

**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, 2016

or

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

Commission File Number 001-36670

FAIRMOUNT SANTROL HOLDINGS INC.

(Exact name of registrant as specified in its charter)

Delaware
(State or Other Jurisdiction
of Incorporation or Organization)

34-1831554
(I.R.S. Employer
Identification No.)

8834 Mayfield Road
Chesterland, Ohio 44026
(Address of Principal Executive Offices) (Zip Code)
(800) 255-7263
(Registrant's Telephone Number, Including Area Code)

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

Title of each class:
Common Stock, par value \$0.01 per share

Name of each exchange on which registered:
New York Stock Exchange

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

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

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

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

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

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K (§229.405 of this chapter) is not contained herein, and will not be contained, to the best of the registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K.

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, or a smaller reporting company. See the definitions of "large accelerated filer," "accelerated filer" and "smaller reporting company" in Rule 12b-2 of the Exchange Act (Check one):

Large accelerated filer

Non-accelerated filer

Accelerated filer

Smaller reporting company

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

The aggregate market value of common stock held by non-affiliates of the registrant computed by reference to the last sales price, \$7.71 as reported on the New York Stock Exchange, of such common stock as of the closing of trading on June 30, 2016: \$549,912,304

Number of shares of Common Stock outstanding, par value \$0.01 per share, as of March 2, 2017: 223,863,231

DOCUMENTS INCORPORATED BY REFERENCE

Part III of Form 10-K

Certain sections of the Proxy Statement for the 2017 Annual Meeting of Stockholders of Fairmount Santrol Holdings Inc.

Fairmount Santrol Holdings Inc. and Subsidiaries
Annual Report on Form 10-K
For the Fiscal Year Ended December 31, 2016

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Introduction to Part I, Item 1A and Item 3, and Part II, Item 7

We define various terms to simplify the presentation of information in this Annual Report on Form 10-K (this “Report”). Unless we state otherwise or the context otherwise requires, the terms “we,” “us,” “our,” “Fairmount Santrol,” “our business” and “our company” refer to Fairmount Santrol Holdings Inc. and its consolidated subsidiaries and predecessor companies. We use Adjusted EBITDA herein as a non-GAAP measure of our financial performance. See further discussion of Adjusted EBITDA at Item 7 – Management’s Discussion and Analysis.

FORWARD-LOOKING STATEMENTS

This Report contains forward-looking statements that are subject to risks and uncertainties. All statements other than statements of historical fact included in this Report are forward-looking statements. Forward-looking statements give our current expectations and projections relating to our financial condition, results of operations, plans, objectives, future performance and business. You can identify forward-looking statements by the fact that they do not relate strictly to historical or current facts. These statements may include words such as “anticipate,” “estimate,” “expect,” “project,” “plan,” “intend,” “believe,” “may,” “will,” “should,” “can have,” “likely” and other words and terms of similar meaning in connection with any discussion of the timing or nature of future operating or financial performance or other events. For example, all statements we make relating to our estimated and projected costs, expenditures, cash flows, growth rates and financial results, our plans and objectives for future operations, growth or initiatives, strategies or the expected outcome or impact of pending or threatened litigation are forward-looking statements. All forward-looking statements are subject to risks and uncertainties that may cause actual results to differ materially from those that we expected, including:

- the price of oil and gas and the level of activity in the oil and gas industries;
- the level of cash flows generated to provide adequate liquidity to meet our working capital needs, capital expenditures, and our lease and debt obligations;
- increasing costs or a lack of dependability or availability of transportation services or infrastructure and geographic shifts in demand;
- changes to leased terminal arrangements impacting our distribution network and ability to deliver our products to our customers;
- actions of our competitors, including, but not limited to, their ability to increase production capacity to levels which cause an imbalance in supply and demand resulting in lower market prices;
- our rights and ability to mine our properties and our renewal or receipt of the required permits and approvals from governmental authorities and other third parties;
- fluctuations in demand and pricing for raw and coated sand-based proppants or the development of either effective alternative proppants or new processes to replace hydraulic fracturing;
- continuing pressure on market-based pricing;
- lower of cost or market inventory adjustments and/or obsolete inventory due to lower proppant demand from the oil and gas industry;
- our ability to protect our intellectual property rights;
- our ability to continue to commercialize Propel SSP® proppants;
- our ability to succeed in competitive markets;
- loss of, or reduction in, business from our largest customers;
- our exposure to the credit risk of our customers and any potential material nonpayments, bankruptcies, and/or nonperformance by our customers;

