future capital expenditures and changes in working capital requirements. Estimates of discounted cash flows may differ from actual cash flows due to, among other things, changes in economic conditions, changes to business models, changes in our weighted average cost of capital, or changes in operating performance.

The discount rate applied to the estimated future cash flows is one of the most significant assumptions utilized under the income approach. We determine the appropriate discount rate for each of its reporting units based on the weighted average cost of capital (“WACC”) for each individual reporting unit. The WACC takes into account both the pre-tax cost of debt and cost of equity (including the risk-free rate on twenty year U.S. Treasury bonds), and certain other company-specific and market-based factors. As each reporting unit has a different risk profile based on the nature of its operations, the WACC for each reporting unit is adjusted, as appropriate, to account for company-specific risks. Accordingly, the WACC for each reporting unit may differ.

Annual Impairment Assessment – October 1, 2019

We had six reporting units for purposes of assessing goodwill at October 1, 2019 as follows: Municipal Pipe Rehabilitation, Fyfe, Corpro, United Pipeline Systems, Coating Services and Energy Services.

Significant assumptions used in our October 2019 goodwill review included: (i) discount rates ranging from 12.0% to 16.0%; (ii) annual revenue growth rates generally ranging from 1.6% to 4.9%; (iii) operating margin stability in the short term related to certain reporting units affected by the Restructuring, but slightly increased operating margins long term; and (iv) peer group EBITDA multiples.

Our assessment of each reporting unit’s fair value in relation to its respective carrying value yielded no reporting units with a fair value below carrying value or within 10 percent of its carrying value. The Energy Services reporting unit had a fair value only slightly above 10 percent of its carrying value. The Energy Services reporting unit, which had \$48.0 million of goodwill recorded at the impairment testing date, has several large customers and primarily operates in the California downstream oil and gas market, which has experienced significant market changes in recent years. Projected cash flows were based on continued strength in the Central California downstream energy market and a continued, growing relationship with our primary customer base. If these assumptions do not materialize in a manner consistent with our expectations, there is risk of impairment to recorded goodwill.

Impairment Review – 2017

As part of the Restructuring, we exited all non-pipe related contract applications for the Tyfo[®] system in North America. As a result of this action, we evaluated the goodwill of our Fyfe reporting unit and determined that a triggering event occurred. Based on the impairment analysis, we determined that recorded goodwill at the Fyfe reporting unit was impaired by \$45.4 million, which was recorded to “Goodwill impairment” in the Consolidated Statement of Operations during 2017. As of December 31, 2017, we had remaining Fyfe goodwill of \$9.6 million.

Projected cash flows were based, in part, on the ability to grow third-party product sales and pressure pipe contracting in North America, and maintaining a presence in other international markets. If these assumptions do not materialize in a manner consistent with our expectations, there is risk of additional impairment to recorded goodwill.

See Note 8 to the consolidated financial statements contained in this Report for a reconciliation of the beginning and ending balances of goodwill.

Accounting Standards Updates

See Note 2 to the consolidated financial statements contained in this Report.

Item 7A. Quantitative and Qualitative Disclosures About Market Risk

Market Risk

We are exposed to the effect of interest rate changes and of foreign currency and commodity price fluctuations. We currently do not use derivative contracts to manage commodity risks. From time to time, we may enter into foreign currency forward contracts to fix exchange rates for net investments in foreign operations to hedge our foreign exchange risk.

Interest Rate Risk

The fair value of our cash and short-term investment portfolio at December 31, 2019 approximated carrying value. Given the short-term nature of these instruments, market risk, as measured by the change in fair value resulting from a hypothetical 100 basis point change in interest rates, would not be material.

Our objectives in managing exposure to interest rate changes are to limit the impact of interest rate changes on earnings and cash flows and to lower overall borrowing costs. To achieve these objectives, we maintain fixed rate debt whenever favorable; however, the majority of our debt at December 31, 2019 was variable rate debt. We substantially mitigate our interest rate risk through interest rate swap agreements, which are used to hedge the volatility of monthly LIBOR rate movement of our debt. We currently utilize interest rate swap agreements with a notional amount that mirrors approximately 75% of our outstanding borrowings from the term loan under our amended Credit Facility.

At December 31, 2019, the estimated fair value of our long-term debt was approximately \$286.8 million. Fair value was estimated using market rates for debt of similar risk and maturity and a discounted cash flow model. Market risk related to the potential increase in fair value resulting from a hypothetical 100 basis point increase in our debt specific borrowing rates at December 31, 2019 would result in a \$0.8 million increase in interest expense.

Foreign Exchange Risk

We operate subsidiaries and are associated with licensees and affiliated companies operating solely outside of the United States and in foreign currencies. Consequently, we are inherently exposed to risks associated with the fluctuation in the value of the local currencies compared to the U.S. dollar. At December 31, 2019, a substantial portion of our cash and cash equivalents was denominated in foreign currencies, and a hypothetical 10.0% change in currency exchange rates could result in an approximate \$2.5 million impact to our equity through accumulated other comprehensive income (loss).

In order to help mitigate this risk, we may enter into foreign exchange forward contracts to minimize the short-term impact of foreign currency fluctuations. We do not engage in hedging transactions for speculative investment reasons. There can be no assurance that our hedging operations will eliminate or substantially reduce risks associated with fluctuating currencies. At December 31, 2019, there were no material foreign currency hedge instruments outstanding. See Note 15 to the consolidated financial statements contained in this Report for additional information and disclosures regarding our derivative financial instruments.

Commodity Risk

We have exposure to the effect of limitations on supply and changes in commodity pricing relative to a variety of raw materials that we purchase and use in our operating activities, most notably resin, iron ore, chemicals, staple fiber, fuel, metals and pipe. We manage this risk by entering into agreements with certain suppliers utilizing a request for proposal, or RFP, format and purchasing in bulk, and advantageous buying on the spot market for certain metals, when possible. We also manage this risk by continuously updating our estimation systems for bidding contracts so that we are able to price our products and services appropriately to our customers. However, we face exposure on contracts in process that have already been priced and are not subject to any cost adjustments in the contract. This exposure is potentially more significant on our longer-term projects.

We obtain a majority of our global resin requirements, one of our primary raw materials, from multiple suppliers in order to diversify our supplier base and thus reduce the risks inherent in concentrated supply streams. We have qualified a number of vendors in North America, Europe and Asia that can deliver, and are currently delivering, proprietary resins that meet our specifications.

The primary products and raw materials used by our infrastructure rehabilitation operations in the manufacture of FRP composite systems are carbon, glass, resins, fabric and epoxy raw materials. Fabric and epoxies are the largest materials purchased, which are currently purchased through a select group of suppliers, although we believe these and the other materials are available from a number of vendors. The price of epoxy historically is affected by the price of oil. In addition, a number of factors such as worldwide demand, labor costs, energy costs, import duties and other trade restrictions may influence the price of these raw materials.

We rely on a select group of third-party extruders to manufacture our Fusible PVC[®] pipe products.

Item 8. Financial Statements and Supplementary Data

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Management's Report on Internal Control Over Financial Reporting

The Company's management is responsible for establishing and maintaining adequate internal control over financial reporting, as such term is defined in Exchange Act Rule 13a-15(f).

Under the supervision and with the participation of Company management, including the Chief Executive Officer (the principal executive officer) and the Chief Financial Officer (the principal financial officer), an evaluation was performed of the effectiveness of the Company's internal control over financial reporting as of December 31, 2019. In performing this evaluation, management employed the criteria set forth by the Committee of Sponsoring Organizations of the Treadway Commission in *Internal Control – Integrated Framework* (2013).

Based on the criteria set forth in *Internal Control – Integrated Framework* (2013), management, including the Company's Chief Executive Officer and Chief Financial Officer, has concluded that the Company's internal control over financial reporting was effective as of December 31, 2019.

Because of 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.

The effectiveness of the Company's internal control over financial reporting as of December 31, 2019 has been audited by PricewaterhouseCoopers LLP, an independent registered public accounting firm, as stated in its report which appears herein.

/s/ Charles R. Gordon

Charles R. Gordon
President and Chief Executive Officer
(Principal Executive Officer)

/s/ David F. Morris

David F. Morris
Executive Vice President and Chief Financial Officer
(Principal Financial Officer)

Report of Independent Registered Public Accounting Firm

To the Board of Directors and Shareholders of Aegion Corporation

Opinions on the Financial Statements and Internal Control over Financial Reporting

We have audited the accompanying consolidated balance sheets of Aegion Corporation and its subsidiaries (the “Company”) as of December 31, 2019 and 2018, and the related consolidated statements of operations, of comprehensive income, of equity and of cash flows for each of the three years in the period ended December 31, 2019, including the related notes (collectively referred to as the “consolidated financial statements”). We also have audited the Company's internal control over financial reporting as of December 31, 2019, based on criteria established in *Internal Control - Integrated Framework* (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO).

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of the Company as of December 31, 2019 and 2018, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2019 in conformity with accounting principles generally accepted in the United States of America. Also in our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2019, based on criteria established in *Internal Control - Integrated Framework* (2013) issued by the COSO.

Change in Accounting Principle

As discussed in Note 2 to the consolidated financial statements, the Company changed the manner in which it accounts for leases in 2019.

Basis for Opinions

The Company's management is responsible for these consolidated financial statements, 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 Management's Report on Internal Control Over Financial Reporting. Our responsibility is to express opinions on the Company's consolidated financial statements and on the Company's internal control over financial reporting 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 audits to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud, and whether effective internal control over financial reporting was maintained in all material respects.

Our audits of the consolidated financial statements 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. Our audit of internal control over financial reporting 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 audits also included performing such other procedures as we considered necessary in the circumstances. We believe that our audits provide a reasonable basis for our opinions.

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 (i) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (ii) 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 (iii) 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.

Critical Audit Matters

The critical audit matter communicated below is a matter arising from the current period audit of the consolidated financial statements that was communicated or required to be communicated to the audit committee and that (i) relates to accounts or disclosures that are material to the consolidated financial statements and (ii) involved our especially challenging, subjective, or complex judgments. The communication of critical audit matters does not alter in any way our opinion on the consolidated financial statements, taken as a whole, and we are not, by communicating the critical audit matter below, providing a separate opinion on the critical audit matter or on the accounts or disclosures to which it relates.

Goodwill Impairment Assessments – Energy Services and Corpro Reporting Units

As described in Notes 2 and 8 to the consolidated financial statements, the Company's consolidated goodwill balance was \$256.8 million as of December 31, 2019, and the goodwill associated with the Energy Services and Corrosion Protection segments was \$48.0 million and \$31.5 million, respectively, of which a significant portion is associated with the Energy Services and Corpro reporting units. Management conducts an impairment test on an annual basis or when events or changes in circumstances indicate that the carrying value of goodwill may not be recoverable. An impairment charge will be recognized to the extent that the fair value of a reporting unit is less than its carrying value. Fair value of reporting units is estimated using a combination of two valuation methods: a market approach and an income approach with each method given equal weight in estimating the fair value assigned to each reporting unit. The market approach estimates fair value by first determining earnings before interest, taxes, depreciation and amortization (EBITDA) multiples for comparable publicly-traded companies with similar characteristics of the reporting unit. The income approach is based on forecasted future (debt-free) cash flows that are discounted to present value using factors that consider timing and risk of future cash flows. Discounted cash flow projections are based on financial forecasts developed from operating plans and economic outlooks, growth rates, estimates of future expected changes in operating margins, terminal value growth rates, future capital expenditures and changes in working capital requirements. Management's valuation methods included significant assumptions relating to discount rates, revenue growth rates, operating margins, and peer group EBITDA multiples.

The principal considerations for our determination that performing procedures relating to the goodwill impairment assessments for the Energy Services and Corpro reporting units is a critical audit matter are there was significant judgment by management when developing the fair value measurement of the reporting units. This in turn led to a high degree of auditor judgment, subjectivity, and effort in performing procedures and evaluating audit evidence relating to management's market and income approaches and significant assumptions, including discount rates, revenue growth rates, operating margins, and peer group EBITDA multiples. In addition, the audit effort involved the use of professionals with specialized skill and knowledge to assist in performing these procedures and evaluating the audit evidence obtained.

Addressing the matter involved performing procedures and evaluating audit evidence in connection with forming our overall opinion on the consolidated financial statements. These procedures included testing the effectiveness of controls relating to management's goodwill impairment assessment, including controls over the determination of the fair value of the Company's reporting units. These procedures also included, among others, testing management's process for developing the fair value estimates of the Energy Services and Corpro reporting units; evaluating the appropriateness of the valuation methods; testing the completeness and accuracy of underlying data used in the valuation methods; and evaluating the significant assumptions used by management, including discount rates, revenue growth rates, operating margins and peer group EBITDA multiples. Evaluating management's assumptions related to discount rates, revenue growth rates, operating margins and peer group EBITDA multiples involved evaluating whether the assumptions used by management were reasonable considering (i) current and past performance of the reporting units, (ii) relevant industry forecasts and macroeconomic conditions, and (iii) consistency with evidence obtained in other areas of the audit. Professionals with specialized skill and knowledge were used to assist in evaluating the appropriateness of management's market and income approaches and certain significant assumptions, including the discount rates and peer group EBITDA multiples.

/s/ PricewaterhouseCoopers LLP
St. Louis, Missouri
March 2, 2020

We have served as the Company's auditor since 2002.

AEGION CORPORATION AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF OPERATIONS
(in thousands, except per share amounts)

	Years Ended December 31,		
	2019	2018	2017
Revenues	\$ 1,213,935	\$ 1,333,568	\$ 1,359,019
Cost of revenues	967,700	1,066,642	1,074,207
Gross profit	246,235	266,926	284,812
Operating expenses	199,430	219,823	226,173
Goodwill impairment	—	1,389	45,390
Definite-lived intangible asset impairment	—	2,169	41,032
Impairment of assets held for sale	23,427	—	—
Acquisition and divestiture expenses	3,375	7,004	2,923
Restructuring and related charges	9,030	6,894	12,814
Operating income (loss)	10,973	29,647	(43,520)
Other income (expense):			
Interest expense	(14,002)	(17,327)	(16,001)
Interest income	1,038	516	145
Other	(10,893)	(9,881)	(2,201)
Total other expense	(23,857)	(26,692)	(18,057)
Income (loss) before taxes on income	(12,884)	2,955	(61,577)
Taxes (benefit) on income (loss)	6,564	(132)	5,005
Net income (loss)	(19,448)	3,087	(66,582)
Non-controlling interests income	(1,444)	(159)	(2,819)
Net income (loss) attributable to Aegion Corporation	\$ (20,892)	\$ 2,928	\$ (69,401)
Earnings (loss) per share attributable to Aegion Corporation:			
Basic	\$ (0.67)	\$ 0.09	\$ (2.09)
Diluted	(0.67)	0.09	(2.09)

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

AEGION CORPORATION AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME
(in thousands)

	Years Ended December 31,		
	2019	2018	2017
Net income (loss)	\$ (19,448)	\$ 3,087	\$ (66,582)
Other comprehensive income (loss):			
Currency translation adjustments	13,915	(14,651)	20,839
Deferred gain (loss) on hedging activity, net of tax ⁽¹⁾	(6,237)	(1,621)	1,402
Pension activity, net of tax ⁽²⁾	(33)	(654)	93
Total comprehensive loss	(11,803)	(13,839)	(44,248)
Comprehensive income attributable to non-controlling interests	(1,493)	(1)	(3,040)
Comprehensive loss attributable to Aegion Corporation	\$ (13,296)	\$ (13,840)	\$ (47,288)

⁽¹⁾ Amounts presented net of tax of \$164, \$(48) and \$930 for the years ended December 31, 2019, 2018 and 2017, respectively.

⁽²⁾ Amounts presented net of tax of \$8, \$(134) and \$22 for the years ended December 31, 2019, 2018 and 2017, respectively.

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

AEGION CORPORATION AND SUBSIDIARIES
CONSOLIDATED BALANCE SHEETS
(in thousands, except share amounts)

	December 31,	
	2019	2018
Assets		
Current assets		
Cash and cash equivalents	\$ 64,874	\$ 83,527
Restricted cash	1,348	1,359
Receivables, net of allowances of \$7,224 and \$9,695, respectively	192,604	204,541
Retainage	33,103	33,572
Contract assets	51,092	62,467
Inventories	57,193	56,437
Prepaid expenses and other current assets	33,909	32,172
Assets held for sale	16,092	7,792
Total current assets	450,215	481,867
Property, plant & equipment, less accumulated depreciation	101,091	107,059
Other assets		
Goodwill	256,835	260,633
Intangible assets, less accumulated amortization	104,828	119,696
Operating lease assets	71,466	—
Deferred income tax assets	1,216	1,561
Other non-current assets	9,862	21,601
Total other assets	444,207	403,491
Total Assets	\$ 995,513	\$ 992,417
Liabilities and Equity		
Current liabilities		
Accounts payable	\$ 60,614	\$ 64,562
Accrued expenses	96,577	88,020
Contract liabilities	37,562	32,339
Current maturities of long-term debt	32,803	29,469
Liabilities held for sale	6,485	5,260
Total current liabilities	234,041	219,650
Long-term debt, less current maturities	243,629	282,003
Other liabilities		
Operating lease liabilities	56,253	—
Deferred income tax liabilities	11,254	8,361
Other non-current liabilities	15,243	12,216
Total other liabilities	82,750	20,577
Total liabilities	560,420	522,230
(See Commitments and Contingencies: Note 13)		
Equity		
Preferred stock, undesignated, \$.10 par – shares authorized 2,000,000; none	—	—
Common stock, \$.01 par – shares authorized 125,000,000; shares issued and	307	319
Additional paid-in capital	101,148	122,818
Retained earnings	358,998	379,890
Accumulated other comprehensive loss	(32,694)	(40,290)
Total stockholders' equity	427,759	462,737
Non-controlling interests	7,334	7,450
Total equity	435,093	470,187
Total Liabilities and Equity	\$ 995,513	\$ 992,417

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

AEGION CORPORATION AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF EQUITY
(in thousands, except number of shares)

	Years Ended December 31,		
	2019	2018	2017
Common Stock - Shares			
Balance, beginning of year	31,922,409	32,462,542	33,956,304
Issuance of common stock upon stock option exercises	52,783	—	43,573
Issuance of shares pursuant to restricted stock units	237,416	312,182	95,510
Issuance of shares pursuant to performance units	111,158	296,909	49,672
Issuance of shares pursuant to deferred stock units	84,184	28,308	30,559
Forfeitures of restricted shares	—	—	(1,084)
Shares repurchased and retired	(1,691,991)	(1,177,532)	(1,711,992)
Balance, end of year	30,715,959	31,922,409	32,462,542
Common Stock - Amount			
Balance, beginning of year	\$ 319	\$ 325	\$ 340
Issuance of common stock upon stock option exercises	1	—	—
Issuance of shares pursuant to restricted stock units	2	3	1
Issuance of shares pursuant to performance units	1	3	—
Issuance of shares pursuant to deferred stock units	1	—	—
Shares repurchased and retired	(17)	(12)	(16)
Balance, end of year	\$ 307	\$ 319	\$ 325
Additional Paid-In Capital			
Balance, beginning of year	\$ 122,818	\$ 140,749	\$ 167,700
Issuance of common stock upon stock option exercises	955	—	822
Shares repurchased and retired	(30,376)	(25,769)	(37,833)
Equity-based compensation expense	7,751	7,838	10,060
Balance, end of year	\$ 101,148	\$ 122,818	\$ 140,749
Retained Earnings			
Balance, beginning of year	\$ 379,890	\$ 376,694	\$ 446,095
Cumulative effect adjustment (see Revenues: Note 3)	—	268	—
Net income (loss) attributable to Aegion Corporation	(20,892)	2,928	(69,401)
Balance, end of year	\$ 358,998	\$ 379,890	\$ 376,694
Accumulated Other Comprehensive Loss			
Balance, beginning of year	\$ (40,290)	\$ (23,522)	\$ (45,635)
Currency translation adjustment and derivative transactions, net	7,596	(16,768)	22,113
Balance, end of year	\$ (32,694)	\$ (40,290)	\$ (23,522)
Non-Controlling Interests			
Balance, beginning of year	\$ 7,450	\$ 10,810	\$ 7,683
Net income	1,444	159	2,819
Investments from non-controlling interest	—	—	158
Distributions to non-controlling interests	(1,609)	—	(71)
Sale of non-controlling interests	—	(3,361)	—
Currency translation adjustment, net	49	(158)	221
Balance, end of year	\$ 7,334	\$ 7,450	\$ 10,810
Total Equity			
Balance, beginning of year	\$ 470,187	\$ 505,056	\$ 576,183
Cumulative effect adjustment (See Revenues: Note 3)	—	268	—
Net income (loss)	(19,448)	3,087	(66,582)
Issuance of common stock upon stock option exercises	956	—	822
Issuance of shares pursuant to restricted stock units	2	3	1
Issuance of shares pursuant to performance units	1	3	—
Issuance of shares pursuant to deferred stock units	1	—	—
Shares repurchased and retired	(30,393)	(25,781)	(37,849)
Equity-based compensation expense	7,751	7,838	10,060
Investments from non-controlling interest	—	—	158
Distributions to non-controlling interests	(1,609)	—	(71)
Sale of non-controlling interests	—	(3,361)	—
Currency translation adjustment and derivative transactions, net	7,645	(16,926)	22,334
Balance, end of year	\$ 435,093	\$ 470,187	\$ 505,056

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

AEGION CORPORATION AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF CASH FLOWS
(in thousands)

	Years Ended December 31,		
	2019	2018	2017
Cash flows from operating activities:			
Net income (loss)	\$ (19,448)	\$ 3,087	\$ (66,582)
Adjustments to reconcile to net cash provided by operating activities:			
Depreciation and amortization	36,163	37,855	44,419
(Gain) loss on sale of fixed assets	(662)	143	(59)
Equity-based compensation expense	7,751	7,838	10,060
Deferred income taxes	3,146	(648)	(9,376)
Non-cash restructuring charges	12,782	13,814	10,080
Goodwill impairment	—	1,389	45,390
Definite-lived intangible asset impairment	—	2,169	41,032
Impairment of assets held for sale	23,427	—	—
Loss on sale of business	—	7,048	—
Loss on foreign currency transactions	503	623	2,152
Other	(744)	1,278	(1,562)
Changes in operating assets and liabilities (net of acquisitions):			
Receivables net, retainage and contract assets	16,416	(6,821)	(29,847)
Inventories	(3,413)	2,306	(1,926)
Prepaid expenses and other assets	4,578	614	8,732
Accounts payable and accrued expenses	(6,711)	(7,339)	18,803
Contract liabilities	5,091	(24,144)	(5,924)
Other operating	(65)	457	(1,798)
Net cash provided by operating activities	78,814	39,669	63,594
Cash flows from investing activities:			
Capital expenditures	(28,772)	(30,514)	(30,830)
Proceeds from sale of fixed assets	1,339	3,036	707
Patent expenditures	(293)	(299)	(379)
Other acquisition activity	—	(9,000)	(9,045)
Sale of Bayou, net of cash disposed	—	37,942	—
Net cash provided by (used in) investing activities	(27,726)	1,165	(39,547)
Cash flows from financing activities:			
Proceeds from issuance of common stock upon stock option exercises	956	—	823
Repurchase of common stock	(30,393)	(25,775)	(37,849)
Investments from non-controlling interest	—	—	158
Distributions to non-controlling interests	(1,609)	—	(71)
Payment of contingent consideration	—	—	(500)
Credit facility amendment fees	—	(1,657)	—
Proceeds from (payments on) notes payable, net	(273)	234	639
Proceeds from (payments on) line of credit, net	(7,000)	(7,000)	2,000
Principal payments on long-term debt	(28,438)	(26,250)	(21,647)
Net cash used in financing activities	(66,757)	(60,448)	(56,447)
Effect of exchange rate changes on cash	(2,995)	(4,045)	6,553
Net decrease in cash, cash equivalents and restricted cash for the year	(18,664)	(23,659)	(25,847)
Cash, cash equivalents and restricted cash, beginning of year	84,886	108,545	134,392
Cash, cash equivalents and restricted cash, end of year	66,222	84,886	108,545
Cash, cash equivalents and restricted cash, assets held for sale, end of year	—	—	(989)
Cash, cash equivalents and restricted cash, end of year	\$ 66,222	\$ 84,886	\$ 107,556
Supplemental disclosures of cash flow information:			
Cash paid (received) for:			
Interest	\$ 14,977	\$ 15,622	\$ 14,998
Income taxes	(1,579)	4,625	5,649

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

AEGION CORPORATION AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

1. DESCRIPTION OF BUSINESS

Aegion Corporation combines innovative technologies with market leading expertise to maintain, rehabilitate and strengthen pipelines and other infrastructure around the world. For nearly 50 years, the Company has played a pioneering role in finding transformational solutions to rehabilitate aging infrastructure, primarily pipelines in the wastewater, water, energy, mining and refining industries. The Company also maintains the efficient operation of refineries and other industrial facilities and provide innovative solutions for the strengthening of buildings, bridges and other structures. Aegion is committed to Stronger. Safer. Infrastructure[®]. The Company believes that the depth and breadth of its products and services platform make Aegion a leading “one-stop” provider for the world’s infrastructure rehabilitation and protection needs.

The Company is primarily built on the premise that it is possible to use technology to extend the structural design life and maintain, if not improve, the performance of infrastructure, mostly pipe. The Company is proving that this expertise can be applied in a variety of markets to protect pipelines in oil, gas, mining, wastewater and water applications and extending this to the rehabilitation and maintenance of commercial structures and the provision of professional services in energy-related industries. Many types of infrastructure must be protected from the corrosive and abrasive materials that pass through or near them. The Company’s expertise in non-disruptive corrosion engineering and abrasion protection is now wide-ranging, opening new markets for growth. The Company has a long history of product development and intellectual property management. The Company manufactures most of the engineered solutions it creates as well as the specialized equipment required to install them. Finally, decades of experience give the Company an advantage in understanding municipal, energy, mining, industrial and commercial customers. Strong customer relationships and brand recognition allow the Company to support the expansion of existing and innovative technologies into new high growth end markets.

The Company’s predecessor was originally incorporated in Delaware in 1980 to act as the exclusive United States licensee of the Insituform[®] cured-in-place pipe (“CIPP”) process, which Insituform’s founder invented in 1971. The Insituform[®] CIPP process served as the first trenchless technology for rehabilitating sewer pipelines and has enabled municipalities and private industry to avoid the extraordinary expense and extreme disruption that can result from conventional “dig-and-replace” methods. For nearly 50 years, the Company has maintained its leadership position in the CIPP market from manufacturing to technological innovations and market share.

In order to strengthen the Company’s ability to service the emerging demands of the infrastructure protection market and to better position the Company for sustainable growth, the Company embarked on a diversification strategy in 2009 to expand its product and service portfolio and its geographical reach. Through a series of strategic initiatives and key acquisitions, the Company now possesses a broad portfolio of cost-effective solutions for rehabilitating and maintaining aging or deteriorating infrastructure, protecting new infrastructure from corrosion worldwide and providing integrated professional services in engineering, procurement, construction, maintenance, and turnaround services for oil and natural gas companies, primarily in the midstream and downstream markets.

Recognizing that the breadth of offerings expanded beyond the Company’s flagship Insituform[®] brand, which constituted less than half of the Company’s revenues in 2011, the Company reorganized Insituform Technologies, Inc. (“Insituform”), the parent company at the time, into a new holding company structure in October 2011. Aegion became the new parent company and Insituform became a wholly-owned subsidiary of Aegion. Aegion reflects the Company’s mission of extending its leadership capabilities to furnish products and services to provide: (i) long-term protection for water and wastewater pipes, oil and gas pipelines and infrastructure as well as commercial and governmental structures and transportation infrastructure; and (ii) integrated professional services to energy companies.

Strategic Initiatives/Acquisitions/Divestitures

Restructuring Activities

On July 28, 2017, the Company’s board of directors approved a comprehensive global realignment and restructuring plan (the “Restructuring”). As part of the Restructuring, the Company announced plans to: (i) divest the Company’s pipe coating and insulation businesses in Louisiana, The Bayou Companies, LLC and Bayou Wasco Insulation, LLC (collectively “Bayou”); (ii) exit all non-pipe related contract applications for the Tyfo[®] system in North America; (iii) right-size the cathodic protection services operation in Canada and the CIPP businesses in Australia and Denmark; and (iv) reduce corporate and other operating costs.

During 2018 and 2019, the Company's board of directors approved additional actions with respect to the Restructuring, which included the decisions to: (i) divest the Australia and Denmark CIPP businesses; (ii) take actions to further optimize operations within North America, including measures to reduce consolidated operating costs; and (iii) divest or otherwise exit multiple additional international businesses, including: (a) the Company's cathodic protection installation activities in the Middle East, including Corppower International Limited, the Company's cathodic protection materials manufacturing and production joint venture in Saudi Arabia; (b) United Pipeline de Mexico S.A. de C.V., the Company's Tite Liner® joint venture in Mexico ("United Mexico"); (c) the Company's Tite Liner® businesses in Brazil and Argentina; (d) Aegion South Africa Proprietary Limited, the Company's Tite Liner® and CIPP joint venture in the Republic of South Africa; and (e) the Company's CIPP contract installation operations in England, the Netherlands, Spain and Northern Ireland.

The Company completed the divestitures of Bayou and the Denmark CIPP business in 2018. The Company also completed the divestitures of the Netherlands CIPP business and its Tite Liner® joint venture in Mexico in 2019, as well as the shutdown of activities for the CIPP business in England. The Company completed the divestitures of CIPP operations in Australia and Spain in early 2020 (see Note 17). Remaining divestiture and shutdown activities include the sale of the Northern Ireland contracting operation and minor final dissolution activities in South America and South Africa, all of which is expected to be completed in the first half of 2020. Additionally, the exit of the Company's cathodic protection installation activities in the Middle East is substantially complete, though management expects minimal wind-down activities will extend through the second quarter of 2020 related to a small number of projects remaining in backlog.

As part of efforts to optimize the cathodic protection operations in North America, the Company's management initiated plans during the fourth quarter of 2019 to further downsize operations in the U.S., including the closure of three branch offices and the exit of capital intensive drilling activities at four branch offices. These actions included a reduction of approximately 20% of the cathodic protection domestic workforce and an exit of drilling activities that contributed approximately 20% to our cathodic protection domestic revenues in 2019. Management expects these actions to improve our cathodic protection cost structure in the U.S., eliminate unprofitable results in certain parts of the business and reduce consolidated annual expenses for the business overall. Also during the fourth quarter of 2019, the Company reduced corporate headcount and took other actions to reduce corporate costs. See Note 4.

Infrastructure Solutions Segment ("Infrastructure Solutions")

During 2019, the Company initiated plans to sell its CIPP contracting business in Ireland, Environmental Techniques Limited ("Environmental Techniques"), and Spain, Insituform Technologies Iberica SA ("Insituform Spain"). Accordingly, the Company has classified the assets and liabilities as held for sale on the Consolidated Balance Sheet at December 31, 2019. See Note 6. Additionally, see Note 17 for additional information on the sale of Insituform Spain, effective February 13, 2020.

In October 2019, the Company sold its CIPP contracting operations of Insituform Netherlands to GMB Rioleringsstechnieken B.V., a Dutch company ("GMB"). In connection with the sale, the Company entered into a five-year tube supply agreement whereby GMB will buy liners from the Company.

During 2018, the Company's board of directors approved a plan to divest the Company's CIPP business in Australia ("Insituform Australia"). While restructuring actions in Insituform Australia led to improvements in operating results, an assessment of the long-term fit within the Company's portfolio led to the decision to divest the business. Accordingly, the Company has classified Insituform Australia's assets and liabilities as held for sale on the Consolidated Balance Sheets at December 31, 2019 and 2018. See Note 6. Additionally, see Note 17 for additional information on the sale of Insituform Australia, effective January 24, 2020.

In November 2018, the Company sold substantially all of the fixed assets and inventory from its CIPP operations in Denmark for a sale price of DKK 10.5 million (approximately \$1.6 million). In connection with the sale, the Company entered into a five-year exclusive tube-supply agreement whereby the buyers will purchase Insituform® CIPP liners from the Company. The buyers are also entitled to use the Insituform® trade name based on a trademark license granted for the same five-year time period.

In March 2017, the Company acquired Environmental Techniques Limited and its parent holding company, Killeen Trading Limited (collectively "Environmental Techniques"), for a purchase price of £6.5 million, approximately \$8.0 million, which was funded from the Company's international cash balances. Environmental Techniques provides trenchless drainage inspection, cleaning and rehabilitation services throughout the United Kingdom and the Republic of Ireland.

Corrosion Protection Segment (“Corrosion Protection”)

In October 2019, the Company sold its fifty-five percent (55%) interest in United Mexico, its Mexican Tite Liner® joint venture, to its joint venture partner, Miller Pipeline de Mexico, S.A. de C.V., a Mexican company (“Miller”). Miller owned the remaining forty-five percent (45%) interest in United Mexico. In connection with the sale, the Company entered into a long-term license agreement pursuant to which United Mexico will be the exclusive licensee in Mexico with respect to certain trademarks, patents and other intellectual property relating to the Company’s pipe lining business. The Company further expects to enter into a long-term agreement for the supply of equipment and consumables as well as the provision of services to United Mexico.

In August 2018, the Company sold substantially all of the assets of its wholly-owned subsidiary, The Bayou Companies, LLC and its fifty-one percent (51%) interest in Bayou Wasco Insulation, LLC. The sale price was \$46 million, consisting of \$38 million paid in cash at closing and \$8 million in a fully secured, two-year loan payable to Aegion. Aegion is also eligible to receive an additional \$4 million in total earn-out payments based on performance of the divested businesses in 2019 and 2020. Cash proceeds, net of customary closing costs, were used to repay outstanding borrowings on the Company’s line of credit. The sale resulted in a pre-tax loss of \$7.0 million during 2018, which was included in “Other expense” in the Consolidated Statements of Operations.

In May 2018, the Company acquired the operations of Hebna Inc., Hebna Canada Inc. and Hebna Corporation (collectively “Hebna”), for a purchase price of \$6.0 million. The transaction was funded from a combination of domestic and international cash balances, with fifty percent (50%) of the purchase price being paid by the Company’s joint venture in Oman, in which the Company is a fifty-one percent (51%) partner. Hebna provides pipeline lining services, including compressed-fit lining, slip-lining, liner and free-standing pipe fusing, pipeline assessment and integrity management, pipeline pigging and calibration, and roto-lining services primarily in the United States, Canada and Middle East.

Energy Services Segment (“Energy Services”)

In July 2018, the Company acquired the operations of Plant Performance Services LLC and P2S LLC (collectively “P2S”), for a purchase price of \$3.0 million. The transaction was funded from domestic cash balances. P2S specializes in general mechanical turnaround services, specialty welding services and field fabrication services primarily for the downstream oil and gas industry.

Purchase Price Accounting

The Company finalized its accounting for P2S and Hebna in 2019 and Environmental Techniques in 2018. There were no significant adjustments to the purchase price accounting in either period. In total, the transaction purchase price(s) to acquire P2S, Hebna and Environmental Techniques was approximately \$17.0 million, of which, identified assets included goodwill of \$7.3 million, intangible assets of \$5.5 million, property, plant and equipment of \$3.5 million and net working capital of \$0.7 million. The goodwill and definite-lived intangible assets associated with the P2S and Hebna acquisitions are deductible for tax purposes; whereas, the goodwill and definite-lived intangible assets associated with the Environmental Techniques acquisition are not deductible for tax purposes.

The Company’s acquisition of Environmental Techniques contributed revenues of \$9.5 million, \$7.5 million and \$4.0 million, and net income (loss) of \$(0.1) million, \$0.1 million and \$(0.7) million in 2019, 2018 and 2017, respectively. Revenue and net income contributions associated with Hebna and P2S were de minimus in 2019 and 2018.

2. ACCOUNTING POLICIES

Principles of Consolidation

The consolidated financial statements include the accounts of the Company, its wholly-owned subsidiaries and majority-owned subsidiaries in which the Company is deemed to be the primary beneficiary. All significant intercompany transactions and balances have been eliminated.

Accounting Estimates

The preparation of financial statements in conformity with accounting principles generally accepted in the United States 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.

Accumulated Other Comprehensive Loss

As set forth below, the Company's accumulated other comprehensive loss is comprised of three main components: (i) currency translation; (ii) derivatives; and (iii) gains and losses associated with the Company's defined benefit plan in the United Kingdom (in thousands):

	December 31,	
	2019	2018
Currency translation adjustments ⁽¹⁾	\$ (27,241)	\$ (41,107)
Derivative hedging activity	(4,522)	1,715
Pension activity	(931)	(898)
Total accumulated other comprehensive loss	\$ (32,694)	\$ (40,290)

⁽¹⁾ During 2019, as a result of selling or disposing of certain international entities, \$10.9 million was reclassified out of accumulated other comprehensive loss to "Other expense" in the Consolidated Statements of Operations.

For the Company's international subsidiaries, the local currency is generally the functional currency. Assets and liabilities of these subsidiaries are translated into U.S. dollars using rates in effect at the balance sheet date while revenues and expenses are translated into U.S. dollars using average exchange rates. The cumulative translation adjustment resulting from changes in exchange rates are included in the Consolidated Balance Sheets as a component of "Accumulated other comprehensive loss" in total stockholders' equity. Net foreign exchange transaction losses of \$0.5 million, \$0.6 million and \$2.2 million for 2019, 2018 and 2017, respectively, are included in "Other expense" in the Consolidated Statements of Operations.

Research and Development

The Company expenses research and development costs as incurred. Research and development costs of \$6.4 million, \$5.6 million and \$4.2 million for the years ended December 31, 2019, 2018 and 2017, respectively, are included in "Operating expenses" in the consolidated statements of operations.

Taxation

The Company provides for estimated income taxes payable or refundable on current year income tax returns as well as the estimated future tax effects attributable to temporary differences and carryforwards, based upon enacted tax laws and tax rates, and in accordance with FASB ASC 740, *Income Taxes* (“FASB ASC 740”). FASB ASC 740 also requires that a valuation allowance be recorded against any deferred tax assets that are not likely to be realized in the future. The determination is based on the Company’s ability to generate future taxable income and, at times, is dependent on its ability to implement strategic tax initiatives to ensure full utilization of recorded deferred tax assets. Should the Company not be able to implement the necessary tax strategies, it may need to record valuation allowances for certain deferred tax assets, including those related to foreign income tax benefits. Significant management judgment is required in determining the provision for income taxes, deferred tax assets and liabilities and any valuation allowances recorded against net deferred tax assets.

In accordance with FASB ASC 740, tax benefits from an uncertain tax position may be recognized when it is more likely than not that the position will be sustained upon examination, including resolutions of any related appeals or litigation processes, based on the technical merits. In addition, this recognition model includes a measurement attribute that measures the position as the largest amount of tax that is greater than 50% likely of being realized upon ultimate settlement in accordance with FASB ASC 740. This interpretation also provides guidance on derecognition, classification, interest and penalties, accounting in interim periods, disclosure and transition.

The Company recognizes tax liabilities in accordance with FASB ASC 740 and adjusts these liabilities when judgment changes as a result of the evaluation of new information not previously available. Due to the complexity of some of these uncertainties, the ultimate resolution may result in a payment that is materially different from the current estimate of the tax liabilities. These differences will be reflected as increases or decreases to income tax expense in the period in which they are determined. While the Company believes the resulting tax balances as of December 31, 2019 and 2018 were appropriately accounted for in accordance with FASB ASC 740, the ultimate outcome of such matters could result in favorable or unfavorable adjustments to the consolidated financial statements and such adjustments could be material.

Refer to Note 12 for additional information regarding taxes on income and the impact of the TCJA.

Earnings per Share

Earnings per share have been calculated using the following share information:

	Years Ended December 31,		
	2019	2018	2017
Weighted average number of common shares used for basic EPS	31,130,222	32,345,382	33,150,949
Effect of dilutive stock options and restricted and deferred stock unit awards	—	652,621	—
Weighted average number of common shares and dilutive potential common stock used for dilutive EPS	31,130,222	32,998,003	33,150,949

The Company excluded 529,539 restricted and deferred stock units in 2019 and 735,577 stock options and restricted and deferred stock units in 2017 from the diluted earnings per share calculation for the Company’s common stock because of the reported net loss for the periods. The Company excluded 4,049 and 73,897 stock options in 2018 and 2017, respectively, from the diluted earnings per share calculations for the Company’s common stock because they were anti-dilutive as their exercise prices were greater than the average market price of common shares for each period.