- our transactions in, and operating subsidiaries with, functional currencies other than the U.S. dollar. We are exposed to fluctuations in exchange rates of these currencies compared to the U.S. dollar, which is the primary currency in which we operate. These fluctuations may be significant, and may not be fully mitigated by risk management techniques, such as foreign currency hedging;
- changes in U.S. or international political or economic conditions, could adversely impact our operating results;
- fluctuations in demand for industrial and recreational sand;
- operating risks that are beyond our control, such as changes in the price and availability of transportation, natural gas or electricity; unusual or unexpected geological formations or pressures; cave-ins, pit wall failures or rock falls; or unanticipated ground, grade or water conditions;
- our dependence on our Wedron Silica sand-mining facility for a significant portion of our sales, which currently supplies a large majority of our Northern White™ frac sand and a portion of our Industrial & Recreational Products (“I&R”) segment sand sold into our markets;
- the availability of raw materials to support our manufacturing of coated proppants;
- diminished access to water;
- challenges to our title to our mineral properties and water rights;
- our ability to make capital expenditures to maintain, develop and increase our asset base and our ability to obtain needed capital or financing on satisfactory terms, including financing for existing commitments such as future railcar deliveries;
- the potential impairment of our property, including our mineral reserves, plant, equipment, goodwill, and intangible assets as a result of market conditions;
- substantial indebtedness, lease and pension obligations;
- restrictions imposed by our indebtedness and lease obligations on our current and future operations;
- the accuracy of our estimates of our mineral reserves and our ability to mine them;
- substantial costs related to mines, coating facilities, and terminals that have been closed;
- potential disruption of our operations due to severe weather conditions, such as wind storms, ice storms, tornadoes, electrical storms, and floods, which occur in areas where we operate;
- a shortage of skilled labor and rising labor costs in the mining industry;
- increases in the prices of, or interruptions in the supply of, natural gas and electricity, or any other energy sources;
- our ability to attract and retain key personnel;
- our ability to maintain satisfactory labor relations;
- silica-related health issues and corresponding litigation;
- our ability to maintain effective quality control systems at our mining, processing and production facilities;
- fluctuations in our sales and results of operations due to seasonality and other factors;
- interruptions or failures in our information technology systems;
- failure to comply with the provisions of the Foreign Corrupt Practices Act (“FCPA”);
- the impact of a terrorist attack or armed conflict;
- cybersecurity breaches;
- our failure to maintain adequate internal controls;

- extensive and evolving environmental, mining, health and safety, licensing, reclamation and other regulation (and changes in their enforcement or interpretation);
- our ability to acquire, maintain or renew financial assurances related to the reclamation and restoration of mining property; and
- other factors disclosed in the section entitled “Risk Factors” and elsewhere in this Report.

We derive many of our forward-looking statements from our operating budgets and forecasts, which are based on many detailed assumptions. While we believe that our assumptions are reasonable, we caution that it is very difficult to predict the impact of known factors, and it is impossible for us to anticipate all factors that could affect our actual results. Important factors that could cause actual results to differ materially from our expectations, or cautionary statements, are disclosed under the sections entitled “Risk Factors” and “Management’s Discussion and Analysis of Financial Condition and Results of Operations” in this Report. All written and oral forward-looking statements attributable to us, or persons acting on our behalf, are expressly qualified in their entirety by these cautionary statements as well as other cautionary statements that are made from time to time in our other SEC filings and public communications. You should evaluate all forward-looking statements made in this Report in the context of these risks and uncertainties.

We caution you that the important factors referenced above may not contain all of the factors that are important to you. In addition, we cannot assure you that we will realize the results or developments we expect or anticipate or, even if substantially realized, that they will result in the consequences or affect us or our operations in the way we expect. The forward-looking statements included in this Report are made only as of the date hereof. We undertake no obligation to update or revise any forward-looking statement as a result of new information, future events or otherwise, except as otherwise required by law.

ITEM 1. BUSINESS

Our Company

Business Overview

We are one of the world's largest providers of sand-based proppant solutions and for nearly 40 years have been a pioneer in the development of high performance proppants used by Exploration & Production ("E&P") companies to enhance the productivity of their oil and gas wells. Additionally, for more than 120 years, we and our predecessor companies have provided high quality sand-based products, strong technical leadership and applications knowledge to end users in the I&R markets.

As one of the industry leaders, our asset base at December 31, 2016 included 742 million tons of proven and probable mineral reserves, which we believe is one of the largest reserve bases in the industry. Due to the conditions in the oil and gas markets, we have adjusted our operational footprint to minimize our costs and consolidate into the lowest-cost footprint possible and continue to make cost reductions. As of March 2017, we have 10 sand processing facilities (8 of which are active) with 16.8 million tons of annual sand processing capacity. We re-opened our Menomonie, Wisconsin facility at the end of the third quarter 2016 and restarted our Brewer, Missouri and Maiden Rock, Wisconsin facilities in early 2017, primarily to serve the increased demand in the proppant market. We also have 9 coating facilities (5 of which are active) with 2.3 million tons of annual coating capacity.

As one of the nation's longest continuously operating mining organizations, we have developed a strong commitment to environmental stewardship and to the three pillars of Sustainable Development: People, Planet and Prosperity. Our strong commitment to safety is reflected in the health and safety of our employees and is illustrated by our achieving a consistently low recordable incident rate among our similarly sized industrial sand competitors as well as one of the lowest rates for all those reporting in the Industrial Mining Association of North America. Since 2011, our employees have demonstrated our commitment to our communities by donating over 76,000 hours of company-paid volunteer hours, as well as significant personal volunteer hours, into the communities in which we live and operate. We are focused on environmental stewardship, and 27 of our facilities now generate zero waste to landfills. Additionally, we executed upon annual initiatives to reduce our carbon emissions and have planted nearly 500,000 trees since 2011 in order to offset our remaining Tier I and Tier 2 emissions. We believe adhering to sustainable development principles is not only the right thing to do, but also results in a higher level of engagement and commitment from our employees, better relationships with our communities and, as a result, a stronger base from which to pursue profitable growth over the long-term. Abiding by these guiding principles, our corporate motto is "Do Good. Do Well."

Over a period of nearly 40 years, Fairmount Santrol has built a vertically integrated operation that combines mining, sand processing, resin manufacturing and coating operations with a broad logistics network and state-of-the-art research and development capabilities. Our ability to integrate and leverage our asset base to provide comprehensive proppant solutions has allowed us to become a long-term, trusted partner to our customers.

We are capable of Class I railroad deliveries to each of North America's major oil and gas producing basins and also have the flexibility to ship our product via barge, marine terminals and trucks to reach our customers as needed. We operate an integrated logistics platform consisting of 41 proppant distribution terminals and a fleet of approximately 10,000 railcars, which includes 1,195 customer railcars, considering car returns that took place throughout the year and subleases. Our unit train capabilities include four production facilities and nine in-basin terminals, which reduce freight costs and improve cycle times for our railcar fleet. In order to better align our logistics network with customer demand and to reduce costs, we discontinued activity at five transloading terminals in 2016.

Our operations are organized into two segments based on the primary end markets we serve: (i) Proppant Solutions and (ii) Industrial & Recreational Products. Our Proppant Solutions segment predominantly provides sand-based proppants for use in hydraulic fracturing operations throughout the U.S. and Canada, Argentina, Mexico, China, northern Europe and the United Arab Emirates. Our I&R segment provides raw, coated, and custom blended sands to the foundry, building products, glass, turf and landscape and filtration industries primarily in North America. We believe our two market segments are complementary. Our ability to sell to a wide range of customers across

multiple end markets allows us to maximize the recovery of our reserve base within our mining operations and to reduce the cyclicity of our earnings.

In 2016, our Proppant Solutions segment sold 6.4 million tons of proppant with revenues of \$416.1 million (78% of total company revenues) and gross profit of \$26.5 million. This represents an increase of 3%, a decrease of 41%, and a decrease of 85%, respectively, from 2015. Proppants represented approximately 86% and 91% of total company revenues for 2015 and 2014, respectively. For 2016, our I&R segment had sales volume of 2.5 million tons with revenues of \$118.9 million and gross profit of \$48.8 million, which represents increases of 9% on volume and gross profit, respectively, from 2015. Revenues were relatively flat to 2015.

Corporate History

We were incorporated as a Delaware corporation in 1986. Our predecessor companies began operations over 120 years ago. On October 3, 2014, we completed an Initial Public Offering. We are listed under the ticker symbol “FMSA” on the New York Stock Exchange.

Our corporate headquarters is located at 8834 Mayfield Road, Chesterland, Ohio 44026. Our telephone number is (800) 255-7263. Our company website is www.fairmountsanrol.com. We make available free of charge our annual report on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K, and amendments to those reports as soon as reasonably practicable after we file or furnish such reports to the Securities and Exchange Commission (the “SEC”). The information on our website is not incorporated by reference in or considered to be a part of this Annual Report on Form 10-K.

INDUSTRY

Overview

The silica sand industry consists of businesses that are involved in the mining, processing, and sale of silica sand and silica sand-based products. Monocrystalline silica, also referred to as “silica,” “industrial sand and gravel,” “silica sand,” and “quartz sand,” is a term applied to sands and gravels containing a high percentage of silica (also known as silicon dioxide or SiO₂) in the form of quartz.

The low relative cost and special properties of monocrystalline silica — chemistry, purity, grain size, color, inertness, hardness, and resistance to high temperatures — make it critical to a variety of industries and end-use markets, including the production of molds and cores for metal castings, glass production, and the manufacturing of building products. In particular, monocrystalline silica is a key input in the hydraulic fracturing techniques used in the development of oil and gas resource basins.