Purchase Price Accounting

The Company accounts for its acquisitions in accordance with FASB ASC 805, *Business Combinations*. The base cash purchase price plus the estimated fair value of any non-cash or contingent consideration given for an acquired business is allocated to the assets acquired (including identified intangible assets) and liabilities assumed based on the estimated fair values of such assets and liabilities. The excess of the total consideration over the aggregate net fair values assigned is recorded as goodwill. Contingent consideration, if any, is recognized as a liability as of the acquisition date with subsequent adjustments recorded in the consolidated statements of operations. Indirect and general expenses related to business combinations are expensed as incurred.

The Company typically determines the fair value of tangible and intangible assets acquired in a business combination using independent valuations that rely on management's estimates of inputs and assumptions that a market participant would use. Key assumptions include cash flow projections, growth rates, asset lives, and discount rates based on an analysis of weighted average cost of capital.

Classification of Current Assets and Current Liabilities

The Company includes in current assets and current liabilities certain amounts realizable and payable under construction contracts that may extend beyond one year. The construction periods on projects undertaken by the Company generally range from less than one month to 24 months.

Cash, Cash Equivalents and Restricted Cash

The Company classifies highly liquid investments with original maturities of 90 days or less as cash equivalents. Recorded book values are reasonable estimates of fair value for cash and cash equivalents.

Cash, cash equivalents and restricted cash reported within the Consolidated Balance Sheets and Consolidated Statements of Cash Flows are as follows (in thousands):

Balance sheet data	December 31,	
	2019	2018
Cash and cash equivalents	\$ 64,874	\$ 83,527
Restricted cash	1,348	1,359
Cash, cash equivalents and restricted cash	\$ 66,222	\$ 84,886

Restricted cash held in escrow primarily relates to funds reserved for legal requirements, deposits made in lieu of retention on specific projects performed for municipalities and state agencies, or advance customer payments and compensating balances for bank undertakings in Europe. Restricted cash related to operations is similar to retainage, and is, therefore, classified as a current asset, consistent with the Company's policy on retainage.

Inventories

Inventories are stated at the lower of cost (first-in, first-out) or net realizable value. Actual cost is used to value raw materials and supplies. Standard cost, which approximates actual cost, is used to value work-in-process, finished goods and construction materials. Standard cost includes direct labor, raw materials and manufacturing overhead based on normal capacity. For certain businesses within our Corrosion Protection segment, the Company uses actual costs or average costs for all classes of inventory.

Retainage

Many of the contracts under which the Company performs work contain retainage provisions. Retainage refers to that portion of revenue earned by the Company but held for payment by the customer pending satisfactory completion of the project. The Company generally invoices its customers periodically as work is completed. Under ordinary circumstances, collection from municipalities is made within 60 to 90 days of billing. In most cases, 5% to 15% of the contract value is withheld by the municipal owner pending satisfactory completion of the project. Collections from other customers are generally made within 30 to 45 days of billing. Unless reserved, the Company believes that all amounts retained by customers under such provisions are fully collectible. Retainage on active contracts is classified as a current asset regardless of the term of the contract. Retainage is generally collected within one year of the completion of a contract, although collection can extend beyond one year from time to time. As of December 31, 2019, retainage receivables aged greater than 365 days approximated 18% of the total retainage balance and collectibility was assessed as described in the allowance for doubtful accounts section below.

Allowance for Doubtful Accounts

Management makes estimates of the uncollectibility of accounts receivable and retainage. The Company records an allowance based on specific accounts to reduce receivables, including retainage, to the amount that is expected to be collected. The specific allowances are reevaluated and adjusted as additional information is received. After all reasonable attempts to collect the receivable or retainage have been explored, the account is written off against the allowance. The Company also includes reserves related to certain accounts receivable that may be in litigation or dispute or are aged.

Long-Lived Assets

Property, plant and equipment and other identified intangibles (primarily customer relationships, patents and acquired technologies, trademarks, licenses and non-compete agreements) are recorded at cost, net of accumulated depreciation, amortization and impairment, and, except for goodwill, are depreciated or amortized on a straight-line basis over their estimated useful lives. Changes in circumstances such as technological advances, changes to the Company's business model or changes in the Company's capital strategy can result in the actual useful lives differing from the Company's estimates. If the Company determines that the useful life of its property, plant and equipment or its identified intangible assets should be shortened, the Company would depreciate or amortize the net book value in excess of the salvage value over its revised remaining useful life, thereby increasing depreciation or amortization expense.

Long-lived assets, including property, plant and equipment and other intangibles, are reviewed for impairment whenever events or changes in circumstances indicate that the carrying value of an asset may not be recoverable. Such impairment tests are based on a comparison of undiscounted cash flows to the recorded value of the asset. The estimate of cash flow is based upon, among other things, assumptions about expected future operating performance. The Company's estimates of undiscounted cash flow may differ from actual cash flow due to, among other things, technological changes, economic conditions, changes to its business model or changes in its operating performance. If the sum of the undiscounted cash flows is less than the carrying value, the Company recognizes an impairment loss, measured as the amount by which the carrying value exceeds the fair value of the asset.

Impairment Review – 2017

As part of the Restructuring, the Company exited all non-pipe related contract applications for the Tyfo[®] system in North America. As a result of this action, the Company evaluated the fair value of long-lived assets in its Fyfe reporting unit in accordance with FASB ASC 360, *Property, Plant and Equipment* ("FASB ASC 360"). The results of the Fyfe reporting unit and its related asset groups are reported within the Infrastructure Solutions reportable segment.

Based on the results of the valuation, the carrying amount of certain long-lived assets for the Fyfe North America asset group exceeded the fair value. Accordingly, the Company recorded impairment charges of \$3.4 million to trademarks, \$20.8 million to customer relationships and \$16.8 million to patents and acquired technology in 2017. The impairment charges were recorded to “Definite-lived intangible asset impairment” in the Consolidated Statement of Operations. Property, plant and equipment were determined to have a carrying value that exceeded fair value; thus, no impairment was recorded.

The fair value estimates described above were determined using observable inputs and significant unobservable inputs, which are based on level 3 inputs as defined in the Fair Value Measurements section below.

Goodwill

Under FASB ASC 350, the Company conducts an impairment test of goodwill on an annual basis or when events or changes in circumstances indicate that the carrying value of goodwill may not be recoverable. An impairment charge will be recognized to the extent that the fair value of a reporting unit is less than its carrying value. Factors that could potentially trigger an impairment review include (but are not limited to):

- significant underperformance of a segment relative to expected, historical or forecasted operating results;
- significant negative industry or economic trends;
- significant changes in the strategy for a segment including extended slowdowns in the segment’s market;
- a decrease in market capitalization below the Company’s book value; and
- a significant change in regulations.

Whether during the annual impairment assessment or during a trigger-based impairment review, the Company estimates the fair value of its reporting units and compares such fair value to the carrying value of those reporting units to determine if there are any indications of goodwill impairment.

Fair value of reporting units is estimated using a combination of two valuation methods: a market approach and an income approach with each method given equal weight in estimating the fair value assigned to each reporting unit. Absent an indication of fair value from a potential buyer or similar specific transaction, the Company believes the use of these two methods provides a reasonable estimate of a reporting unit’s fair value. Assumptions common to both methods are operating plans and economic outlooks, which are used to forecast future revenues, earnings and after-tax cash flows for each reporting unit. These assumptions are applied consistently for both methods.

The market approach estimates fair value by first determining earnings before interest, taxes, depreciation and amortization (“EBITDA”) multiples for comparable publicly-traded companies with similar characteristics of the reporting unit. The EBITDA multiples for comparable companies are based upon current enterprise value. The enterprise value is based upon current market capitalization and includes a control premium. The Company believes this approach is appropriate because it provides a fair value estimate using multiples from entities with operations and economic characteristics comparable to its reporting units.

The income approach is based on forecasted future (debt-free) cash flows that are discounted to present value using factors that consider timing and risk of future cash flows. The Company believes this approach is appropriate because it provides a fair value estimate based upon the reporting unit’s expected long-term operating cash flow performance. Discounted cash flow projections are based on financial forecasts developed from operating plans and economic outlooks, growth rates, estimates of future expected changes in operating margins, terminal value growth rates, future capital expenditures and changes in working capital requirements. Estimates of discounted cash flows may differ from actual cash flows due to, among other things, changes in economic conditions, changes to business models, changes in the Company’s weighted average cost of capital, or changes in operating performance.

The discount rate applied to the estimated future cash flows is one of the most significant assumptions utilized under the income approach. The Company determines the appropriate discount rate for each of its reporting units based on the weighted average cost of capital (“WACC”) for each individual reporting unit. The WACC takes into account both the pre-tax cost of debt and cost of equity (including the risk-free rate on twenty year U.S. Treasury bonds), and certain other company-specific and market-based factors. As each reporting unit has a different risk profile based on the nature of its operations, the WACC for each reporting unit is adjusted, as appropriate, to account for company-specific risks. Accordingly, the WACC for each reporting unit may differ.

Annual Impairment Assessment – October 1, 2019

The Company had six reporting units for purposes of assessing goodwill at October 1, 2019 as follows: Municipal Pipe Rehabilitation, Fyfe, Corpro, United Pipeline Systems, Coating Services and Energy Services.

Significant assumptions used in the Company’s October 2019 goodwill review included: (i) discount rates ranging from 12.0% to 16.0%; (ii) annual revenue growth rates generally ranging from 1.6% to 4.9%; (iii) operating margin stability in the short term related to certain reporting units affected by the Restructuring, but slightly increased operating margins long term; and (iv) peer group EBITDA multiples.

The Company’s assessment of each reporting unit’s fair value in relation to its respective carrying value yielded no reporting units with a fair value below carrying value or within 10 percent of its carrying value. The Energy Services reporting unit had a fair value only slightly above 10 percent of its carrying value. The Energy Services reporting unit, which had \$48.0 million of goodwill recorded at the impairment testing date, has several large customers and primarily operates in the California downstream oil and gas market, which has experienced significant market changes in recent years. Projected cash flows were based on continued strength in the Central California downstream energy market and a continued, growing relationship with its primary customer base. If these assumptions do not materialize in a manner consistent with Company’s expectations, there is risk of impairment to recorded goodwill.

Impairment Review – 2017

As part of the Restructuring, the Company exited all non-pipe related contract applications for the Tyfo[®] system in North America. As a result of this action, the Company evaluated the goodwill of its Fyfe reporting unit and determined that a triggering event occurred. Based on the impairment analysis, the Company determined that recorded goodwill at the Fyfe reporting unit was impaired by \$45.4 million, which was recorded to “Goodwill impairment” in the Consolidated Statement of Operations during 2017. As of December 31, 2017, the Company had remaining Fyfe goodwill of \$9.6 million. Projected cash flows were based, in part, on the ability to grow third-party product sales and pressure pipe contracting in North America, and maintaining a presence in other international markets. If these assumptions do not materialize in a manner consistent with Company’s expectations, there is risk of additional impairment to recorded goodwill.

Fair Value Measurements

FASB ASC 820, *Fair Value Measurements* (“FASB ASC 820”), defines fair value and establishes a framework for measuring and disclosing fair value instruments. The guidance establishes a three-tier fair value hierarchy, which prioritizes the inputs used in measuring fair value. These tiers include:

- Level 1 – defined as quoted prices in active markets for identical instruments;
- Level 2 – defined as inputs other than quoted prices in active markets that are either directly or indirectly observable;
- Level 3 – defined as unobservable inputs in which little or no market data exists, therefore requiring an entity to develop its own assumptions.

The Company uses these levels of hierarchy to measure the fair value of certain financial instruments on a recurring basis, such as for derivative instruments; on a non-recurring basis, such as for acquisitions and impairment testing; for disclosure purposes, such as for long-term debt; and for other applications, as discussed in their respective footnotes. Changes in assumptions or estimation methods could affect the fair value estimates; however, the Company does not believe any such changes would have a material impact on its financial condition, results of operations or cash flows. Other financial instruments including cash and cash equivalents and short-term borrowings, including notes payable, are recorded at cost, which approximates fair value, which is based on Level 2 inputs as previously defined. The Company had no transfers between Level 1, 2 or 3 inputs during 2019, 2018 or 2017.

Investments in Variable Interest Entities

The Company evaluates all transactions and relationships with variable interest entities (“VIE”) to determine whether the Company is the primary beneficiary of the entities in accordance with FASB ASC 810, *Consolidation*. Other than the sale of the Company’s interest in United Mexico, there were no changes in the Company’s VIEs during 2019.

Financial data for consolidated variable interest entities are summarized in the following tables (in thousands):

Balance sheet data	December 31,	
	2019	2018
Current assets	\$ 18,304	\$ 33,066
Non-current assets	7,635	6,466
Current liabilities	8,261	12,953
Non-current liabilities	1,962	8,780

Statement of operations data	Years Ended December 31,		
	2019 ⁽¹⁾	2018 ⁽²⁾	2017
Revenue	\$ 28,403	\$ 49,809	\$ 91,947
Gross profit	9,508	9,898	15,194
Net (income) loss attributable to Aegion Corporation	(1,100)	(1,374)	3,432

⁽¹⁾ Includes activity from our Tite Liner[®] joint venture in Mexico, which was sold during the fourth quarter of 2019.

⁽²⁾ Includes activity from our pipe coating and insulation joint venture in Louisiana, which was sold during the third quarter of 2018.

Accounting Standards Updates

In December 2019, the FASB issued Accounting Standards Update No. 2019-12, *Simplifying the Accounting for Income Taxes*, which removes certain exceptions to the general principles in Topic 740 and also clarifies and amends existing guidance to improved consistent application. The guidance is effective for the Company's fiscal year beginning January 1, 2021, including interim periods within that fiscal year. Early adoption is permitted. The Company is currently evaluating the impact this guidance will have on its consolidated financial statements and does not expect it will have a material impact on the Company's consolidated financial statements.

In August 2018, the FASB issued Accounting Standards Update No. 2018-13, *Fair Value Measurement: Disclosure Framework—Changes to the Disclosure Requirements for Fair Value Measurement*, which modifies the disclosure requirements for Level 1, Level 2 and Level 3 instruments in the fair value hierarchy. The guidance is effective for the Company's fiscal year beginning January 1, 2020, including interim periods within that fiscal year. The adoption of this standard is not expected to have a material impact on its consolidated financial statements.

In February 2018, the FASB issued Accounting Standards Update No. 2018-02, *Reclassification of Certain Tax Effects from Accumulated Other Comprehensive Income*, which permits a company to reclassify the income tax effects of the Tax Cuts and Jobs Act on items within accumulated other comprehensive income to retained earnings. Companies may adopt the new guidance using one of two transition methods: (i) retrospective to each period (or periods) in which the income tax effects are recognized, or (ii) at the beginning of the period of adoption. The Company adopted this standard effective January 1, 2019 and elected not to reclassify the tax effects due to the immaterial impact on the Company's consolidated financial statements.

In June 2016, the FASB issued Accounting Standards Update No. 2016-13, *Measurement of Credit Losses on Financial Instruments*, which changes the way in which entities estimate and present credit losses for most financial assets, including accounts receivable. The guidance is effective for the Company's fiscal year beginning January 1, 2020, including interim periods within that fiscal year. For the Company's trade receivables, certain other receivables and certain other financial instruments, it will be required to use a new forward-looking "expected" credit loss model based on historical loss rates that will replace the existing "incurred" credit loss model, which will generally result in earlier recognition of allowances for credit losses. The Company adopted this standard effective January 1, 2020, the impact of which was not material on the Company's consolidated financial statements.

In February 2016, the FASB issued Accounting Standards Update No. 2016-02, *Leases (Topic 842)*, which requires lessees to present right-of-use assets and lease liabilities on the balance sheet for all leases with lease terms longer than twelve months. The Company adopted this standard, effective January 1, 2019, using the adoption-date transition provision, which recognizes and measures leases existing at January 1, 2019 but without retrospective application. See Note 7.

3. REVENUES

On January 1, 2018, the Company adopted FASB ASC 606, *Revenue from Contracts with Customers* ("FASB ASC 606") for all contracts that were not completed using the modified retrospective transition method. The Company recognized the cumulative effect of initially applying FASB ASC 606 as an adjustment to the opening balance of retained earnings. Prior period information has not been restated and continues to be reported under the accounting standards in effect for those periods.

The Company recorded a net reduction to opening retained earnings of \$0.3 million as of January 1, 2018 due to the cumulative impact of adopting FASB ASC 606, with the impact primarily related to royalty license fee revenues. The impact to revenues for the years ended December 31, 2019 and 2018 was a decrease of \$0.4 million and an increase of \$1.8 million, respectively, as a result of applying FASB ASC 606.

Performance Obligations

A performance obligation is a promise in a contract to transfer a distinct good or service to the customer, and is the unit of account in FASB ASC 606. A contract's transaction price is allocated to each distinct performance obligation and recognized as revenue when, or as, the performance obligation is satisfied. For contracts in which construction, engineering and installation services are provided, there is generally a single performance obligation as the promise to transfer the individual goods or services is not separately identifiable from other promises in the contracts and, therefore, not distinct. The bundle of goods and services represents the combined output for which the customer has contracted. For product sales contracts with multiple performance obligations where each product is distinct, the Company allocates the contract's transaction price to each performance obligation using its best estimate of the standalone selling price of each distinct good in the contract. For royalty license agreements whereby intellectual property is transferred to the customer, there is a single performance obligation as the license is not separately identifiable from the other goods and services in the contract.

The Company's performance obligations are satisfied over time as work progresses or at a point in time. Revenues from products and services transferred to customers over time accounted for 92.3%, 93.5% and 93.5% of revenues for the years ended December 31, 2019, 2018 and 2017, respectively. Revenues from construction, engineering and installation services are recognized over time using an input measure (e.g., costs incurred to date relative to total estimated costs at completion) to measure progress toward satisfying performance obligations. Incurred cost represents work performed, which corresponds with, and thereby best depicts, the transfer of control to the customer. Contract costs include labor, material, overhead and, when appropriate, general and administrative expenses. Revenues from maintenance contracts are structured such that the Company has the right to consideration from a customer in an amount that corresponds directly with the performance completed to date. Therefore, the Company utilizes the practical expedient in FASB ASC 606-55-255, which allows the Company to recognize revenue in the amount to which it has the right to invoice. Applying this practical expedient, the Company is not required to disclose the transaction price allocated to remaining performance obligations under these agreements. Revenues from royalty license arrangements are recognized either at contract inception when the license is transferred or when the royalty has been earned, depending on whether the contract contains fixed consideration. Revenues from stand-alone product sales are recognized at a point in time, when control of the product is transferred to the customer. Revenues from these types of contracts accounted for 7.7%, 6.5% and 6.5% of revenues for the years ended December 31, 2019, 2018 and 2017, respectively.

On December 31, 2019, the Company had \$464.6 million of remaining performance obligations from construction, engineering and installation services. The Company estimates that approximately \$452.8 million, or 97.5%, of the remaining performance obligations at December 31, 2019 will be realized as revenues in the next 12 months.

Contract Estimates

Accounting for long-term contracts involves the use of various techniques to estimate total contract revenue and costs. For long-term contracts, the Company estimates the profit on a contract as the difference between the total estimated revenue and expected costs to complete a contract, and recognizes that profit over the life of the contract. Contract estimates are based on various assumptions to project the outcome of future events that sometimes span multiple years. These assumptions include labor productivity and availability; the complexity of the work to be performed; the cost and availability of materials; the performance of subcontractors; and the availability and timing of funding from the customer.

The Company's contracts do not typically contain variable consideration or other provisions that increase or decrease the transaction price. In rare situations where the transaction price is not fixed, the Company estimates variable consideration at the most likely amount to which it expects to be entitled. The Company includes estimated amounts in the transaction price to the extent it is probable that a significant reversal of cumulative revenue recognized will not occur when the uncertainty associated with the variable consideration is resolved. For royalty license agreements, the Company applies the sales-based and usage-based royalty exception and recognizes royalties at the later of: (i) when the subsequent sale or usage occurs; or (ii) the satisfaction or partial satisfaction of the performance obligation to which some or all of the sales- or usage-based royalty has been allocated. For contracts in which a portion of the transaction price is retained and paid after the good or service has been transferred to the customer, the Company does not recognize a significant financing component. The primary purpose of the retainage payment is often to provide the customer with assurance that the Company will perform its obligations under the contract, rather than to provide financing to the customer.