Frac Sand Extraction, Processing, and Distribution

Raw frac sand is a naturally occurring mineral that is mined and processed. While the specific extraction method utilized depends primarily on the geologic conditions, most raw frac sand is mined using conventional open-pit extraction methods. The composition, depth, and chemical purity of the sand also dictate the processing method and equipment utilized. After extraction, raw frac sand is washed with water to remove fine impurities such as clay and organic particles, with additional procedures used when contaminants are not easily removable. The final steps in the production process involve the drying and screening of the raw frac sand according to mesh size.

Most frac sand is shipped in bulk from the processing facility to customers by truck, rail or barge. Because transportation costs may represent a significant portion of the overall delivered product cost, shipping in large quantities, particularly when shipping over long distances, provides a significant cost advantage to the suppliers, which highlights the importance of rail or barge access for low cost delivery. As a result, facility location and logistics capabilities are an important consideration for suppliers and customers. In addition, we believe that, over time, the largest proppant customers would prefer to consolidate their purchases across a smaller group of suppliers with robust logistics capabilities and a broad offering of high performance proppants.

Oil and Gas Proppant Market

Advances in oil and gas extraction techniques, such as horizontal drilling and hydraulic fracturing, have allowed for significantly greater extraction of oil and gas trapped within shale formations. The hydraulic fracturing process consists of pumping fluids down a well at pressures sufficient to create fractures in the targeted hydrocarbon-bearing rock formation in order to increase the flow rate of hydrocarbons from the well. A granular material, called proppant, is suspended and transported in the fluid and fills the fracture, “propping” it open once high-pressure pumping stops. The proppant-filled fracture creates a conductive channel through which the hydrocarbons can flow more freely from the formation into the wellbore and then to the surface. Proppants therefore perform the vital function of promoting the flow, or conductivity, of hydrocarbons over a well’s productive life. In fracturing a well, operators select a proppant that is transportable into the fracture, is compatible with frac and wellbore fluids, permits acceptable cleanup of frac fluids and can resist proppant flowback. In addition, the proppant must be resistant to crushing under the earth’s closure stress and reservoir temperature.

There are three primary types of proppant that are utilized in the hydraulic fracturing process: raw frac sand, coated sand and manufactured ceramic beads. Customers choose among these proppant types based on the geology of the reservoir, expected well pressures, proppant flowback concerns, and product cost. Given the price differences between the various proppant products and well-specific considerations, E&P companies are continually evaluating the optimal mix of lower-cost, lower-conductivity frac sand and higher-cost, higher-conductivity coated sand and ceramics in order to best address the geology of the well and to maximize well productivity and economic returns.

Proppant Industry Demand Trends

Over the past decade, E&P companies increasingly focused on exploiting the vast hydrocarbon reserves contained in North America’s oil and gas reservoirs. Using advanced techniques, such as horizontal drilling and hydraulic fracturing, North American production of oil and gas has grown rapidly as the development of horizontal drilling technologies has evolved. More recently, E&P companies increased their focus on optimizing the use of proppant as a critical component of these efforts to improve well productivity and maximize their returns on invested capital.

This focus on efficiency and profitability led to new development techniques, such as increased use of pad drilling which resulted in a greater number of wells drilled per rig, and incorporated longer lateral lengths and shorter intervals between frac stages, which resulted in more fracturing stages per well. In addition, the amount of proppant used per stage increased dramatically, compounding the increase in total demand for proppant.

As a result of these trends, North American demand for all proppants increased rapidly over the past ten years. This growth was fueled by the continued increase in both wells drilled and proppant used per well. Individual wells were being completed with as much as 20,000 tons of proppant, or 60 to 100 railcars. This represented a significant increase in the usage of proppant per well over just a few years ago and was driven by improved recovery rates for E&P companies at higher levels of proppant intensity.

Starting in the fourth quarter of 2014 and continuing into mid-2016, the growth rate of global oil supply outpaced that of oil demand. As a result, various operators have cut back on drilling and capital programs, resulting in significantly reduced rig counts. According to Baker Hughes rig count data, United States horizontal land rig counts have fallen from an average of 730 rigs throughout 2015 to an average of 400 rigs in 2016. During 2016, horizontal land rigs in the United States ranged from a low point of 310 rigs in the second quarter to over 530 by the end of the year. This volatility and cyclicality in horizontal rig counts has resulted in market uncertainty and reduced drilling activity and demand for proppants throughout the year. Further, since 2014, average crude oil prices have dropped over \$50 per barrel causing E&P companies to seek ways to reduce operating costs, which has further reduced demand for our value-added products such as coated proppants. We believe that the completion of wells that have been drilled and increased proppant usage per well will continue to help partially offset reduced demand for proppants from lower drilling activity in 2016 and beyond. Towards the end of 2016 into early 2017, the price of oil has stabilized and the United States horizontal land rig counts have increased showing potential signs of market stabilization.