The Company's estimates of variable consideration and determination of whether to include estimated amounts in the transaction price are based largely on an assessment of anticipated performance and all information (historical, current and forecasted) that is reasonably available.

Revenue by Category

The following tables summarize revenues by segment and geography (in thousands):

	Year Ended December 31, 2019			
	Infrastructure Solutions	Corrosion Protection	Energy Services	Total
Geographic region:				
United States	\$ 427,220	\$ 159,408	\$ 328,048	\$ 914,676
Canada	65,370	57,663	—	123,033
Europe	49,157	15,121	—	64,278
Other foreign	49,050	62,898	—	111,948
Total revenues	\$ 590,797	\$ 295,090	\$ 328,048	\$ 1,213,935

	Year Ended December 31, 2018			
	Infrastructure Solutions	Corrosion Protection	Energy Services	Total
Geographic region:				
United States	\$ 430,187	\$ 200,397	\$ 335,707	\$ 966,291
Canada	62,292	71,320	—	133,612
Europe	54,567	12,227	—	66,794
Other foreign	57,075	109,796	—	166,871
Total revenues	\$ 604,121	\$ 393,740	\$ 335,707	\$ 1,333,568

	Year Ended December 31, 2017			
	Infrastructure Solutions	Corrosion Protection	Energy Services	Total
Geographic region:				
United States	\$ 437,944	\$ 299,643	\$ 290,726	\$ 1,028,313
Canada	60,675	79,059	—	139,734
Europe	58,520	13,319	—	71,839
Other foreign	55,015	64,118	—	119,133
Total revenues	\$ 612,154	\$ 456,139	\$ 290,726	\$ 1,359,019

The following tables summarize revenues by segment and contract type (in thousands):

	Year Ended December 31, 2019			
	Infrastructure Solutions	Corrosion Protection	Energy Services	Total
Contract type:				
Fixed fee	\$ 523,042	\$ 203,887	\$ 704	\$ 727,633
Time and materials	—	65,084	327,344	392,428
Product sales	67,512	26,119	—	93,631
License fees	243	—	—	243
Total revenues	\$ 590,797	\$ 295,090	\$ 328,048	\$ 1,213,935

	Year Ended December 31, 2018			
	Infrastructure Solutions	Corrosion Protection	Energy Services	Total
Contract type:				
Fixed fee	\$ 556,642	\$ 296,217	\$ 16,134	\$ 868,993
Time and materials	—	58,372	319,573	377,945
Product sales	45,030	39,151	—	84,181
License fees	2,449	—	—	2,449
Total revenues	\$ 604,121	\$ 393,740	\$ 335,707	\$ 1,333,568

	Year Ended December 31, 2017			
	Infrastructure Solutions	Corrosion Protection	Energy Services	Total
Contract type:				
Fixed fee	\$ 569,701	\$ 353,480	\$ 9,225	\$ 932,406
Time and materials	—	56,288	281,501	337,789
Product sales	41,878	46,371	—	88,249
License fees	575	—	—	575
Total revenues	\$ 612,154	\$ 456,139	\$ 290,726	\$ 1,359,019

Contract Balances

The timing of revenue recognition, billings and cash collections results in billed accounts receivable, contract assets and contract liabilities on the Consolidated Balance Sheets. Contract assets represent work performed that could not be billed either due to contract stipulations or the required contractual documentation has not been finalized. Substantially all unbilled amounts are expected to be billed and collected within one year.

For fixed fee and time-and-materials based contracts, amounts are billed as work progresses in accordance with agreed-upon contractual terms, either at periodic intervals or upon achievement of contractual milestones. Generally, billing occurs subsequent to revenue recognition, resulting in contract assets. For some royalty license arrangements, minimum amounts are billed over the license term as quarterly royalty amounts are determined. This results in contract assets as the Company recognizes revenue for the license when the license is transferred to the customer at contract inception. The Company's contract liabilities consist of advance payments, billings in excess of revenue recognized and deferred revenue.

The Company's contract assets and contract liabilities are reported in a net position on a contract-by-contract basis at the end of each reporting period. Advance payments, billings in excess of revenue recognized and deferred revenue are each classified as current.

Net contract assets (liabilities) consisted of the following (in thousands):

	December 31,	
	2019 ⁽¹⁾	2018 ⁽²⁾
Contract assets – current	\$ 51,092	\$ 62,467
Contract liabilities – current	(37,562)	(32,339)
Net contract assets	\$ 13,530	\$ 30,128

⁽¹⁾ Amounts exclude contract assets of \$5.4 million and contract liabilities of \$0.1 million that were classified as held for sale at December 31, 2019 (see Note 6).

⁽²⁾ Amounts exclude contract assets of \$1.8 million and contract liabilities of less than \$0.1 million that were classified as held for sale at December 31, 2018 (see Note 6).

Included in the change of total net contract assets was a \$11.4 million decrease in contract assets, primarily related to the timing between work performed on open contracts and contractual billing terms, and a \$5.2 million increase in contract liabilities, primarily related to the timing of customer advances on certain contracts.

Substantially all of the \$32.3 million and \$51.6 million contract liabilities balances at December 31, 2018 and December 31, 2017, respectively, were recognized in revenues during 2019 and 2018, respectively.

Impairment losses recognized on receivables and contract assets were not material during 2019, 2018 and 2017.

4. RESTRUCTURING

On July 28, 2017, the Company's board of directors approved the Restructuring. As part of the Restructuring, the Company announced plans to: (i) divest Bayou; (ii) exit all non-pipe related contract applications for the Tyfo[®] system in North America; (iii) right-size the cathodic protection services operation in Canada and the CIPP businesses in Australia and Denmark; and (iv) reduce corporate and other operating costs.

During 2018 and 2019, the Company's board of directors approved additional actions with respect to the Restructuring, which included the decisions to: (i) divest the Australia and Denmark CIPP businesses; (ii) take actions to further optimize operations within North America, including measures to reduce consolidated operating costs; and (iii) divest or otherwise exit multiple additional international businesses, including: (a) the Company's cathodic protection installation activities in the Middle East, including Corppower International Limited, the Company's cathodic protection materials manufacturing and production joint venture in Saudi Arabia; (b) United Pipeline de Mexico S.A. de C.V., the Company's Tite Liner[®] joint venture in Mexico; (c) the Company's Tite Liner[®] businesses in Brazil and Argentina; (d) Aegion South Africa Proprietary Limited, the Company's Tite Liner[®] and CIPP joint venture in the Republic of South Africa; and (e) the Company's CIPP contract installation operations in England, the Netherlands, Spain and Northern Ireland.

The Company completed the divestitures of Bayou and the Denmark CIPP business in 2018. The Company also completed the divestitures of the Netherlands CIPP business and its Tite Liner[®] joint venture in Mexico in 2019, as well as the shutdown of activities for the CIPP business in England. The Company completed the divestitures of CIPP operations in Australia and Spain in early 2020 (see Note 17). Remaining divestiture and shutdown activities include the sale of the Northern Ireland contracting operation and minor final dissolution activities in South America and South Africa, all of which is expected to be completed in the first half of 2020. Additionally, the exit of the Company's cathodic protection installation activities in the Middle East is substantially complete, though management expects minimal wind-down activities will extend through the second quarter of 2020 related to a small number of projects remaining in backlog.

As part of efforts to optimize the cathodic protection operations in North America, management initiated plans during the fourth quarter of 2019 to further downsize operations in the U.S., including the closure of three branch offices and the exit of capital intensive drilling activities at four branch offices. These actions included a reduction of approximately 20% of the cathodic protection domestic workforce and an exit of drilling activities that contributed approximately 20% to our cathodic protection domestic revenues in 2019. Management expects these actions to improve our cathodic protection cost structure in the U.S., eliminate unprofitable results in certain parts of the business and reduce consolidated annual expenses for the business overall. Also during the fourth quarter of 2019, the Company reduced corporate headcount and took other actions to reduce corporate costs.

Total pre-tax restructuring and related impairment charges since the Restructuring's inception were \$171.9 million (\$155.7 million post-tax) and consisted of cash charges totaling \$45.3 million and non-cash charges totaling \$126.6 million. Cash charges included employee severance, retention, extension of benefits, employment assistance programs, early lease and contract termination costs and other restructuring charges associated with the restructuring efforts described above. Non-cash charges included (i) \$86.4 million related to goodwill and long-lived asset impairment charges recorded in 2017 as part of exiting the non-pipe FRP contracting market in North America, and (ii) \$40.2 million related to allowances for accounts receivable, write-offs of inventory and long-lived assets, impairment of definite-lived intangible assets, release of cumulative currency translation adjustments as well as net losses on the disposal of both domestic and international entities. The Company reduced headcount by approximately 650 employees as a result of these actions.

The Company is substantially complete with respect to its restructuring efforts and expects to incur additional cash charges of between \$2 million and \$4 million. Also, the Company could incur additional non-cash charges primarily associated with the release of cumulative currency translation adjustments and losses on the closure or liquidation of international entities. The identified charges are primarily focused in the international operations of both Infrastructure Solutions and Corrosion Protection, but will also include certain charges in Energy Services and Corporate to a lesser extent.

During 2019, 2018 and 2017, the Company recorded pre-tax restructuring charges as follows (in thousands):

	Year Ended December 31, 2019				
	Infrastructure Solutions	Corrosion Protection	Energy Services	Corporate	Total
Severance and benefit related costs	\$ 938	\$ 3,179	\$ 553	\$ 1,685	\$ 6,355
Contract termination costs	601	1,089	234	98	2,022
Relocation and other moving costs	190	408	55	—	653
Other restructuring costs ⁽¹⁾	13,642	4,592	819	4,258	23,311
Total pre-tax restructuring charges	\$ 15,371	\$ 9,268	\$ 1,661	\$ 6,041	\$ 32,341

⁽¹⁾ Includes charges primarily related to certain wind-down costs, inventory obsolescence, fixed asset disposals, release of cumulative currency translation adjustments and other restructuring-related costs in connection with exiting or divesting the CIPP operations in Europe and Australia, exiting the cathodic protection operations in the Middle East and right-sizing the cathodic protection services operation in North America.

	Year Ended December 31, 2018				
	Infrastructure Solutions	Corrosion Protection	Energy Services	Corporate	Total
Severance and benefit related costs	\$ 3,038	\$ 1,094	\$ 234	\$ 170	\$ 4,536
Contract termination costs	1,999	25	—	150	2,174
Relocation and other moving costs	184	—	—	—	184
Other restructuring costs ⁽¹⁾	13,311	7,936	28	1,317	22,592
Total pre-tax restructuring charges	\$ 18,532	\$ 9,055	\$ 262	\$ 1,637	\$ 29,486

⁽¹⁾ Includes charges primarily related to certain wind-down costs, allowances for accounts receivable, fixed asset disposals and other restructuring-related costs in connection with exiting non-pipe-related contract applications for the Tyfo[®] system in North America, divesting the CIPP operations in Australia and Denmark, and exiting the cathodic protection operations in the Middle East. Amounts also include goodwill and definite-lived intangible asset impairments related to Denmark and definite-lived intangible asset impairments related to the cathodic protection operations in the Middle East.

	Year Ended December 31, 2017				
	Infrastructure Solutions	Corrosion Protection	Corporate	Total	
Severance and benefit related costs	\$ 4,274	\$ 2,442	\$ 629	\$ 7,345	
Contract termination costs	4,545	775	—	5,320	
Relocation and other moving costs	26	121	—	147	
Other restructuring costs ⁽¹⁾	8,434	1,522	975	10,931	
Total pre-tax restructuring charges	\$ 17,279	\$ 4,860	\$ 1,604	\$ 23,743	

⁽¹⁾ Includes charges primarily related to exiting non-pipe-related applications for the Tyfo[®] system in North America and right-sizing the cathodic protection services operation in Canada, inclusive of wind-down costs, professional fees, patent write offs, fixed asset disposals and certain other restructuring and related charges.

Restructuring costs related to severance, other termination benefit costs and early lease and contract termination costs were \$9.0 million, \$6.9 million and \$12.8 million in 2019, 2018 and 2017, respectively, and are reported on a separate line in the Consolidated Statements of Operations.

The following tables summarize restructuring charges recognized in 2019, 2018 and 2017 as presented in their affected line in the Consolidated Statements of Operations (in thousands):

	Year Ended December 31, 2019				
	Infrastructure Solutions	Corrosion Protection	Energy Services	Corporate	Total ⁽¹⁾
Cost of revenues	\$ 469	\$ 1,869	\$ —	\$ —	\$ 2,338
Operating expenses	5,349	1,131	819	3,444	10,743
Restructuring and related charges	1,729	4,676	842	1,783	9,030
Other expense ⁽²⁾	7,824	1,592	—	814	10,230
Total pre-tax restructuring charges	\$ 15,371	\$ 9,268	\$ 1,661	\$ 6,041	\$ 32,341

⁽¹⁾ Total pre-tax restructuring charges include cash charges of \$19.5 million and non-cash charges of \$12.8 million. Cash charges consist of charges incurred during the year that will be settled in cash, either during the current period or future periods.

⁽²⁾ Includes charges related to the loss on disposal of restructured entities, including the release of cumulative currency translation adjustments resulting from those disposals.

	Year Ended December 31, 2018				
	Infrastructure Solutions	Corrosion Protection	Energy Services	Corporate	Total ⁽¹⁾
Cost of revenues	\$ 1,281	\$ 600	\$ —	\$ —	\$ 1,881
Operating expenses	7,291	4,547	28	1,317	13,183
Goodwill impairment	1,389	—	—	—	1,389
Definite-lived intangible asset impairment	870	1,299	—	—	2,169
Restructuring and related charges	5,221	1,119	234	320	6,894
Other expense ⁽²⁾	2,480	1,490	—	—	3,970
Total pre-tax restructuring charges	\$ 18,532	\$ 9,055	\$ 262	\$ 1,637	\$ 29,486

⁽¹⁾ Total pre-tax restructuring charges include cash charges of \$12.1 million and non-cash charges of \$17.4 million. Cash charges consist of charges incurred during the year that will be settled in cash, either during the current period or future periods.

⁽²⁾ Includes charges related to the loss on disposal of restructured entities, including the release of cumulative currency translation adjustments resulting from those disposals.

	Year Ended December 31, 2017			
	Infrastructure Solutions	Corrosion Protection	Corporate	Total ⁽¹⁾
Cost of revenues	\$ 30	\$ 15	\$ —	\$ 45
Operating expenses	8,404	1,507	973	10,884
Restructuring and related charges	8,845	3,338	631	12,814
Total pre-tax restructuring charges	\$ 17,279	\$ 4,860	\$ 1,604	\$ 23,743

⁽¹⁾ Total pre-tax restructuring charges include cash charges of \$13.6 million and non-cash charges of \$10.1 million. Cash charges consist of charges incurred during the year that will be settled in cash, either during the current period or future periods.

The following tables summarize restructuring activity during 2019, 2018 and 2017 (in thousands):

	Reserves at December 31, 2018	2019 Charge to Income	Foreign Currency Translation	Utilized in 2019		Reserves at December 31, 2019
				Cash ⁽¹⁾	Non-Cash	
Severance and benefit related costs	\$ 1,742	\$ 6,355	\$ (11)	\$ 3,697	\$ —	\$ 4,389
Contract termination costs	359	2,022	(20)	1,408	—	953
Relocation and other moving costs	—	653	(3)	283	—	367
Other restructuring costs	311	23,311	(4)	8,457	12,782	2,379
Total pre-tax restructuring charges	\$ 2,412	\$ 32,341	\$ (38)	\$ 13,845	\$ 12,782	\$ 8,088

	Reserves at December 31, 2017	2018 Charge to Income	Foreign Currency Translation	Utilized in 2018		Reserves at December 31, 2018
				Cash ⁽¹⁾	Non-Cash	
Severance and benefit related costs	\$ 3,864	\$ 4,536	\$ (69)	\$ 6,589	\$ —	\$ 1,742
Contract termination costs	650	2,174	(19)	2,446	—	359
Relocation and other moving costs	—	184	—	184	—	—
Other restructuring costs	675	22,592	(3)	5,581	17,372	311
Total pre-tax restructuring charges	\$ 5,189	\$ 29,486	\$ (91)	\$ 14,800	\$ 17,372	\$ 2,412

	2017 Charge to Income	Utilized in 2017		Reserves at December 31, 2017
		Cash ⁽¹⁾	Non-Cash	
Severance and benefit related costs	\$ 7,345	\$ 3,481	\$ —	\$ 3,864
Contract termination costs	5,320	2,706	1,964	650
Relocation and other moving costs	147	147	—	—
Other restructuring costs	10,931	2,140	8,116	675
Total pre-tax restructuring charges	\$ 23,743	\$ 8,474	\$ 10,080	\$ 5,189

⁽¹⁾ Refers to cash utilized to settle charges during the year.

5. SUPPLEMENTAL BALANCE SHEET INFORMATION

Allowance for Doubtful Accounts

Activity in the allowance for doubtful accounts is summarized as follows (in thousands):

	Years Ended December 31,		
	2019	2018	2017
Balance, beginning of year	\$ 9,695	\$ 5,775	\$ 6,098
Bad debt expense ⁽¹⁾	(1,259)	8,188	3,155
Write-offs and adjustments	(1,212)	(4,268)	(3,478)
Balance, end of year	\$ 7,224	\$ 9,695	\$ 5,775

⁽¹⁾ The Company recorded bad debt expense (reversals) of less than (\$0.1) million, \$5.3 million and \$0.4 million in 2019, 2018 and 2017, respectively, as part of the restructuring efforts (see Note 4) and was primarily due to the exiting of certain low-return businesses mainly in foreign locations.

Inventories

Inventories are summarized as follows (in thousands):

	December 31,	
	2019	2018 ⁽¹⁾
Raw materials and supplies	\$ 27,415	\$ 29,343
Work-in-process	5,739	2,510
Finished products	14,937	15,205
Construction materials	9,102	9,379
Total	\$ 57,193	\$ 56,437

⁽¹⁾ During 2018, the Company incurred non-cash charges of \$2.8 million related to estimates for inventory obsolescence within its cathodic protection operations. The charges were recorded to cost of revenues in the Consolidated Statement of Operations.

Property, Plant and Equipment

Property, plant and equipment consisted of the following (in thousands):

	Estimated Useful Lives (Years)	December 31,	
		2019	2018
Land and land improvements		\$ 5,359	\$ 10,521
Buildings and improvements	5 — 40	50,589	47,430
Machinery and equipment	4 — 10	143,128	147,918
Furniture and fixtures	3 — 10	35,440	37,471
Autos and trucks	3 — 10	47,197	51,129
Construction in progress		7,475	14,626
		289,188	309,095
Less – Accumulated depreciation		(188,097)	(202,036)
Property, plant & equipment, less accumulated depreciation		\$ 101,091	\$ 107,059

Depreciation expense was \$22.2 million, \$23.9 million and \$29.3 million for the years ended December 31, 2019, 2018 and 2017, respectively. The decrease in 2018 was primarily due to the held for sale classification, and subsequent sale thereof, of Bayou's assets and a partial year classification for Australia's assets during 2018.

Accrued Expenses

Accrued expenses consisted of the following (in thousands):

	December 31,	
	2019	2018
Vendor and other accrued expenses	\$ 30,730	\$ 35,450
Estimated casualty and healthcare liabilities	13,138	17,419
Job costs	12,041	9,878
Accrued compensation	23,089	23,882
Operating lease liabilities	15,828	—
Income taxes payable	1,751	1,391
Total	\$ 96,577	\$ 88,020

6. ASSETS AND LIABILITIES HELD FOR SALE

During the first half of 2019, the Company initiated plans to sell several entities as part of its ongoing strategic actions intended to generate higher returns and more predictable and sustainable long-term earnings growth. Within Infrastructure Solutions, the Company initiated plans to divest its CIPP contracting businesses in Europe: Insituform Netherlands, Insituform Spain and Environmental Techniques. See Notes 1 and 17 for additional information on the sale of the CIPP contracting operations of Insituform Netherlands and Insituform Spain. Within Corrosion Protection, the Company initiated plans to divest its interest in United Mexico. See Note 1 for additional information on the sale of the Company's interest in United Mexico. During the fourth quarter of 2019, the Company's board of directors approved the action to sell several parcels of land located near its corporate headquarters.

The Company is currently in various stages of discussions with third parties for Environmental Techniques and believes that it is probable that a sale will occur in the first half of 2020. The Company also believes it is probable that a sale of the land parcels will occur in 2020. In the event the Company is unable to liquidate the assets and liabilities at a price that is less than favorable, the Company could incur a loss on disposal.