Proppant Industry Supply Trends

To keep pace with rapidly growing demand, the available supply of proppant increased in 2014 through new entrants and capacity expansions of existing suppliers. Due to the industry factors noted above, there continued to be downward pressure on the selling price of proppants, as well as the closing or idling of industry capacity in 2015 into early 2016. This trend began to reverse in the second half of 2016, where demand and pricing of proppants has begun a gradual recovery and customers are beginning to focus on long-term availability of proppant supply. The effectiveness of additional market supply also will be impacted by the suppliers' ability to deliver product cost effectively where customers want it. Certain basins, such as the Permian in West Texas and New Mexico, have been particularly active and suppliers of proppant are actively attempting to provide lower-cost sources of supply that can be efficiently delivered to these areas.

Our Proppant Products

We offer proppant products in each of the most common API-specified proppant categories, which we believe address a vast majority of the proppant market. All revenues in our Proppant Solutions segment are derived from these products in each of 2016, 2015, and 2014.

Northern White Frac Sand. Our Northern White frac sand is mined from deposits located in our Illinois, Wisconsin, Missouri, and Minnesota facilities. These reserves are generally characterized by high purity, significant roundness and sphericity, and low turbidity. All of our Northern White raw sand proppant products meet the standards set by the API.

API-Spec Brown Frac Sand. Our API-spec brown sand reserves are located in Texas and marketed under the name Texas Gold® frac sand. Our Texas Gold® frac sand has lower crush resistance than our Northern White frac sand, but it is an effective solution for low pressure wells. These reserves are in close proximity to major oil and gas producing basins in Texas, including the Eagle Ford Shale and the Permian Basin, which provides them with a significant transportation cost advantage relative to API-spec frac sand sourced from more distant locations.

Coated Proppant. We coat a portion of our API-spec produced sand with resin to enhance its performance as a proppant using proprietary resin formulations and coating technologies. Our coated proppants are generally used in higher temperature and higher pressure well environments and are marketed to end users who require increased conductivity in higher pressure wells, high crush resistance, and/or enhanced flow back control in order to enhance the productivity of their wells.

Our coated sand products are sold as both tempered (or pre-cured) and curable (or bonding) products. Curable coated sand bonds down hole as the formation heat causes neighboring coated sand grains to polymerize with one another locking proppant into place. This prevents proppant from flowing back out of the fracture when the oil or natural gas well commences production. For certain resin products, the resin's chemical properties are triggered by the introduction of an activator into the frac fluid. We formulate, manufacture, and sell activators, which work with the specific chemistry of our resins. Tempered products do not require activation because they are not intended to bond, rather bring additional strength to the proppant.

We manufacture proprietary coatings designed to address the evolving needs of our customers, and have continued to invest in our research and development and technical marketing capabilities to maximize the sales of our coated products. We also coat ceramic product purchased from third-party suppliers. This product is marketed as HyperProp® proppants and has the strength characteristics of ceramic and the flowback performance characteristics of coated sand.

Proprietary Performance Products

Propel SSP®. Our patented Propel SSP® product utilizes a polymer coating applied to a proppant substrate. Upon contact with water, the coating hydrates and swells rapidly to create a hydrogel around the proppant substrate. The hydrogel layer, which is primarily water, is attached to the proppant particle and provides a nearly threefold increase in the hydrostatic radius of the proppant. Test results indicate that the lower specific gravity allows greater volumes of proppant and/or coarser mesh sizes coated with the Propel SSP® product to be carried deep into the fracture,

which in turn allow more hydrocarbons to escape into the wellbore. As a result, field trials have shown a variety of benefits, including increased production, decreased use of fluids, and reduced pumping time.

Our Product Delivery

We have established an oil and gas logistics network that we believe is highly responsive to our customers' needs. One of the most important purchasing criteria of our proppant customers is our ability to deliver the products our customers demand at their desired time and location. We believe we have one of the industry's largest distribution footprints with 41 active oil and gas distribution terminals. We also have a railcar fleet of approximately 10,000 railcars as of December 31, 2016, providing us the flexibility for delivering product to our locations in-basin when customers require it. We believe we are one of the few proppant producers capable of Class I railroad deliveries to each of North America's major oil and gas-producing basins. In 2016, we shipped approximately 75% of our North American proppant volume through our terminal network.

The ability to ship proppant through unit trains (a train in which all cars carry the same commodity and are not split up or stored en route) is becoming increasingly important in order to cost-effectively provide the large quantities of product required by evolving well completion methods. We have unit train capabilities at four of our production facilities and nine of our destination terminals and shipped over 330 unit trains of product in 2016. The production unit train capability allows our customers that prefer to purchase the product FOB plant to efficiently ship the proppant to their own facilities.

By the end of the third quarter of 2016, we completed negotiations with certain railcar lessors and paid approximately \$9.8 million in fees that resulted in reductions to current railcar operating lease payments, in some cases in exchange for consideration including an extension of the lease terms. In addition, railcar purchase commitments in 2017 and 2018 approximating \$49.5 million were cancelled and \$136.5 million of purchase commitments were deferred. Please see further detail in Note 18 of our consolidated financial statements in the Annual Report on Form 10-K.