During 2018, the Company's board of directors approved a plan to divest the assets and liabilities of Insituform Australia. See Note 17 for additional information on the sale of Insituform Australia, effective January 24, 2020.

The relevant asset and liability balances at December 31, 2019 and 2018 are accounted for as held for sale and measured at the lower of carrying value or fair value less cost to sell. Based on management's expectation of fair value less cost to sell, the Company recorded an impairment of assets held for sale of \$23.4 million in the Consolidated Statement of Operations during 2019. During the second quarter of 2019, impairment charges of \$5.1 million and \$3.9 million were recorded for Insituform Australia and Insituform Netherlands, respectively, which are reported within the Infrastructure Solutions reportable segment, and \$1.1 million and \$1.8 million were recorded for Corppower and United Mexico, respectively, which are reported within the Corrosion Protection reportable segment. During the fourth quarter of 2019, certain terms of the Insituform Netherlands transaction changed and the sale resulted in further impairment charges of \$2.6 million. Additionally, impairment charges of \$6.0 million and \$2.9 million, respectively, were recorded in the fourth quarter of 2019 for Insituform Spain, which is reported within the Infrastructure Solutions reportable segment, and Corporate based on management's current expectation of fair value less cost to sell. In the event the Company is unable to sell the assets and liabilities or sells them at a price or on terms that are less favorable, or at a higher cost than currently anticipated, the Company could incur additional impairment charges or a loss on disposal.

The following table provides the components of assets and liabilities held for sale (in thousands):

	2019 ⁽¹⁾	2018 ⁽²⁾
Assets held for sale:		
Current assets		
Receivables, net	\$ 4,136	\$ 1,309
Retainage	518	15
Contract assets	5,350	1,777
Inventories	2,097	2,123
Prepaid expenses and other current assets	799	300
Total current assets	12,900	5,524
Property, plant & equipment, less accumulated depreciation	10,962	2,268
Goodwill	4,224	—
Intangible assets, less accumulated amortization	1,528	—
Operating lease assets	326	—
Other non-current assets	130	—
Impairment of assets held for sale	(13,978)	—
Total assets held for sale	\$ 16,092	\$ 7,792
Liabilities held for sale:		
Current liabilities		
Accounts payable	\$ 2,174	\$ 1,331
Accrued expenses	3,961	3,891
Contract liabilities	122	38
Total current liabilities	6,257	5,260
Operating lease liabilities	174	—
Other non-current liabilities	54	—
Total liabilities held for sale	\$ 6,485	\$ 5,260

⁽¹⁾ Includes Insituform Australia, Insituform Spain, Environmental Techniques and land held at Corporate.

⁽²⁾ Includes Insituform Australia.

7. LEASES

Effective January 1, 2019, the Company adopted FASB ASC 842 using the adoption-date transition provision rather than at the earliest comparative period presented in the financial statements. Therefore, the Company recognized and measured leases existing at January 1, 2019 but without retrospective application. The Company also elected the package of practical expedients not to reassess prior conclusions related to contracts containing leases, lease classification and initial direct costs and the lessee practical expedient to combine lease and non-lease components. The Company also made a policy election to not recognize right-of-use assets and lease liabilities for short-term leases for all asset classes. The impact of FASB ASC 842 on the Consolidated Balance Sheet beginning January 1, 2019 was through the recognition of operating lease assets and corresponding operating lease liabilities of \$70.5 million. No impact was recorded to the Consolidated Statement of Operations or beginning retained earnings.

The Company's operating lease portfolio includes operational field locations, administrative offices, equipment, vehicles and information technology equipment. The majority of the Company's leases have remaining lease terms of 1 year to 20 years, some of which include options to extend the leases for 5 years or more. Right-of-use assets are presented within "Operating lease assets" on the Consolidated Balance Sheet. The current portion of operating lease liabilities are presented within "Accrued expenses", and the non-current portion of operating lease liabilities are presented within "Operating lease liabilities" on the Consolidated Balance Sheet.

Operating lease assets and liabilities are recognized based on the present value of lease payments over the lease term at inception. For purposes of calculating operating lease liabilities, lease terms may be deemed to include options to extend or terminate the lease when it is reasonably certain that the Company will exercise that option. Operating leases in effect prior to January 1, 2019 were recognized at the present value of the remaining payments on the remaining lease term as of January 1, 2019. A portion of the Company's real estate, equipment and vehicle leases is subject to periodic changes in the Consumer Price Index, LIBOR or other market index. The changes to these indexes are treated as variable lease payments and recognized in the period in which the obligation for those payments is incurred. Because most leases do not provide an explicit rate of return, the Company utilizes its incremental secured borrowing rate on a lease-by-lease basis in determining the present value of lease payments at the commencement date of the lease.

The following table presents the components of lease expense (in thousands):

	Year Ended December 31, 2019
Operating lease cost	\$ 22,235
Short-term lease cost	25,382
Total lease cost	\$ 47,617

Supplemental cash flow information related to leases was as follows (in thousands):

	Year Ended December 31, 2019
Cash paid for amounts included in the measurement of lease liabilities:	
Operating cash flows from operating leases	\$ 22,144
Right-of-use assets obtained in exchange for lease obligations:	
Operating leases	\$ 18,879

Supplemental balance sheet information related to leases was as follows (in thousands):

	December 31, 2019 ⁽¹⁾
Operating leases:	
Operating lease assets	\$ 71,466
Accrued expenses	\$ 15,828
Other liabilities	56,253
Total operating lease liabilities	\$ 72,081
Weighted-average remaining lease term (in years)	5.74
Weighted-average discount rate	5.71%

⁽¹⁾ Amounts exclude operating lease assets of \$0.3 million, accrued expenses of \$0.2 million and other liabilities of \$0.2 million that were classified as held for sale at December 31, 2019 (see Note 5).

Operating lease liabilities under non-cancellable leases were as follows (in thousands):

	December 31, 2019
2020	\$ 18,739
2021	16,287
2022	13,509
2023	10,950
2024	7,845
Thereafter	16,358
Total undiscounted operating lease liabilities	83,688
Less: Imputed interest	(11,607)
Total discounted operating lease liabilities	\$ 72,081

Minimum rental commitments under non-cancellable leases as of December 31, 2018 for years 2019 through 2023 were \$19.8 million, \$15.1 million, \$11.5 million, \$8.1 million and \$5.4 million, respectively, and \$7.2 million thereafter.

8. GOODWILL AND INTANGIBLE ASSETS

Goodwill

The following table presents a reconciliation of the beginning and ending balances of goodwill (in thousands):

	Infrastructure Solutions	Corrosion Protection	Energy Services	Total
Balance, December 31, 2017				
Goodwill, gross	\$ 246,486	\$ 74,369	\$ 80,246	\$ 401,101
Accumulated impairment losses	(61,459)	(45,400)	(33,527)	(140,386)
Goodwill, net	185,027	28,969	46,719	260,715
2018 Activity:				
Acquisitions ⁽¹⁾	—	2,715	1,258	3,973
Impairments ⁽²⁾	(1,389)	—	—	(1,389)
Foreign currency translation	(1,965)	(701)	—	(2,666)
Balance, December 31, 2018				
Goodwill, gross	244,521	76,383	81,504	402,408
Accumulated impairment losses	(62,848)	(45,400)	(33,527)	(141,775)
Goodwill, net	181,673	30,983	47,977	260,633
2019 Activity:				
Foreign currency translation	(137)	563	—	426
Reclassification to assets held for sale ⁽³⁾	(4,224)	—	—	(4,224)
Balance, December 31, 2019				
Goodwill, gross	240,160	76,946	81,504	398,610
Accumulated impairment losses	(62,848)	(45,400)	(33,527)	(141,775)
Goodwill, net	\$ 177,312	\$ 31,546	\$ 47,977	\$ 256,835

⁽¹⁾ During 2018, the Company recorded goodwill of \$2.7 million and \$1.3 million related to the acquisitions of Hebna and P2S, respectively (see Note 1).

⁽²⁾ During 2018, the Company recorded a \$1.4 million goodwill impairment related to restructuring activities in Denmark (see Note 4).

⁽³⁾ During 2019, the Company classified certain assets of its CIPP contracting operation in Europe as held for sale (see Note 6).

Intangible Assets

Intangible assets consisted of the following (in thousands):

	Weighted Average Useful Lives (Years)	December 31, 2019			December 31, 2018		
		Gross Carrying Amount	Accumulated Amortization	Net Carrying Amount	Gross Carrying Amount	Accumulated Amortization	Net Carrying Amount
License agreements	0.7	\$ 3,894	\$ (3,825)	\$ 70	\$ 3,894	\$ (3,716)	\$ 178
Leases	1.0	864	(777)	87	864	(689)	175
Trademarks	8.3	15,699	(6,911)	8,788	15,751	(6,202)	9,549
Non-competes	3.3	2,301	(1,354)	947	2,529	(1,229)	1,300
Customer relationships	7.2	157,576	(76,832)	80,744	159,719	(66,753)	92,966
Patents and acquired technology	9.0	39,288	(25,097)	14,192	38,338	(22,810)	15,528
Total intangible assets	—	\$ 219,622	\$ (114,795)	\$ 104,828	\$ 221,095	\$ (101,399)	\$ 119,696

Amortization expense was \$13.7 million, \$14.0 million and \$16.1 million for the years ended December 31, 2019, 2018 and 2017, respectively. Estimated amortization expense for the years ended December 31, 2020, 2021, 2022, 2023 and 2024 is \$13.5 million, \$13.5 million, \$13.3 million, \$13.3 million and \$13.3 million, respectively.

9. LONG-TERM DEBT AND CREDIT FACILITY

Long-term debt consisted of the following (in thousands):

	December 31,	
	2019	2018
Term note, due February 27, 2023, annualized rates of 4.09% and 4.59%, respectively	\$ 253,750	\$ 282,188
Line of credit, 4.01% and 4.45%, respectively	24,000	31,000
Other notes with interest rates from 3.3% to 7.8%	770	1,031
Subtotal	278,520	314,219
Less – Current maturities of long-term debt	32,803	29,469
Less – Unamortized loan costs	2,088	2,747
Total	\$ 243,629	\$ 282,003

Required principal payments for each of the next five years are summarized as follows (in thousands):

	December 31, 2019
2020	\$ 32,803
2021	25,060
2022	30,844
2023	189,813
2024	—
Thereafter	—
Total	\$ 278,520

Financing Arrangements

In October 2015, the Company entered into an amended and restated \$650.0 million senior secured credit facility with a syndicate of banks. In February 2018 and December 2018, the Company amended this facility (the “amended Credit Facility”). The amended Credit Facility consists of a \$225.0 million revolving line of credit and a \$308.4 million term loan facility, each with a maturity date in February 2023.

During 2018, the Company paid expenses of \$3.1 million associated with the amended Credit Facility, \$1.4 million related to up-front lending fees and \$1.7 million related to third-party arranging fees and expenses, the latter of which was recorded in “Interest expense” in the Consolidated Statement of Operations in 2018. In addition, the Company had \$2.4 million in unamortized loan costs associated with the original Credit Facility, of which \$0.6 million was written off and recorded in “Interest expense” in the Consolidated Statement of Operations in 2018.

Generally, interest is charged on the principal amounts outstanding under the amended Credit Facility at the British Bankers Association LIBOR rate plus an applicable rate ranging from 1.25% to 2.25% depending on the Company’s consolidated leverage ratio. The Company can also opt for an interest rate equal to a base rate (as defined in the credit documents) plus an applicable rate, which is also based on the Company’s consolidated leverage ratio. The applicable LIBOR borrowing rate (LIBOR plus Company’s applicable rate) as of December 31, 2019 was approximately 4.09%.

The Company’s indebtedness at December 31, 2019 consisted of \$253.8 million outstanding from the term loan under the amended Credit Facility and \$24.0 million on the line of credit under the amended Credit Facility. Additionally, the Company had \$0.8 million of debt held by its joint ventures (representing funds loaned by its joint venture partners). During 2019, the Company had net repayments of \$7.0 million on the line of credit due to improved domestic working capital management.

As of December 31, 2019, the Company had \$26.1 million in letters of credit issued and outstanding under the amended Credit Facility. Of such amount, \$12.2 million was collateral for the benefit of certain of our insurance carriers and \$13.9 million was for letters of credit or bank guarantees of performance or payment obligations of foreign subsidiaries.

The Company’s indebtedness at December 31, 2018 consisted of \$282.2 million outstanding from the term loan under the amended Credit Facility, \$31.0 million on the line of credit under the amended Credit Facility and \$1.0 million of third-party notes and bank debt. During 2018, the Company had net repayments on the line of credit of \$7.0 million, which included a \$35.0 million repayment from the proceeds on the Bayou sale, net of borrowings of \$28.0 million for domestic working capital needs.

At December 31, 2019 and 2018, the estimated fair value of the Company’s long-term debt was approximately \$286.8 million and \$307.7 million, respectively. Fair value was estimated using market rates for debt of similar risk and maturity and a discounted cash flow model, which are based on Level 3 inputs as defined in Note 2.

In October 2015, the Company entered into an interest rate swap agreement for a notional amount of \$262.5 million, which is set to expire in October 2020. The notional amount of this swap mirrors the amortization of a \$262.5 million portion of the Company's \$350.0 million term loan drawn from the original Credit Facility. The swap requires the Company to make a monthly fixed rate payment of 1.46% calculated on the amortizing \$262.5 million notional amount, and provides for the Company to receive a payment based upon a variable monthly LIBOR interest rate calculated on the same amortizing \$262.5 million notional amount. The receipt of the monthly LIBOR-based payment offsets a variable monthly LIBOR-based interest cost on a corresponding \$262.5 million portion of the Company's term loan from the original Credit Facility. After considering the impact of the interest rate swap agreement, the effective borrowing rate on the Company's term note as of December 31, 2019 was approximately 3.83%. This interest rate swap is used to partially hedge the interest rate risk associated with the volatility of monthly LIBOR rate movement and is accounted for as a cash flow hedge. See Note 15.

In March 2018, the Company entered into an interest rate swap forward agreement that begins in October 2020 and expires in February 2023 to coincide with the amortization period of the amended Credit Facility. The swap will require the Company to make a monthly fixed rate payment of 2.937% calculated on the then amortizing \$170.6 million notional amount, and provides for the Company to receive a payment based upon a variable monthly LIBOR interest rate calculated on the same amortizing \$170.6 million notional amount. The receipt of the monthly LIBOR-based payment will offset the variable monthly LIBOR-based interest cost on a corresponding \$170.6 million portion of the Company's term loan from the amended Credit Facility. This interest rate swap will be used to partially hedge the interest rate risk associated with the volatility of monthly LIBOR rate movement and accounted for as a cash flow hedge. See Note 15.

The amended Credit Facility is subject to certain financial covenants, including a consolidated financial leverage ratio and consolidated fixed charge coverage ratio. Subject to the specifically defined terms and methods of calculation as set forth in the amended Credit Facility's credit agreement, the financial covenant requirements, as of each quarterly reporting period end, are defined as follows:

- Consolidated financial leverage ratio, as amended, compares consolidated funded indebtedness to amended Credit Facility defined income with a maximum amount not to exceed 3.25 to 1.00. At December 31, 2019, the Company's consolidated financial leverage ratio was 2.88 to 1.00 and, using the amended Credit Facility defined income, the Company had the capacity to borrow up to \$37.5 million of additional debt.
- Consolidated fixed charge coverage ratio, as amended, compares amended Credit Facility defined income to amended Credit Facility defined fixed charges with a minimum permitted ratio of not less than 1.25 to 1.00. At December 31, 2019, the Company's fixed charge ratio was 1.38 to 1.00.

At December 31, 2019, the Company was in compliance with all of its debt and financial covenants as required under the amended Credit Facility.

10. STOCKHOLDERS' EQUITY

Share Repurchase Plan

In December 2018, the Company's board of directors authorized the open market repurchase of up to two million shares of the Company's common stock through one or more trading plans established in accordance with Rule 10b5-1 of the Securities Exchange Act of 1934. The program did not establish a time period in which the repurchases had to be made. In December 2018, the Company amended its Credit Facility, which limited the open market share repurchases to \$32.0 million for 2019. The Company began repurchasing shares under this program in January 2019. In December 2019, the Company's board of directors authorized the open market repurchase of up to an additional two million shares of the Company's common stock. The program did not establish a time period in which the repurchases had to be made, although the authorization is limited to \$40.0 million in 2020 by the Company's amended Credit Facility while the Company's consolidated financial leverage ratio remains greater than 2.50 to 1.00. Once repurchased, the Company promptly retires such shares.

The Company is also authorized to repurchase up to \$10.0 million of the Company's common stock in each calendar year in connection with the Company's equity compensation programs for employees. The participants in the Company's equity plans may surrender shares of common stock in satisfaction of tax obligations arising from the vesting of restricted stock and restricted stock unit awards under such plans and in connection with the exercise of stock option awards. The deemed price paid is the closing price of the Company's common stock on The Nasdaq Global Select Market on the date that the restricted stock or restricted stock unit vests or the shares of the Company's common stock are surrendered in exchange for stock option exercises. With regard to stock option awards, the option holder may elect a "net, net" exercise in connection with the exercise of employee stock options such that the option holder receives a number of shares equal to the built-in gain in the option shares divided by the market price of the Company's common stock on the date of exercise, less a number of shares equal to the taxes due upon the exercise of the option divided by the market price of the Company's common stock on the date of exercise. The shares of Company common stock surrendered to the Company for taxes due on the exercise of the option are deemed repurchased by the Company.

During 2019, the Company acquired 1,492,348 shares of the Company's common stock for \$26.3 million (\$17.64 average price per share) through the open market repurchase program discussed above, 151,234 shares of the Company's common stock for \$3.1 million (\$20.26 average price per share) in connection with the satisfaction of tax obligations in connection with the vesting of restricted stock units and performance units, and 48,409 shares of the Company's common stock for \$1.0 million (\$20.52 average price per share) in connection with "net, net" exercises of employee stock options. Once repurchased, the Company immediately retired all such shares.

During 2018, the Company acquired 949,464 shares of the Company's common stock for \$20.3 million (\$21.36 average price per share) through the open market repurchase programs discussed above and 228,068 shares of the Company's common stock for \$5.5 million (\$24.08 average price per share) in connection with the satisfaction of tax obligations in connection with the vesting of restricted stock and restricted stock units. Once repurchased, the Company immediately retired all such shares. During 2018, the Company did not acquire any of the Company's common stock in connection with "net, net" exercises of employee stock options.

During 2017, the Company acquired 1,599,093 shares of the Company's common stock for \$35.3 million (\$22.10 average price per share) through open market repurchase programs and 112,899 shares of the Company's common stock for \$2.5 million (\$22.15 average price per share) in connection with the satisfaction of tax obligations in connection with the vesting of restricted stock and restricted stock units. Once repurchased, the Company immediately retired all such shares. During 2017, the Company did not acquire any of the Company's common stock in connection with "net, net" exercises of employee stock options.

Equity-Based Compensation Plans

Employee Plans

In April 2016, the Company's stockholders approved the 2016 Employee Equity Incentive Plan, which was amended in 2017 by the First Amendment to the 2016 Employee Equity Incentive Plan (as amended, the "2016 Employee Plan"). In April 2018, the Company's stockholders approved the Second Amendment to the 2016 Employee Equity Incentive Plan, which increased by 1,700,000 the number of shares of the Company's common stock reserved and available for issuance in connection with awards issued under the 2016 Employee Plan. The 2016 Employee Plan, which replaced the 2013 Employee Equity Incentive Plan, provides for equity-based compensation awards, including restricted shares of common stock, performance awards, stock options, stock units and stock appreciation rights. The 2016 Employee Plan is administered by the compensation committee of the board of directors, which determines eligibility, timing, pricing, amount and other terms or conditions of awards. As of December 31, 2019, 2,099,380 shares of the Company's common stock were available for issuance under the 2016 Employee Plan.

Director Plans

In April 2016, the Company's stockholders approved the 2016 Non-Employee Director Equity Incentive Plan (the "2016 Director Plan"), which replaced the 2011 Non-Employee Director Equity Incentive Plan. In April 2019, the Company's stockholders approved an amendment and restatement of the 2016 Director Plan, which among other things, increased by 300,000 the number of shares of the Company's common stock reserved and available for issuance in connection with awards issued under the 2016 Director Plan. The 2016 Director Plan provides for equity-based compensation awards, including non-qualified stock options and stock units. The board of directors administers the 2016 Director Plan and has the authority to establish, amend and rescind any rules and regulations related to the 2016 Director Plan. As of December 31, 2019, 321,406 shares of the Company's common stock were available for issuance under the 2016 Director Plan.