I&R Industry Trends

Demand in the I&R end markets is relatively stable and is primarily influenced by key macroeconomic drivers such as housing starts, light vehicle sales, repair and remodel activity, and industrial production. The economic downturn beginning in 2008 decreased demand in the foundry, building products, and glassmaking end markets, however, the recent economic recovery has significantly increased demand in these same end markets. The primary end markets served by our I&R segment are foundry, building products, sports and recreation, glassmaking, and filtration. All revenues in our I&R segment are derived from the following products in each of 2016, 2015, and 2014.

Our I&R Products

Foundry. We currently supply the foundry industry with multiple grades of high purity, round, angular, and sub-angular sands for molding and core-making applications, with products sold primarily in the U.S., Canada, Mexico, Japan, and China. Foundry sands are characterized by high purity, round and sub-angular sands precisely screened to perform under a variety of metal casting conditions. These factors dictate the refractory level and physical characteristics of the mold and core, which have a significant effect on the quality of the castings produced in the foundry. Our resin binders provide the necessary bonding of molds and cores in casting applications and are designed to improve overall productivity and environment conditions in the workplace.

Our extensive production experience and technical knowledge of the foundry industry have driven several industry advances. For example, we have developed our Signature Series™ of low smoke, low odor coated sands that provide lower overall emissions while providing a safer and more favorable work environment. Our expertise with coated sands enables us to provide coated sand for molds and cores where exceptional dimensional accuracy and surface finish are required. An example is TruCoat™, which has been engineered to dramatically lower in-plant smoke, odor, and emissions as well as deliver superior performance making TruCoat™ one of the most environmentally sound products on the market.

We believe we were the first sand operator to blend sands, which has proven extremely successful for specialty iron and aluminum applications. As foundries continue to utilize higher cost binders to improve the quality of their castings, minimize the use of binders which also reduces overall environmental impact, the industry continues to demand higher quality sands to realize the value of these binders. Our chemists and technicians support these applications with customized products that minimize binder usage, resulting in lower costs to foundries and higher prices for our products.

Glass. We provide a wide variety of high purity, low iron silica sands to the glass market. The glass industry uses industrial sand consumption for the production of windows, electronic display screens, photovoltaic panels, glass bottles, and other glass products.

Building Products. Various grades and types of our sands are used for roofing shingles, asphalt, industrial flooring ballast sand, bridge decking, pipe lining, and tank underlayment. We also work with our customers to blend minerals and chemicals to create colored flooring aggregates, concrete countertops, grout and plaster.

Sports and Recreation. We are a leading supplier of various turf and landscape infill products to contractors, municipalities, nurseries, and mass merchandisers. Our turf-related products are used in multiple major sporting venues, including First Energy Stadium and Progressive Field in Cleveland, Ohio, PNC Park in Pittsburgh, Pennsylvania, and Notre Dame Stadium in Notre Dame, Indiana. In addition, we are a significant supplier of bunker sand, top dressing sands, and all-purpose sands to golf courses and landscape contractors throughout North America. Our sands are also supplied to horse tracks and training facilities. We also provide colored sand to a variety of major retailers for use as play sand and arts and crafts.

Filtration. We provide high-quality industrial sands and gravels in a wide variety of water and wastewater filtration applications. Over the past several years, we increased our focus on the filtration market. Our full range of products are monitored with an active statistical process control program to ensure compliance with all government and customer specifications, including the American Water Works and National Sanitation Foundation standards. Due to our efforts, we have emerged as a leader in sand and gravel products for private, public, and institutional water filtration systems.

Raw Materials

Our products are dependent on the availability of certain raw materials, including natural gas or propane, resins and additives, bagging supplies, and other raw materials. These are readily available from a variety of sources and we are not dependent on any one supplier of raw materials.

Our Customers

Since our inception, we have remained focused on developing and sustaining a loyal, diversified customer base. Currently, we maintain long-term contracts with many of the largest North American oilfield service companies. We believe the strength of our customer base is driven by our collaborative approach to product innovation and development, reputation for high-quality products, and extensive logistics network. Certain of our top customer relationships date back over 30 years. We have approximately 75 customers for our oil and gas proppants and over 830 customers across all our end markets. For the years ended December 31, 2016 and 2015, our top two customers, Halliburton and FTSI, collectively, accounted for approximately 42% and 43%, respectively, of our total sales revenues.

We primarily sell products under supply agreements with terms that vary by contract. Certain of the agreements require the customer to purchase a specified percentage of its proppant requirements from us. Other agreements require the customer to purchase a minimum volume of proppant from us. These minimum volume contracts typically include a “take-or-pay” or “take-or-penalty” provision which triggers certain penalties if the purchased volume does not meet the required minimums. Specific custom orders are generally filled upon request, and backlog is not a material factor.