Prior to the 2016 Director Plan, the board of directors administered the 2011 Non-Employee Director Equity Plan ("2011 Director Plan"), the 2006 Non-Employee Director Equity Plan ("2006 Director Plan") and the 2001 Non-Employee Director Equity Plan ("2001 Director Plan"), all of which contained substantially the same provisions as the current plan. At December 31, 2019, there were 52,296 deferred stock units outstanding under the 2011 Director Plan, 39,109 deferred stock units outstanding under the 2006 Director Plan and 31,850 deferred stock units outstanding under the 2001 Director Equity Plan.

Activity and related expense associated with these plans are described in Note 11.

11. EQUITY-BASED COMPENSATION

Stock Awards

Stock awards, which include shares of restricted stock, restricted stock units and performance stock units, are awarded from time to time to executive officers and certain key employees of the Company. Stock award compensation is recorded based on the award date fair value and charged to expense ratably through the requisite service period. The forfeiture of unvested restricted stock, restricted stock units and performance stock units causes the reversal of all previous expense recorded as a reduction of current period expense.

A summary of stock award activity is as follows:

	Years Ended December 31,					
	2019		2018		2017	
	Stock Awards	Weighted Average Award Date Fair Value	Stock Awards	Weighted Average Award Date Fair Value	Stock Awards	Weighted Average Award Date Fair Value
Outstanding at December 31, 2018	1,143,205	\$ 23.26	1,428,878	\$ 21.53	1,501,021	\$ 20.58
Period Activity:						
Restricted stock units awarded	325,321	20.02	281,567	24.13	257,532	23.06
Performance stock units awarded	146,367	22.78	219,943	23.25	213,436	28.18
Restricted shares distributed	(76,686)	18.26	—	—	(179,169)	22.44
Restricted stock units distributed	(237,416)	18.83	(312,182)	17.47	(95,510)	20.71
Performance stock units	(111,155)	25.85	(296,909)	21.55	(49,672)	21.95
Restricted shares forfeited	—	—	—	—	(1,084)	23.01
Restricted stock units forfeited	(74,075)	22.09	(90,896)	21.79	(81,626)	20.36
Performance stock units forfeited	(80,597)	25.30	(87,196)	25.95	(136,050)	24.29
Outstanding at December 31, 2019	1,034,964	\$ 23.20	1,143,205	\$ 23.26	1,428,878	\$ 21.53

Expense associated with stock awards was \$7.0 million, \$6.8 million and \$9.0 million in 2019, 2018 and 2017, respectively. Unrecognized pre-tax expense of \$9.6 million related to stock awards is expected to be recognized over the weighted average remaining service period of 1.8 years for awards outstanding at December 31, 2019.

Deferred Stock Unit Awards

Deferred stock units are generally awarded to directors of the Company and represent the Company's obligation to transfer one share of the Company's common stock to the grantee at a future date. Historically, awards were fully vested, and fully expensed, on the date of grant. Beginning in April 2019, as a result of the amendment and restatement of the 2016 Director Plan discussed above, the expense related to the issuance of deferred stock units is based on the award date fair value and charged to expense ratably through the requisite service period, which is generally one year. The forfeiture of unvested deferred stock units causes the reversal of all previous expense to be recorded as a reduction of current period expense.

A summary of deferred stock unit activity is as follows:

	Years Ended December 31,					
	2019		2018		2017	
	Deferred Stock Units	Weighted Average Award Date Fair Value	Deferred Stock Units	Weighted Average Award Date Fair Value	Deferred Stock Units	Weighted Average Award Date Fair Value
Outstanding at December 31, 2018	287,350	\$ 20.80	269,977	\$ 20.14	253,445	\$ 19.93
Period Activity:						
Awarded	50,174	19.64	45,681	23.72	47,091	23.53
Distributed	(84,184)	20.38	(28,308)	19.22	(30,559)	23.57
Outstanding at December 31, 2019	253,340	\$ 20.71	287,350	\$ 20.80	269,977	\$ 20.14

Expense associated with awards of deferred stock units was \$0.7 million, \$1.1 million and \$1.1 million in 2019, 2018 and 2017, respectively. Unrecognized pre-tax expense of \$0.4 million related to deferred stock unit awards is expected to be recognized over the weighted average remaining service period of 0.3 years for awards outstanding at December 31, 2019.

Stock Options

Stock options on the Company's common stock are awarded from time to time to executive officers and certain key employees of the Company. Stock options granted generally have a term of seven to ten years and an exercise price equal to the market value of the underlying common stock on the date of grant.

A summary of stock option activity is as follows:

	Years Ended December 31,					
	2019		2018		2017	
	Shares	Weighted Average Exercise Price	Shares	Weighted Average Exercise Price	Shares	Weighted Average Exercise Price
Outstanding, beginning of year	52,783	\$ 18.11	126,680	\$ 23.06	170,253	\$ 21.99
Exercised	(52,783)	18.11	—	—	(43,573)	18.87
Canceled/Expired	—	—	(73,897)	26.60	—	—
Outstanding, end of year	—	\$ —	52,783	\$ 18.11	126,680	\$ 23.06
Exercisable, end of year	—	\$ —	52,783	\$ 18.11	126,680	\$ 23.06

In 2019, 2018 and 2017, there were no expenses related to stock options as all issued stock options were fully vested.

Financial data for stock option exercises are summarized in the following table (in thousands):

	Years Ended December 31,		
	2019	2018	2017
Amount received from stock option exercises	\$ 956	\$ —	\$ 823
Total intrinsic value of stock option exercises ⁽¹⁾	129	—	370
Tax expense (benefit) of stock option exercises recorded in income tax expense	312	(1,556)	(63)
Aggregate intrinsic value of outstanding stock options	—	—	386
Aggregate intrinsic value of exercisable stock options	—	—	386

⁽¹⁾ Calculations based on a weighted average market price of the Company's stock at the time of exercise of \$20.55 and \$27.35 for the years ended December 31, 2019 and 2017, respectively.

12. TAXES ON INCOME

Income (loss) before taxes on income was as follows (in thousands):

	Years Ended December 31,		
	2019	2018	2017
Domestic	\$ 3,627	\$ 8,142	\$ (40,007)
Foreign	(16,511)	(5,187)	(21,570)
Total	\$ (12,884)	\$ 2,955	\$ (61,577)

Provisions for taxes on income (loss) consisted of the following components (in thousands):

	Years Ended December 31,		
	2019	2018	2017
Current:			
Federal	\$ (2,775)	\$ (4,765)	\$ 3,764
Foreign	5,705	6,025	7,512
State	460	(651)	3,351
Subtotal	3,390	609	14,627
Deferred:			
Federal	538	947	(8,706)
Foreign	(199)	(1,531)	(1,099)
State	2,835	(157)	183
Subtotal	3,174	(741)	(9,622)
Total tax provision	\$ 6,564	\$ (132)	\$ 5,005

Income tax expense differed from the amounts computed by applying the U.S. federal income tax rate of 21% for 2019 and 2018 and 35% for 2017 to income (loss) before taxes on income as a result of the following (in thousands):

	Years Ended December 31,		
	2019	2018	2017
Income taxes (benefit) at U.S. federal statutory tax rate	\$ (2,706)	\$ 621	\$ (21,552)
Increase (decrease) in taxes resulting from:			
Change in the balance of the valuation allowance for deferred tax assets allocated to foreign income tax expense	806	590	4,598
Change in the balance of the valuation allowance for deferred tax assets allocated to domestic income tax expense	2,960	(944)	12,755
State income taxes, net of federal income tax benefit	2,603	(798)	2,270
Divestitures	5,613	2,133	—
Meals and entertainment	470	517	785
Changes in taxes previously accrued	(1,070)	(536)	(1,339)
Foreign tax rate differences	(643)	1,301	913
Share-based compensation	358	(1,427)	131
Goodwill impairment	—	291	6,359
Recognition of uncertain tax positions	(717)	(218)	(62)
Deemed mandatory repatriation	—	(842)	10,406
Release of deferred tax liability on foreign earnings	—	—	(7,051)
Domestic Production Activities deduction	—	—	(1,921)
Other matters	(1,110)	(820)	(1,287)
Total tax provision	\$ 6,564	\$ (132)	\$ 5,005
Effective tax rate	(50.9%)	(4.5%)	(8.1%)

On December 22, 2017, the U.S. government enacted the TCJA, which includes significant changes to the U.S. corporate income tax system including: (i) a federal corporate rate reduction from 35% to 21%; (ii) limitations on the deductibility of interest expense and executive compensation; (iii) creation of new minimum taxes such as the Global Intangible Low Taxed Income (“GILTI”) tax and the base erosion anti-abuse tax (“BEAT”); and (iv) the transition of U.S. international taxation from a worldwide tax system to a modified territorial tax system, which resulted in a one time U.S. tax liability on those earnings that have not previously been repatriated to the U.S. Beginning in 2018, the Company no longer records U.S. federal income tax on its share of income from foreign subsidiaries and no longer records a benefit for foreign tax credits related to that income.

In its reporting since the TCJA was enacted, the Company had been recording provisional amounts for certain enactment-date effects of the TCJA by applying the guidance in SAB 118 because the enactment-date accounting for these effects had not yet been completed. In 2018 and 2017, the Company recorded a net tax expense related to the enactment-date effects of the TCJA that included recording the one-time transition tax liability related to undistributed earnings of certain foreign subsidiaries that were not previously taxed and adjusting deferred tax assets and liabilities for the changes in the federal tax rate.

The one-time transition tax is based on total post-1986 earnings and profits (“E&P”) that were previously deferred from U.S. income taxes. The tax is based on the amount of those earnings held in cash and other specified assets, either at the end of 2017 or the average of the year end balances for 2015 and 2016. Based on the Company’s initial analysis of the TCJA in 2017, it recorded a provisional estimated net tax expense of \$2.4 million, which consisted of a charge of \$10.4 million for the deemed mandatory repatriation, and reduced by a \$7.1 million release of a deferred tax liability on unremitted foreign earnings and \$0.9 million of other TCJA related impacts. Upon further analysis of the TCJA and notices and regulations issued and proposed by the U.S. Department of the Treasury and the Internal Revenue Service (“IRS”), the Company finalized its calculations of the transition tax liability during 2018. Adjustments included further refinement of computations related to earnings and profits, cash and cash equivalents, state income tax and foreign withholding taxes pursuant to guidance issued during the year. The final transition tax liability consisted of a charge of \$9.6 million for the deemed mandatory repatriation, and reduced by the \$7.1 million release of a deferred tax liability on unremitted foreign earnings and \$2.0 million of other TCJA related impacts. The Company decreased its December 31, 2017 provisional amount by \$1.9 million during 2018, which is included as a component of income tax expense.

The transition tax liability, as filed on the 2017 federal income tax return and after utilization of foreign tax credits, including foreign tax credits carried back from 2018, was \$1.1 million. Although Congressional intent and the statutory language were clear that the transition tax could be paid over a period of eight years, and the Company properly elected to pay the transition tax liability over a period of eight years, IRS guidance published in April 2018 indicated that taxpayers in a net overpayment position would have all overpayments first applied to successive installments of the transition tax liability. Legislative proposals were passed in the U.S. House of Representatives in late December 2018 to correct the application of this IRS guidance; however there has been no action in the U.S. Senate to pass legislation addressing this issue. As a result of the overpayment from 2017 and the anticipated utilization of 2018 foreign tax credits, no further tax payments related to the transition tax will be required.

Net deferred taxes consisted of the following (in thousands):

	December 31,	
	2019	2018
Deferred income tax assets:		
Foreign tax credit carryforwards	\$ 4,101	\$ 507
Net operating loss carryforwards	19,079	22,909
Accrued expenses	15,281	12,987
Other	8,431	8,652
Total gross deferred income tax assets	46,892	45,055
Less valuation allowance	(34,247)	(28,451)
Net deferred income tax assets	12,645	16,604
Deferred income tax liabilities:		
Property, plant and equipment	(5,689)	(6,038)
Intangible assets	(12,203)	(10,609)
Other	(4,791)	(6,757)
Total deferred income tax liabilities	(22,683)	(23,404)
Net deferred income tax liabilities	\$ (10,038)	\$ (6,800)

The Company's tax assets and liabilities, netted by taxing location, are in the following captions in the balance sheets (in thousands):

	December 31,	
	2019	2018
Noncurrent deferred income tax assets, net	\$ 1,216	\$ 1,561
Noncurrent deferred income tax liabilities, net	(11,254)	(8,361)
Net deferred income tax liabilities	\$ (10,038)	\$ (6,800)

The Company's deferred tax assets at December 31, 2019 included \$19.1 million in federal, state and foreign net operating loss ("NOL") carryforwards. These NOLs include \$11.9 million, which if not used will expire between the years 2020 and 2039, and \$7.2 million that have no expiration dates. The Company also has deferred tax amounts related to foreign tax credit carryforwards of \$4.1 million, of which, \$0.4 million will expire in 2026 if not used, \$3.6 million will expire in 2029 if not used and \$0.1 million have no expiration date.

For financial reporting purposes, a valuation allowance of \$34.2 million has been recognized at December 31, 2019 to reduce the deferred tax assets related to certain federal, state and foreign net operating loss carryforwards and other assets, for which it is more likely than not that the related tax benefits will not be realized, due to uncertainties as to the timing and amounts of future taxable income. The valuation allowance at December 31, 2018 was \$28.5 million.

As of December 31, 2019, a valuation allowance has been recorded so that the amount of the deferred tax asset remaining is more likely than not to be realized. The amount of the deferred tax asset considered realizable; however, could be adjusted if estimates of future taxable income during the carryforward period are reduced or increased or if objective negative evidence in the form of cumulative losses is no longer present and additional weight may be given to subjective evidence such as our projections for growth.

Activity in the valuation allowance is summarized as follows (in thousands):

	Years Ended December 31,		
	2019	2018	2017
Balance, at beginning of year	\$ 28,451	\$ 29,782	\$ 15,428
Additions	8,789	1,879	19,260
Reversals	(6,776)	(2,102)	(183)
Remeasurement of U.S. deferred tax balances	—	—	(5,141)
Other adjustments	3,783	(1,108)	418
Balance, at end of year	\$ 34,247	\$ 28,451	\$ 29,782

As a result of the deemed mandatory repatriation provisions in the TCJA, the Company included \$206.7 million of undistributed earnings in income subject to U.S. tax at reduced tax rates. Certain provisions within the TCJA effectively transition the U.S. to a territorial system and eliminates deferral on U.S. taxation for certain amounts of income that are not taxed at a minimum level. At this time, the Company does not intend to distribute earnings in a taxable manner; and therefore, intends to limit distributions to: (i) earnings previously taxed in the U.S.; (ii) earnings that would qualify for the 100 percent dividends received deduction provided in the TCJA; or (iii) earnings that would not result in significant foreign taxes. As a result, the Company has not recognized a deferred tax liability on any remaining undistributed foreign earnings as of December 31, 2019.

FASB ASC 740, *Income Taxes* ("FASB ASC 740"), prescribes a more-likely-than-not threshold for the financial statement recognition and measurement of a tax position taken or expected to be taken in a tax return. FASB ASC 740 also provides guidance on de-recognition, classification, interest and penalties, accounting in interim periods and disclosure of uncertain tax positions in financial statements.

A reconciliation of the beginning and ending balance of unrecognized tax benefits is as follows (in thousands):

	Years Ended December 31,		
	2019	2018	2017
Balance, at beginning of year	\$ 1,955	\$ 2,229	\$ 2,465
Additions for tax positions of prior years	9	8	12
Lapse in statute of limitations	(587)	(264)	(274)
Foreign currency translation	7	(18)	26
Balance, at end of year, total tax provision	\$ 1,384	\$ 1,955	\$ 2,229

The total amount of unrecognized tax benefits, if recognized, that would affect the effective tax rate was \$0.3 million at December 31, 2019.

The Company recognizes interest and penalties, if any, related to unrecognized tax benefits in income tax expense. During the years ended December 31, 2019, 2018 and 2017, approximately \$0.2 million was expensed for interest and penalties in each year.

The Company believes that it is reasonably possible that the total amount of unrecognized tax benefits will change in 2020. The Company has certain tax return years subject to statutes of limitation that will expire within twelve months. Unless challenged by tax authorities, the expiration of those statutes of limitation is expected to result in the recognition of uncertain tax positions in the amount of approximately \$0.7 million.

The Company is subject to taxation in the United States, various states and foreign jurisdictions. With few exceptions, the Company is no longer subject to U.S. federal, state, local or foreign examinations by tax authorities for years before 2015.

13. COMMITMENTS AND CONTINGENCIES

Litigation

The Company is involved in certain litigation incidental to the conduct of its business and affairs. Management, after consultation with legal counsel, does not believe that the outcome of any such litigation, individually or in the aggregate, will have a material adverse effect on the Company's consolidated financial condition, results of operations or cash flows.

Contingencies

In connection with the Brinderson acquisition, certain pre-acquisition matters were identified in 2014 whereby a loss was both probable and reasonably estimable. The Company establishes liabilities in accordance with FASB ASC Subtopic No. 450-20, *Contingencies - Loss Contingencies*, and, accordingly, recorded an accrual related to various legal, tax, employee benefits and employment matters. At December 31, 2016, the accrual relating to these matters was \$6.0 million. During 2017, the Company made a \$0.3 million payment related to one of the above matters. Additionally, the Company reassessed its reserve during 2017 for: (i) the lapse of certain payroll tax statutory limitation periods; and (ii) further developments in the legal status of these matters, including the preliminary settlement through mediated resolution of several matters. Following consultation with internal and third-party legal and tax counsel, the Company lowered its accrual for such matters by \$1.5 million during 2017. The accrual adjustments resulted in an offset to "Operating expense" in the Consolidated Statement of Operations. During 2018, the Company made an additional \$0.2 million payment related to one of the above matters. As of December 31, 2018, the remaining accrual relating to these matters was \$4.0 million. During 2019, the Company paid \$4.3 million to resolve all outstanding matters, with the final accrual adjustment of \$0.3 million recorded to "Operating expenses" in the Consolidated Statement of Operations.

Purchase Commitments

The Company had no material purchase commitments at December 31, 2019.

Guarantees

The Company has many contracts that require the Company to indemnify the other party against loss from claims, including claims of patent or trademark infringement or other third-party claims for injuries, damages or losses. The Company has agreed to indemnify its surety against losses from third-party claims of subcontractors. The Company has not previously experienced material losses under these provisions and, while there can be no assurances, currently does not anticipate any future material adverse impact on its consolidated financial position, results of operations or cash flows.

The Company regularly reviews its exposure under all its engagements, including performance guarantees by contractual joint ventures and indemnification of its surety. As a result of the most recent review, the Company has determined that the risk of material loss is remote under these arrangements and has not recorded a liability for these risks at December 31, 2019 on its consolidated balance sheet.

Retirement Plans

Approximately 1,050 of our U.S. employees participate in multi-employer retirement plans. Substantially all of the Company's remaining U.S. employees are eligible to participate in one of the Company's sponsored defined contribution savings plans, which are qualified plans under the requirements of Section 401(k) of the Internal Revenue Code. Company contributions to the domestic plans were \$5.2 million, \$5.7 million and \$6.3 million for the years ended December 31, 2019, 2018 and 2017, respectively.

Certain foreign subsidiaries maintain various other defined contribution retirement plans. Company contributions to such plans for the years ended December 31, 2019, 2018 and 2017 were \$0.8 million, \$1.1 million and \$1.0 million, respectively.

In connection with the Company's 2009 acquisition of Corrpro, the Company assumed an obligation associated with a contributory defined benefit pension plan sponsored by a subsidiary of Corrpro located in the United Kingdom. Employees of this Corrpro subsidiary no longer accrue benefits under the plan; however, Corrpro continues to be obligated to fund prior period benefits. Both the pension expense and funding requirements for the years ended December 31, 2019, 2018 and 2017 were immaterial to the Company's consolidated financial position and results of operations. The plan assets and benefit obligation at December 31, 2019 were approximately \$6.9 million and \$6.2 million, respectively. The Company used a discount rate of 2.1% for the evaluation of the pension liability. The Company recorded an asset associated with the overfunded status of this plan of approximately \$0.7 million, which is included in other long-term assets on the consolidated balance sheet. The plan assets and benefit obligation at December 31, 2018 approximated \$7.9 million and \$7.1 million, respectively. Plan assets consist of investments in equity and debt securities as well as cash, which are primarily Level 2 inputs as defined in Note 2.

14. SEGMENT AND GEOGRAPHIC INFORMATION

The Company has three operating segments, which are also its reportable segments: Infrastructure Solutions; Corrosion Protection; and Energy Services. The Company's operating segments correspond to its management organizational structure. Each operating segment has leadership that reports to the chief operating decision manager ("CODM"). The operating results and financial information reported by each segment are evaluated separately, regularly reviewed and used by the CODM to evaluate segment performance, allocate resources and determine management incentive compensation.

The following disaggregated financial results have been prepared using a management approach that is consistent with the basis and manner with which management internally disaggregates financial information for the purpose of making internal operating decisions. The Company evaluates performance based on stand-alone operating income (loss), which includes acquisition and divestiture expenses and restructuring charges, if applicable.

In 2019, the Company began reporting Corporate expenses separately rather than allocating those costs to the operating segments. The reported information for 2018 and 2017 has been revised to conform to the current period presentation.

Financial information by segment was as follows (in thousands):

	Years Ended December 31,		
	2019	2018	2017
Revenues:			
Infrastructure Solutions	\$ 590,797	\$ 604,121	\$ 612,154
Corrosion Protection	295,090	393,740	456,139
Energy Services	328,048	335,707	290,726
Total revenues	\$ 1,213,935	\$ 1,333,568	\$ 1,359,019
Gross profit:			
Infrastructure Solutions	\$ 144,074	\$ 132,411	\$ 140,823
Corrosion Protection	60,927	92,968	108,240
Energy Services	41,234	41,547	35,749
Total gross profit	\$ 246,235	\$ 266,926	\$ 284,812
Operating income (loss):			
Infrastructure Solutions ⁽¹⁾	\$ 42,079	\$ 37,509	\$ (47,316)
Corrosion Protection ⁽²⁾	(5,635)	16,283	32,222
Energy Services ⁽³⁾	9,740	9,638	7,736
Corporate ⁽⁴⁾	(35,211)	(33,783)	(36,162)
Total operating income (loss)	10,973	29,647	(43,520)
Other income (expense):			
Interest expense	(14,002)	(17,327)	(16,001)
Interest income	1,038	516	145
Other ⁽⁵⁾	(10,893)	(9,881)	(2,201)
Total other expense	(23,857)	(26,692)	(18,057)
Income (loss) before taxes on income	\$ (12,884)	\$ 2,955	\$ (61,577)
Total assets:			
Infrastructure Solutions	\$ 508,226	\$ 500,977	\$ 531,746
Corrosion Protection	278,694	279,106	329,848
Energy Services	161,165	163,109	152,416
Corporate	31,336	41,432	22,775
Assets held for sale	16,092	7,793	70,314
Total assets	\$ 995,513	\$ 992,417	\$ 1,107,099
Capital expenditures:			
Infrastructure Solutions	\$ 10,679	\$ 12,730	\$ 16,680
Corrosion Protection	11,437	9,754	8,603
Energy Services	3,437	3,053	2,713
Corporate	3,219	4,977	2,834
Total capital expenditures	\$ 28,772	\$ 30,514	\$ 30,830
Depreciation and amortization:			
Infrastructure Solutions	\$ 13,773	\$ 16,758	\$ 18,731
Corrosion Protection	12,487	11,874	15,598
Energy Services	7,490	7,111	6,726
Corporate	2,413	2,112	3,364
Total depreciation and amortization	\$ 36,163	\$ 37,855	\$ 44,419

- (1) Operating income for 2019 includes: (i) \$7.5 million of restructuring charges (see Note 4); (ii) \$1.0 million of costs primarily related to the planned divestiture of certain international operations; and (iii) \$17.6 million of impairment charges to assets held for sale (see Note 6). Operating income for 2018 includes: (i) \$16.1 million of restructuring charges (see Note 4); and (ii) \$0.4 million of cost incurred related to the disposition of Denmark. Operating loss for 2017 includes: (i) \$17.5 million of restructuring charges (see Note 4); (ii) \$45.4 million of goodwill impairment charges (see Note 2); (iii) \$41.0 million of definite-lived intangible asset impairment charges (see Note 2); and (iv) \$0.1 million of costs incurred related to the acquisition of Environmental Techniques.
- (2) Operating loss for 2019 includes: (i) \$7.7 million of restructuring charges (see Note 4); (ii) \$0.1 million of divestiture costs; and (iii) \$2.9 million of impairment charges to assets held for sale (see Note 6). Operating income for 2018 includes: (i) \$7.6 million of restructuring charges (see Note 4); and (ii) \$2.5 million of costs incurred related to the divestiture of Bayou. Operating income for 2017 includes \$4.9 million of restructuring charges (see Note 4) and (ii) \$1.6 million of costs incurred related to the planned divestiture of Bayou.
- (3) Operating income for 2019 includes \$1.7 million of restructuring charges (see Note 4). Operating income for 2018 includes \$0.3 million of restructuring charges (see Note 4).
- (4) Operating loss for 2019 includes: (i) \$5.2 million of restructuring charges (see Note 4); (ii) \$2.2 million of costs primarily related to the planned divestiture of certain international operations; and (iii) \$2.9 million of impairment charges to assets held for sale (see Note 6). Operating loss for 2018 includes \$1.6 million of restructuring charges (see Note 4) and \$4.1 million of divestiture costs. Operating loss for 2017 includes \$1.6 million of restructuring charges (see Note 4) and \$1.2 million of divestiture costs.
- (5) Other expense for 2019 includes \$10.2 million of restructuring charges (see Note 4). Other expense for 2018 includes charges of \$7.0 million related to the loss on the sale of Bayou (see Note 1) and \$4.0 million of restructuring charges (see Note 4).

The following table summarizes revenues, gross profit, operating income (loss) and long-lived assets by geographic region (in thousands):

	Years Ended December 31,		
	2019	2018	2017
Revenues: ⁽¹⁾			
United States	\$ 914,676	\$ 966,291	\$ 1,028,313
Canada	123,033	133,612	139,734
Europe	64,278	66,794	71,839
Other foreign	111,948	166,871	119,133
Total revenues	\$ 1,213,935	\$ 1,333,568	\$ 1,359,019
Gross profit: ⁽¹⁾			
United States	\$ 175,705	\$ 178,024	\$ 226,026
Canada	22,183	22,823	31,173
Europe	14,849	8,379	11,997
Other foreign	33,498	57,700	15,616
Total gross profit	\$ 246,235	\$ 266,926	\$ 284,812
Operating income (loss): ⁽¹⁾			
United States	\$ 6,212	\$ 174	\$ (33,583)
Canada	7,460	9,482	12,220
Europe	(11,363)	(10,599)	(3,771)
Other foreign	8,664	30,590	(18,386)
Total operating income (loss)	\$ 10,973	\$ 29,647	\$ (43,520)
Long-lived assets: ⁽¹⁾⁽²⁾			
United States	\$ 80,910	\$ 105,978	\$ 93,472
Canada	7,462	7,725	8,816
Europe	2,499	8,295	13,435
Other foreign	10,220	6,662	9,586
Total long-lived assets	\$ 101,091	\$ 128,660	\$ 125,309

(1) Attributed to the country of origin.

(2) Long-lived assets do not include goodwill, intangible assets, operating lease assets or deferred tax assets.

15. DERIVATIVE FINANCIAL INSTRUMENTS

As a matter of policy, the Company uses derivatives for risk management purposes, and does not use derivatives for speculative purposes. From time to time, the Company may enter into foreign currency forward contracts to hedge foreign currency cash flow transactions. For cash flow hedges, gain or loss is recorded in the Consolidated Statements of Operations upon settlement of the hedge. All of the Company's hedges that are designated as hedges for accounting purposes were highly effective; therefore, no notable amounts of hedge ineffectiveness were recorded in the Company's Consolidated Statements of Operations for either the settlement of cash flow hedges or the outstanding hedged balance. At December 31, 2019, the Company's cash flow hedges were in a net deferred loss position of \$4.6 million compared to net deferred gain position of \$1.8 million at December 31, 2018. The change during the period was due to unfavorable movements in short-term interest rates relative to the hedged position. The Company presents derivative instruments in the consolidated financial statements on a gross basis. Deferred gains and losses were recorded in other non-current assets and other non-current liabilities, respectively, and other comprehensive income on the Consolidated Balance Sheets. The net periodic change of the Company's cash flow hedges was recorded on the foreign currency translation adjustment and derivative transactions line of the Consolidated Statements of Equity.

The Company also engages in regular inter-company trade activities and receives royalty payments from certain of its wholly-owned entities, paid in local currency, rather than the Company's functional currency, U.S. Dollars. The Company utilizes foreign currency forward exchange contracts to mitigate the currency risk associated with the anticipated future payments from certain of its international entities. During 2019, 2018 and 2017, losses of \$0.2 million, \$0.5 million and \$0.1 million, respectively, were recorded upon settlement of foreign currency forward exchange contracts. Gains and losses of this nature are recorded to "Other income (expense)" in the Consolidated Statements of Operations.

In October 2015, the Company entered into an interest rate swap agreement for a notional amount of \$262.5 million, which is set to expire in October 2020. The notional amount of this swap mirrors the amortization of a \$262.5 million portion of the Company's \$350.0 million term loan drawn from the original Credit Facility. The swap requires the Company to make a monthly fixed rate payment of 1.46% calculated on the amortizing \$262.5 million notional amount and provides for the Company to receive a payment based upon a variable monthly LIBOR interest rate calculated by amortizing the \$262.5 million same notional amount. The receipt of the monthly LIBOR-based payment offsets a variable monthly LIBOR-based interest cost on a corresponding \$262.5 million portion of the Company's term loan from the original Credit Facility. This interest rate swap is used to partially hedge the interest rate risk associated with the volatility of monthly LIBOR rate movement and is accounted for as a cash flow hedge.

In March 2018, the Company entered into an interest rate swap forward agreement that begins in October 2020 and expires in February 2023 to coincide with the amortization period of the amended Credit Facility. The swap will require the Company to make a monthly fixed rate payment of 2.937% calculated on the then amortizing \$170.6 million notional amount, and provides for the Company to receive a payment based upon a variable monthly LIBOR interest rate calculated on the same amortizing \$170.6 million notional amount. The receipt of the monthly LIBOR-based payment will offset the variable monthly LIBOR-based interest cost on a corresponding \$170.6 million portion of the Company's term loan from the amended Credit Facility. This interest rate swap will be used to partially hedge the interest rate risk associated with the volatility of monthly LIBOR rate movement and accounted for as a cash flow hedge.

The following table summarizes the Company's derivative positions at December 31, 2019:

	Position	Notional Amount	Weighted Average Remaining Maturity In Years	Average Exchange Rate
Interest Rate Swap	—	\$ 190,312,500	3.2	—

The following table summarizes the fair value amounts of the Company's derivative instruments, all of which are Level 2 inputs as defined in Note 2 (in thousands):

Designation of Derivatives	Balance Sheet Location	December 31,	
		2019	2018
Hedging Instruments:			
Interest Rate Swaps	Other non-current assets	\$ 261	\$ 3,648
	Total Assets	\$ 261	\$ 3,648
Interest Rate Swaps	Other non-current liabilities	\$ 4,899	\$ 1,885
	Total Liabilities	\$ 4,899	\$ 1,885
Forward Currency Contracts	Accrued expenses	\$ —	\$ 44
	Total Liabilities	\$ —	\$ 44
	Total Derivative Assets	\$ 261	\$ 3,648
	Total Derivative Liabilities	4,899	1,929
	Total Net Derivative Asset (Liability)	\$ (4,638)	\$ 1,719

16. SELECTED QUARTERLY FINANCIAL DATA (UNAUDITED)

Unaudited quarterly financial data was as follows (in thousands, except per share data):

	First Quarter ⁽¹⁾	Second Quarter ⁽²⁾	Third Quarter ⁽³⁾	Fourth Quarter ⁽⁴⁾
Year Ended December 31, 2019:				
Revenues	\$ 276,904	\$ 318,740	\$ 308,789	\$ 309,502
Gross profit	48,295	67,437	66,792	63,711
Operating income (loss)	(774)	459	14,649	(3,361)
Net income (loss)	(3,991)	(8,147)	6,349	(13,659)
Earnings (loss) per share attributable to Aegion Corporation:				
Basic	\$ (0.13)	\$ (0.27)	\$ 0.20	\$ (0.47)
Diluted	\$ (0.13)	\$ (0.27)	\$ 0.19	\$ (0.47)

⁽¹⁾ Includes pre-tax expenses of \$2.9 million related to our restructuring efforts (see Note 4).

⁽²⁾ Includes pre-tax expenses of \$6.5 million related to our restructuring efforts (see Note 4).

⁽³⁾ Includes pre-tax expenses of \$8.6 million related to our restructuring efforts (see Note 4).

⁽⁴⁾ Includes pre-tax expenses of \$14.3 million related to our restructuring efforts (see Note 4).

	First Quarter ⁽¹⁾	Second Quarter ⁽²⁾	Third Quarter ⁽³⁾	Fourth Quarter ⁽⁴⁾
Year Ended December 31, 2018:				
Revenues	\$ 324,861	\$ 335,030	\$ 339,679	\$ 333,998
Gross profit	61,504	71,053	72,673	61,696
Operating income (loss)	3,181	14,459	13,009	(1,002)
Net income (loss)	(1,476)	7,198	141	(2,776)
Earnings (loss) per share attributable to Aegion Corporation:				
Basic	\$ (0.06)	\$ 0.24	\$ (0.01)	\$ (0.08)
Diluted	\$ (0.06)	\$ 0.24	\$ (0.01)	\$ (0.08)

⁽¹⁾ Includes pre-tax expenses of \$5.2 million related to our restructuring efforts (see Note 4).

⁽²⁾ Includes pre-tax expenses of \$2.9 million related to our restructuring efforts (see Note 4).

⁽³⁾ Includes pre-tax expenses of \$7.4 million related to our restructuring efforts (see Note 4).

⁽⁴⁾ Includes pre-tax expenses of \$13.9 million related to our restructuring efforts (see Note 4).

17. SUBSEQUENT EVENTS

Sale of Insituform Australia

On January 24, 2020, the Company sold its Australian CIPP contracting entity, Insituform Pacific Pty Limited (“IPPL”), to Insituform Holdings Pty Ltd, an entity affiliated with Killard Infrastructure Pty Ltd. In connection with the sale, the Company entered into an exclusive five-year tube supply agreement whereby IPPL, under its new ownership, will buy liners exclusively from the Company. IPPL is also entitled to use the Insituform[®] trade name in Australia based on a trademark license granted for the same five-year time period. During the second quarter of 2019, the Company recorded an impairment charge of \$5.1 million to adjust carrying value to the expected fair value less cost to sell. No additional impairment charges are expected to be recorded as the net carrying value approximated or was less than the sale price.

Sale of Insituform Spain

On February 13, 2020, the Company sold its Spanish CIPP contracting entity, Insituform Technologies Iberica, S.A. (“Insituform Spain”) to Lajusocrey S.L. In connection with the sale, the Company entered into a five-year tube supply agreement whereby Insituform Spain will buy liners from the Company. The buyers are also entitled to use the Insituform[®] trade name in Spain based on a trademark license granted for the same five-year time period. During the fourth quarter of 2019, the Company recorded an impairment charge of \$6.0 million to adjust carrying value to the expected fair value less cost to sell. No additional impairment charges are expected to be recorded as the net carrying value approximated or was less than the sale price.

Item 9. Changes in and Disagreements with Accountants on Accounting and Financial Disclosure.

None.

Item 9A. Controls and Procedures.

Our management, under the supervision and with the participation of our Chief Executive Officer (our principal executive officer) and Chief Financial Officer (our principal financial officer), has conducted an evaluation of the effectiveness of the design and operation of our disclosure controls and procedures (as defined in Rules 13a-15(e) and 15d-15(e) of the Securities Exchange Act of 1934, as amended (the “Exchange Act”), as of December 31, 2019. Based upon and as of the date of this evaluation, our Chief Executive Officer and Chief Financial Officer have concluded that our disclosure controls were effective to provide reasonable assurance that the information required to be disclosed by us in the reports that we file or submit under the Exchange Act (a) is recorded, processed, summarized and reported within the time period specified in the Securities and Exchange Commission’s rules and forms, and (b) is accumulated and communicated to our management, including our principal executive and principal financial officers, as appropriate to allow timely decisions regarding required disclosure.

Management’s report is included in Item 8 of this Report under the caption entitled “Management’s Report on Internal Control Over Financial Reporting,” and is incorporated herein by reference. The effectiveness of the Company’s internal control over financial reporting as of December 31, 2019 has been audited by PricewaterhouseCoopers LLP, an independent registered public accounting firm, as stated in its report which is included in Item 8 of this Report under the caption entitled “Report of Independent Registered Public Accounting Firm” and is incorporated herein by reference.

Changes in Internal Control Over Financial Reporting

There were no changes in our internal control over financial reporting that occurred during the fourth quarter ended December 31, 2019 that materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

Item 9B. Other Information.

Not applicable.

PART III

Item 10. Directors, Executive Officers and Corporate Governance.

Information concerning this item is included in “Item 4A. Executive Officers of the Registrant” of this Report and under the captions “Director Nominees,” “Delinquent Section 16(a) Reports,” “Corporate Governance Documents,” “Director Nominations” and “Board of Directors and Its Committees” in our Proxy Statement for our 2020 Annual Meeting of Stockholders (“2020 Proxy Statement”) and is incorporated herein by reference.

Item 11. Executive Compensation.

Information concerning this item is included under the captions “Compensation Discussion and Analysis,” “Compensation in Last Fiscal Year,” “Compensation of Directors,” “Compensation Committee Interlocks and Insider Participation” and “Compensation Committee Report” in the 2020 Proxy Statement and is incorporated herein by reference.

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

Information concerning this item is included in Item 5 of this Report under the caption “Equity Compensation Plan Information” and under the caption “Information Concerning Certain Stockholders” in the 2020 Proxy Statement and is incorporated herein by reference.

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

Information concerning this item is included under the captions “Related-Party Transactions” and “Director Independence” in the 2020 Proxy Statement and is incorporated herein by reference.

Item 14. Principal Accountant Fees and Services.

Information concerning this item is included under the caption “Independent Auditors’ Fees” in the 2020 Proxy Statement and is incorporated herein by reference.

PART IV

Item 15. Exhibits and Financial Statement Schedules.

1. Financial Statements:

The consolidated financial statements filed in this Annual Report on Form 10-K are listed in the Index to Consolidated Financial Statements included in “Item 8. Financial Statements and Supplementary Data,” which information is incorporated herein by reference.

2. Financial Statement Schedules:

No financial statement schedules are included herein because of the absence of conditions under which they are required or because the required information is contained in the consolidated financial statements or notes thereto contained in this Report.

3. Exhibits:

The exhibits required to be filed as part of this Annual Report on Form 10-K are listed in the Index to Exhibits attached hereto.

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.

Dated: March 2, 2020

AEGION CORPORATION

By: /s/ Charles R. Gordon
Charles R. Gordon
President and Chief Executive Officer

POWER OF ATTORNEY

The registrant and each person whose signature appears below hereby appoint Charles R. Gordon and David F. Morris as attorneys-in-fact with full power of substitution, severally, to execute in the name and on behalf of the registrant and each such person, individually and in each capacity stated below, one or more amendments to the annual report which amendments may make such changes in the report as the attorney-in-fact acting deems appropriate and to file any such amendment to the report with the Securities and Exchange Commission.

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.