Research and Development and Technical Innovation

We have a history of partnering with our customers to develop innovative solutions to enhance the effectiveness of well completions, from conventional shallow wells to the most complex, multi-stage, horizontal wells. The nature of our vertically integrated model allows us to participate in each phase of proppant manufacturing and delivery and provides us a unique perspective into the current and future needs of our customers. Our technical sales team works closely with market participants to demonstrate the value proposition our proppants offer and stimulate market demand using data indicating enhanced hydrocarbon recoveries.

The table below summarizes some of our most significant product innovations:

Innovation	Year	Result
Propel SSP® 350 Products	2016	Accomplishes the same results as the original SSP technology when faced with brackish, sea, or produced water
CoolSet® Proppants	2014	Eliminates need for an activator for well temperatures as low as 100°F
TrueSet™ Proppants	2016	Provides effective flowback control and enhanced production, ideal for downhole temperatures between 150-300°F, does not require an activator, compatible with standard frac fluids and break technologies
PowerProp® Proppants	2010	Technology that delivers strength and performance characteristics similar to a light-weight ceramic (patent-pending)
Bio-based Binder System	2010	Technology for use in metal casting industry (patent-pending)
Bio-Balls® Ball Sealers	2006	Water soluble ball sealers that are environmentally safe and do not require retrieval after treatment
Encapsulated Curable Proppant	1997	High performance coated proppant used in flow-back control
Dual Coat Technology	1995	Dual coat curable coated sand for enhanced conductivity and flowback control

During 2016, 2015, and 2014, we spent \$3 million, \$5 million, and \$6 million, respectively, on research and development.

Propel SSP® products continue to undergo extensive field trials with key customers with successful results (increased productivity and reduced operating costs). Propel SSP® products rely on a hydrogel polymer coating attached to a proppant substrate. When mixed with water, the coating hydrates and swells rapidly to create a hydrogel around the proppant substrate, which provides a nearly threefold increase in the hydrostatic radius of the proppant. Lab results show that the lower specific gravity, while maintaining crush strength, allows greater volumes of proppant and/or coarser mesh sizes coated with Propel SSP® products to be carried deep into the fractures, in turn allowing more hydrocarbons to flow into the wellbore. This technology reduces or eliminates the need for certain frac fluid additives, including friction reducer, guar gum, and crosslinkers, which are used to enhance the transport of proppants into the geologic formation. Extensive field tests have shown the benefits of Propel SSP® products, including increased initial production, reduced fluid usage, and reduced pumping time. Propel SSP® 350 products can now accomplish the same results in hard water.

Competition

There are numerous large and small producers in all sand producing regions of the United States with whom we compete. Our main competitors in the raw frac sand market include Badger Mining Corporation, CARBO Ceramics, Inc., Emerge Energy Services LP, Hi-Crush Partners LP, Preferred Sands LLC, Smart Sand Inc., Unimin Corporation, and U.S. Silica Holdings, Inc. Many new entrants to the raw frac sand market compete on an FOB-plant basis and lack comparable transportation infrastructure to meet customer demands in-basin. Our main competitors in the coated products market include Atlas Resin Proppants LLC, CARBO Ceramics, Momentive Performance Materials Inc., Unimin Corporation, Preferred Sands LLC, and U.S. Silica Holdings, Inc. The most important factors on which we compete in both markets are product quality, performance, sand and proppant characteristics, transportation capabilities, proximity of supply to well site, reliability of supply, and price. Our largest competitors across both markets are U.S. Silica Holdings, Inc., Unimin Corporation, and Badger Mining

Corporation (which owns Atlas Resin Proppants LLC). We believe we are uniquely positioned to utilize our scale of raw sand production to supply high-quality substrate for coated products and leverage our transportation infrastructure for reliable delivery in-basin.

Due to increased demand for sand based proppants in the years leading up to the end of 2014, there had been an increase in the number of frac sand producers. Moreover, as a result of this increased demand, existing frac sand producers have added to or expanded their frac sand production capacity, thereby increasing competition. Demand for sand-based proppants is closely linked to proppant consumption patterns for the completion of oil and natural gas wells in North America. These consumption patterns in a particular basin are influenced by numerous factors, including the price of hydrocarbons, the drilling rig count, and hydraulic fracturing activity levels, including the number of stages completed and the amount of proppant used per stage. Further, these consumption patterns are also influenced by the location, quality, selling price and availability of sand-based proppants and other types of proppants such as ceramic proppant. Selling prices for sand-based proppants vary by basin and are determined based on supply and demand dynamics within each basin.