Signature	Title	Date
<u>/s/ Charles R. Gordon</u> Charles R. Gordon	Principal Executive Officer and Director	March 2, 2020
<u>/s/ David F. Morris</u> David F. Morris	Principal Financial Officer	March 2, 2020
<u>/s/ John L. Heggemann</u> John L. Heggemann	Principal Accounting Officer	March 2, 2020
<u>/s/ Stephen P. Cortinovis</u> Stephen P. Cortinovis	Director	March 2, 2020
<u>/s/ Stephanie A. Cuskley</u> Stephanie A. Cuskley	Director	March 2, 2020
<u>/s/ Walter J. Galvin</u> Walter J. Galvin	Director	March 2, 2020
<u>/s/ Rhonda Germany Ballintyn</u> Rhonda Germany Ballintyn	Director	March 2, 2020
<u>/s/ Juanita H. Hinshaw</u> Juanita H. Hinshaw	Director	March 2, 2020
<u>/s/ M. Richard Smith</u> M. Richard Smith	Director	March 2, 2020
<u>/s/ Phillip D. Wright</u> Phillip D. Wright	Director	March 2, 2020

INDEX TO EXHIBITS ⁽¹⁾

- 3.1 Certificate of Incorporation of the Company (incorporated by reference to Exhibit 3.1 to the current report on Form 8-K12B filed on October 26, 2011), and Certificate of Designation, Preferences and Rights of Series A Junior Participating Preferred Stock (incorporated by reference to Exhibit 3.3 to the current report on Form 8-K12B filed October 26, 2011).
- 3.2 Certificate of Correction of the Certificate of Incorporation of the Company (incorporated by reference to Exhibit 3.2 to the annual report on Form 10-K for the year ended December 31, 2013).
- 3.3 Amended and Restated By-Laws of the Company (incorporated by reference to Exhibit 3.1 to the current report on Form 8-K filed August 4, 2015).
- 4.1 Description of Securities, filed herewith.
- 10.1 2016 Employee Equity Incentive Plan of the Company (incorporated by reference to Appendix A to the definitive proxy statement on Schedule 14A filed March 11, 2016 in connection with the 2016 annual meeting of stockholders). ⁽²⁾
- 10.2 First Amendment to 2016 Employee Equity Incentive Plan of the Company (incorporated by reference to Appendix A to the definitive proxy statement on Schedule 14A filed March 17, 2017 in connection with the 2017 annual meeting of stockholders). ⁽²⁾
- 10.3 Second Amendment to 2016 Employee Equity Incentive Plan of the Company (incorporated by reference to Appendix A to the definitive proxy statement on Schedule 14A filed March 16, 2018 in connection with the 2018 annual meeting of stockholders). ⁽²⁾
- 10.4 Amended and Restated 2001 Non-Employee Director Equity Incentive Plan of the Company (incorporated by reference to Appendix B to the definitive proxy statement on Schedule 14A filed April 16, 2003 in connection with the 2003 annual meeting of stockholders). ⁽²⁾
- 10.5 2006 Non-Employee Director Equity Plan of the Company (incorporated by reference to Appendix B to the definitive proxy statement on Schedule 14A filed March 10, 2006 in connection with the 2006 annual meeting of stockholders). ⁽²⁾
- 10.6 2011 Non-Employee Director Equity Plan of the Company (incorporated by reference to Appendix A to the definitive proxy statement on Schedule 14A filed March 18, 2011 in connection with the 2011 annual meeting of stockholders). ⁽²⁾
- 10.7 2016 Non-Employee Director Equity Plan of the Company (incorporated by reference to Appendix C to the definitive proxy statement on Schedule 14A filed March 11, 2016 in connection with the 2016 annual meeting of stockholders). ⁽²⁾
- 10.8 Amended and Restated Aegion Corporation 2016 Non-Employee Director Equity Plan (incorporated by reference to Appendix A to the definitive proxy statement on Schedule 14A filed March 6, 2019 in connection with the 2019 annual meeting of stockholders). ⁽²⁾
- 10.9 Employee Stock Purchase Plan of the Company (incorporated by reference to Appendix B to the definitive proxy statement on Schedule 14A filed March 17, 2017 in connection with the 2017 annual meeting of stockholders). ⁽²⁾
- 10.10 Voluntary Deferred Compensation Plan, as amended and restated effective January 1, 2018 (incorporated by reference to Exhibit 10.10 to the annual report on Form 10-K for the year ended December 31, 2017). ⁽²⁾
- 10.11 2016 Executive Performance Plan of the Company (incorporated by reference to Appendix B to the definitive proxy statement on Schedule 14A filed March 11, 2016 in connection with the 2016 annual meeting of stockholders). ⁽²⁾

- 10.12 Form of Directors' Indemnification Agreement (incorporated by reference to Exhibit 10.13 to the annual report on Form 10-K for the year ended December 31, 2011).
- 10.13 Form of Executive Change in Control Severance Agreement, dated as of October 6, 2014, between Aegion Corporation and each of Charles R. Gordon and David F. Morris (incorporated by reference to Exhibit 10.6 to the current report on Form 8-K filed October 10, 2014).⁽²⁾
- 10.14 Form of First Amendment to Executive Change in Control Severance Agreement, dated May 2, 2016, by and between Aegion Corporation and each of Charles R. Gordon and David F. Morris (incorporated by reference to Exhibit 10.2 to the quarterly report on Form 10-Q for the quarter ended March 31, 2016).⁽²⁾
- 10.15 Form of Change in Control Severance Agreement, dated as of March 1, 2017, between Aegion Corporation and Mark A. Menghini and Kenneth L. Young (incorporated by reference to Exhibit 10.15 to the annual report filed on Form 10-K for the year ended December 31, 2016).⁽²⁾
- 10.16 Form of First Amendment to Change in Control Severance Agreement, dated as of October 22, 2018, between Aegion Corporation and Mark A. Menghini (incorporated by reference to Exhibit 10.1 to the quarterly report on Form 10-Q for the quarter ended September 30, 2018).⁽²⁾
- 10.17 Form of Change in Control Severance Agreement, dated June 24, 2019, between Aegion Corporation and John L. Heggemann (incorporated by reference to Exhibit 10.1 to the quarterly report on Form 10-Q for the quarter ended June 30, 2019).⁽²⁾
- 10.18 Form of Amendment to Change in Control Severance Agreement, dated as of October 31, 2019, between Aegion Corporation and each of Charles R. Gordon, David F. Morris, Mark A. Menghini, Kenneth L. Young and John L. Heggemann (incorporated by reference to Exhibit 10.1 to the quarterly report on Form 10-Q for the quarter ended September 30, 2019).⁽²⁾
- 10.19 Severance Policy effective December 21, 2018 (incorporated by reference to Exhibit 10.15 to the annual report filed on Form 10-K for the year ended December 31, 2018).⁽²⁾
- 10.20 Management Annual Incentive Plan, effective January 1, 2020, filed herewith.⁽²⁾
- 10.21 Form of Director Deferred Stock Unit Agreement for Annual Grants (for Non-Employee Directors) (incorporated by reference to Exhibit 10.2 to the quarterly report on Form 10-Q for the quarter ended March 31, 2019).⁽²⁾
- 10.22 Form of Director Deferred Stock Unit Agreement for Grants in Lieu of Cash (for Non-Employee Directors) (incorporated by reference to Exhibit 10.3 to the quarterly report on Form 10-Q for the quarter ended March 31, 2019).⁽²⁾
- 10.23 Form of Performance Unit Agreement, dated February 17, 2020, between Aegion Corporation and certain executive officers of Aegion Corporation, filed herewith.⁽²⁾
- 10.24 Form of Restricted Stock Unit Agreement, dated February 17, 2020, between Aegion Corporation and certain executive officers of Aegion Corporation, filed herewith.⁽²⁾
- 10.25 Letter agreement, dated October 6, 2014, between Aegion Corporation and Charles R. Gordon (incorporated by reference to Exhibit 10.2 to the current report on Form 8-K filed October 10, 2014).⁽²⁾
- 10.26 Separation Agreement and Full and Final Release, dated February 24, 2020, between Aegion Corporation and Stephen P. Callahan, filed herewith.⁽²⁾
- 10.27 Form of Five-Year Restricted Stock Unit Agreement, dated April 23, 2018, between Aegion Corporation and David F. Morris (incorporated by reference to Exhibit 10.1 to the current report filed on Form 8-K filed April 27, 2018).⁽²⁾
- 10.28 Amended and Restated Credit Agreement, dated October 30, 2015 (incorporated by reference to Exhibit 10.1 to the current report on Form 8-K filed November 2, 2015).
- 10.29 First Amendment to Credit Agreement, dated November 30, 2017 (incorporated by reference to Exhibit 10.1 to the current report on Form 8-K filed December 6, 2017).

- 10.30 Second Amendment to Credit Agreement, dated February 27, 2018 (incorporated by reference to Exhibit 10.1 to the current report on Form 8-K filed March 1, 2018).
- 10.31 Third Amendment to Credit Agreement, dated December 13, 2018 (incorporated by reference to Exhibit 10.1 to the current report on Form 8-K filed December 14, 2018).
- 21 Subsidiaries of the Company, filed herewith.
- 23 Consent of PricewaterhouseCoopers LLP, filed herewith.
- 24 Power of Attorney (set forth on signature page).
- 31.1 Certification of Charles R. Gordon pursuant to Section 302 of the Sarbanes-Oxley Act of 2002, filed herewith.
- 31.2 Certification of David F. Morris pursuant to Section 302 of the Sarbanes-Oxley Act of 2002, filed herewith.
- 32.1 Certification of Charles R. Gordon pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, filed herewith.
- 32.2 Certification of David F. Morris pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, filed herewith.
- 95 Mine Safety Disclosure, filed herewith.
- 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*
- 104 Cover Page Interactive Data File (formatted as Inline XBRL and contained in Exhibit 101).

** In accordance with Rule 406T under Regulation S-T, the XBRL-related information in Exhibit 101 shall be deemed “furnished” and not “filed”.*

⁽¹⁾ The Company’s current, quarterly and annual reports are filed with the Securities and Exchange Commission under file no. 001-35328.

⁽²⁾ Management contract or compensatory plan or arrangement.

* * *

Documents listed in this Index to Exhibits will be made available upon written request.

AEGION CORPORATION
Net Income Reconciliation to Non-GAAP

IN THOUSANDS, EXCEPT PER SHARE DATA

2019		
	Amount	EPS
Net loss attributable to Aegion Corporation (GAAP, as reported)	\$ (20,892)	\$ (0.67)
<i>Adjustments:</i>		
Restructuring-related charges	29,849	0.95
Impairment of assets held for sale	23,427	0.74
Acquisition and divestiture expenses	2,673	0.09
Project warranty accrual	3,260	0.10
Tax Cuts and Jobs Act	46	-
Net income attributable to Aegion Corporation (Non-GAAP)	<u>\$ 38,363</u>	<u>\$ 1.21</u>
2018		
	Amount	EPS
Net income attributable to Aegion Corporation (GAAP, as reported)	\$ 2,928	\$ 0.09
<i>Adjustments:</i>		
Restructuring-related charges	23,979	0.72
Acquisition and divestiture expenses	10,419	0.32
Change in accounting estimate	2,157	0.07
Credit facility financing fees	1,604	0.05
Tax Cuts and Jobs Act	(1,917)	(0.06)
Net income attributable to Aegion Corporation (Non-GAAP)	<u>\$ 39,170</u>	<u>\$ 1.19</u>
2017		
	Amount	EPS
Net loss attributable to Aegion Corporation (GAAP, as reported)	\$ (69,401)	\$ (2.09)
<i>Adjustments:</i>		
Restructuring-related charges	20,781	0.62
Long-lived asset and goodwill impairments	78,616	2.35
Acquisition and divestiture expenses	2,016	0.06
Tax Cuts and Jobs Act	2,426	0.08
Net income attributable to Aegion Corporation (Non-GAAP)	<u>\$ 34,438</u>	<u>\$ 1.02</u>
2016		
	Amount	EPS
Net Income attributable to Aegion Corporation (GAAP, as reported)	\$ 29,453	\$ 0.84
<i>Adjustments:</i>		
Restructuring-related charges	10,227	0.29
Acquisition-related expenses	4,366	0.12
Litigation settlement	(3,982)	(0.11)
Reversal of contingency reserve	(1,458)	(0.04)
Net income attributable to Aegion Corporation (Non-GAAP)	<u>\$ 38,606</u>	<u>\$ 1.10</u>
2015		
	Amount	EPS
Net loss attributable to Aegion Corporation (GAAP, as reported)	\$ (10,284)	\$ (0.28)
<i>Adjustments:</i>		
Restructuring-related charges	8,712	0.24
Goodwill impairments	35,711	0.97
Credit facility financing fees	2,023	0.05
Acquisition-related expenses	4,657	0.13
Joint venture and divestiture activity	1,427	0.04
Litigation settlement	1,660	0.04
Reserves for disputed and long-dated accounts receivable	1,110	0.03
Net income attributable to Aegion Corporation (Non-GAAP)	<u>\$ 45,016</u>	<u>\$ 1.22</u>

AEGION CORPORATION
Operating Income Reconciliation to Non-GAAP

IN THOUSANDS, EXCEPT MARGIN PERCENTAGES

2019		
	Amount	Margin
Operating income (GAAP, as reported)	\$ 10,973	0.9%
<i>Adjustments:</i>		
Restructuring-related charges	22,111	
Impairment of assets held for sale	23,427	
Acquisition and divestiture expenses	3,375	
Project warranty accrual	4,429	
Tax Cuts and Jobs Act	63	
Operating income (Non-GAAP)	<u>\$ 64,378</u>	5.3%

2018		
	Amount	Margin
Operating income (GAAP, as reported)	\$ 29,647	2.2%
<i>Adjustments:</i>		
Restructuring-related charges	25,516	
Acquisition and divestiture expenses	7,004	
Change in accounting estimate	2,789	
Operating income (Non-GAAP)	<u>\$ 64,956</u>	4.9%

2017		
	Amount	Margin
Operating loss (GAAP, as reported)	\$ (43,520)	(3.2%)
<i>Adjustments:</i>		
Restructuring-related charges	23,987	
Long-lived asset and goodwill impairments	86,422	
Acquisition and divestiture expenses	2,923	
Operating income (Non-GAAP)	<u>\$ 69,812</u>	5.1%

2016		
	Amount	Margin
Operating income (GAAP, as reported)	\$ 50,791	4.2%
<i>Adjustments:</i>		
Restructuring-related charges	15,680	
Acquisition-related expenses	6,268	
Litigation settlement	(6,625)	
Reversal of contingency reserve	(2,336)	
Operating income (Non-GAAP)	<u>\$ 63,778</u>	5.2%

2015		
	Amount	Margin
Operating income (GAAP, as reported)	\$ 17,729	1.3%
<i>Adjustments:</i>		
Restructuring-related charges	8,072	
Goodwill impairments	43,484	
Acquisition-related expenses	1,912	
Litigation settlement	2,771	
Reserves for disputed and long-dated accounts receivable	2,883	
Operating income (Non-GAAP)	<u>\$ 76,851</u>	5.8%

AEGION CORPORATION
Segment Operating Income Reconciliation to Non-GAAP

IN THOUSANDS, EXCEPT MARGIN PERCENTAGES

Infrastructure Solutions						
	<u>2019</u>		<u>2018</u>		<u>2017</u>	
	Amount	Margin	Amount	Margin	Amount	Margin
Operating income (loss) (GAAP, as reported)	\$ 42,079	7.1%	\$ 37,509	6.2%	\$ (47,316)	(7.7%)
<i>Adjustments:</i>						
Restructuring-related charges	7,547		16,052		17,523	
Long-lived asset and goodwill impairments	-		-		86,422	
Impairment of assets held for sale	17,617		-		-	
Acquisition and divestiture expenses	1,054		432		80	
Project warranty accrual	4,429		-		-	
Operating income (Non-GAAP)	<u>\$ 72,726</u>	12.3%	<u>\$ 53,993</u>	8.9%	<u>\$ 56,709</u>	9.3%

Corrosion Protection						
	<u>2019</u>		<u>2018</u>		<u>2017</u>	
	Amount	Margin	Amount	Margin	Amount	Margin
Operating income (loss) (GAAP, as reported)	\$ (5,635)	(1.9%)	\$ 16,283	4.1%	\$ 32,222	7.1%
<i>Adjustments:</i>						
Restructuring-related charges	7,676		7,565		4,860	
Impairment of assets held for sale	2,950		-		-	
Acquisition and divestiture expenses	128		2,468		1,642	
Change in accounting estimate	-		2,789		-	
Operating income (Non-GAAP)	<u>\$ 5,119</u>	1.7%	<u>\$ 29,105</u>	7.4%	<u>\$ 38,724</u>	8.5%

Energy Services						
	<u>2019</u>		<u>2018</u>		<u>2017</u>	
	Amount	Margin	Amount	Margin	Amount	Margin
Operating income (GAAP, as reported)	\$ 9,740	3.0%	\$ 9,638	2.9%	\$ 7,736	2.7%
<i>Adjustments:</i>						
Restructuring-related charges	1,661		262		-	
Operating income (Non-GAAP)	<u>\$ 11,401</u>	3.5%	<u>\$ 9,900</u>	2.9%	<u>\$ 7,736</u>	2.7%

Corporate						
	<u>2019</u>		<u>2018</u>		<u>2017</u>	
	Amount		Amount		Amount	
Operating loss (GAAP, as reported)	\$ (35,211)		\$ (33,783)		\$ (36,162)	
<i>Adjustments:</i>						
Restructuring-related charges	5,227		1,637		1,604	
Impairment of assets held for sale	2,860		-		-	
Acquisition and divestiture expenses	2,193		4,104		1,201	
Tax Cuts and Jobs Act	63		-		-	
Operating loss (Non-GAAP)	<u>\$ (24,868)</u>		<u>\$ (28,042)</u>		<u>\$ (33,357)</u>	

BOARD OF DIRECTORS



Stephanie A. Cuskley

Chairwoman of the Board
Audit Committee (Member)
Ex Officio Member of All Other
Standing Board Committees
CEO
*Leona M. and Henry B. Helmsley
Charitable Trust*



Charles R. Gordon

Strategic Planning
Committee (Member)
President & CEO
Aegion Corporation



Stephen P. Cortinovis

Strategic Planning
Committee (Chair)
Compensation Committee
(Member)
Former President, Europe
Emerson Electric Co.



Walter J. Galvin

Audit Committee (Chair)
Corporate Governance & Nominating
Committee (Member)
Former CFO & Vice Chairman
Emerson Electric Co.



Rhonda Germany Ballintyn

Corporate Governance & Nominating
Committee (Member)
Strategic Planning
Committee (Member)
*Former VP & Chief Strategy
and Marketing Officer*
Honeywell International, Inc.



Juanita H. Hinshaw

Audit Committee (Member)
Compensation Committee (Member)
President & CEO
H & H Advisors



M. Richard Smith

Corporate Governance & Nominating
Committee (Chair)
Strategic Planning
Committee (Member)
Former SVP and President,
Fossil Power
Bechtel Corporation



Phillip D. Wright

Compensation Committee (Chair)
Strategic Planning
Committee (Member)
Former President & CEO
Williams Energy Services, Inc.

CORPORATE INFORMATION

AEGION CORPORATION EXECUTIVE OFFICERS

Charles R. Gordon

President & Chief Executive Officer

David F. Morris

Executive Vice President & Chief Financial Officer

John L. Heggemann

Senior Vice President, Controller & Chief Accounting Officer

Mark A. Menghini

Senior Vice President, General Counsel & Secretary

Kenneth L. Young

Senior Vice President, Treasury & Tax

INDEPENDENT ACCOUNTANTS

PricewaterhouseCoopers LLP
800 Market Street, St. Louis, Missouri 63101

TRANSFER AGENT & REGISTRAR

American Stock Transfer & Trust Company
59 Maiden Lane, New York, New York 10038

PRICE RANGE OF SECURITIES

The Company's common shares, \$0.01 par value, are traded on The Nasdaq Global Select Market under the symbol "AEGN." The following table sets forth the range of quarterly high and low sales prices for the years ended December 31, 2019 and 2018, as reported on The Nasdaq Global Select Market. Quotations represent prices between dealers and do not include retail markups, markdowns or commissions.

PERIOD	HIGH	LOW
2019:		
First Quarter	\$ 21.11	\$ 15.94
Second Quarter	20.36	14.12
Third Quarter	21.85	17.46
Fourth Quarter	23.65	19.78
2018:		
First Quarter	\$ 26.75	\$ 21.16
Second Quarter	26.78	22.06
Third Quarter	26.80	22.67
Fourth Quarter	25.54	15.12

FORM 10-K

A copy of the Company's Annual Report on Form 10-K for the year ended December 31, 2019, as filed with the Securities and Exchange Commission on March 2, 2020, is available free of charge on our website, www.aegion.com, or upon request by writing to the Company's Investor Relations department at 17988 Edison Avenue, St. Louis, Missouri 63005.



AEGION CORPORATION

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www.aegion.com

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