As a result of increasing global supply of oil, the demand for proppant has decreased since the end of 2014 and through 2016, resulting in proppant oversupply and downward pressure on proppant selling prices. This caused some proppant producers to exit the market and others, including us, to adjust operations and minimize costs. Towards the end of 2016 into early 2017, the price of oil has stabilized and the United States horizontal land rig counts have increased showing potential signs of market stabilization.

Competitors in the I&R markets include some of our larger proppant competitors such as Unimin Corporation and U.S. Silica Holdings, Inc. but also typically include smaller, local or regional producers of sand and gravel.

Employees

As of December 31, 2016, we employed a workforce of 744 employees. We believe our culture of “People, Planet and Prosperity” has enabled us to achieve a long-tenured workforce and good relations with our workforce.

We maintain an active dialogue with employees and provide salaried and hourly employees a comprehensive benefits package including medical, life, and accident insurance, incentive bonus programs, a 401(k) plan with an employer match and discretionary employer contribution, as well as educational assistance. Certain employees are also eligible for stock-based compensation programs that are designed to encourage long-term performance aligned with Company objectives.

As of December 31, 2016, approximately 138 of our domestic employees are parties to collective bargaining contracts. We believe we have strong relationships with and maintain an active dialogue with union representatives. We have historically been able to successfully extend and renegotiate collective bargaining agreements as they expire.

Seasonality

Our business is affected to some extent by seasonal fluctuations in weather that impact our production levels and our customers’ business needs. For example, our proppant sales levels are lower in the first and fourth quarters due to lower market demand as adverse weather tends to slow oil and gas operations to varying degrees depending on the severity of the weather. Our inability to mine and process frac sand year round at our surface mines in northern states results in a seasonal build-up of inventory as we excavate excess sand to build a stockpile that will feed our drying facilities during the winter months. Additionally, in the second and third quarters, we sell more sand to our customers in the I&R end markets due to the seasonal rise in demand driven by more favorable weather conditions.

Intellectual Property

Our intellectual property consists primarily of patents, trade secrets, know-how, trademarks, including our name Fairmount Santrol™ and products, including, but not limited to PowerProp®, Propel SSP®, HyperProp®, and CoolSet®. We hold numerous U.S. and foreign-granted patents that are still in force as well as many U.S. and

foreign patent applications that are still pending. We own patents in most of our major, differentiated proppant product lines. We have not granted any third-party rights with respect to our patents. The majority of our patents have an expiration date after 2025. In early 2016, we received a patent on certain of the Propel SSP® proppant technology and have additional patents pending. With respect to trade secrets and know-how, our extensive experience with a variety of different products enables us to offer our customers a wide range of proppants for their particular application.

ITEM 1A. RISK FACTORS

An investment in our securities involves significant risks. You should carefully consider the risks described below, together with the financial and other information contained in this Report, as well as the information discussed under the section entitled, “Management's Discussion and Analysis of Financial Conditions and Results of Operations” in evaluating us, our business and your investment in us. If any of the following risks actually occurs, our business, financial condition, results of operations, cash flows, and prospects could be materially and adversely affected. As a result, the trading price of our common stock could decline and you could lose all or part of your investment in our common stock.

Risks Related to Our Business

Our business and financial performance depend on the level of activity in the oil and gas industries.

Approximately 78% of our revenues for the year ended December 31, 2016 were derived from sales to companies in the oil and gas industry. As a result, our operations are materially dependent on the levels of activity in oil and gas exploration, development, and production. More specifically, the demand for the proppants we produce is closely related to the number of oil and gas wells completed in geological formations where sand-based proppants are used in fracturing activities. These activity levels are affected by both short- and long-term trends in oil and gas prices, among other factors.

In recent years, oil and gas prices and, therefore, the level of exploration, development, and production activity, have experienced significant fluctuations. Worldwide economic, political, and military events, including war, terrorist activity, events in the Middle East, and initiatives by the Organization of the Petroleum Exporting Countries (“OPEC”) and other large non-OPEC producers have contributed, and are likely to continue to contribute, to price and volume volatility. In 2016, OPEC producers reached an agreement to limit production through May 2017, which contributed to an increase in global oil and gas prices. However, this limit is voluntary and political and other issues may create varying degrees of adherence to this limitation, which could cause volatility and price fluctuations in the demand for oil and gas.

Despite the pricing rebound in the latter half of 2016, prices were still not at sustainable levels and remain subject to volatility. A return to a reduction in oil and gas prices would generally depress the level of oil and gas exploration, development, production, and well completion activity and may result in a corresponding decline in the demand for the proppants we produce. Such a decline would have a material adverse effect on our business, results of operations, and financial condition, and we may not be able to meet our debt obligations. The commercial development of economically-viable alternative energy sources could have a similar effect. In addition, certain U.S. federal income tax deductions currently available with respect to oil and gas exploration and development, including the repeal of the percentage depletion allowance for oil and gas properties, may be eliminated as a result of proposed legislation. Any future decreases in the rate at which oil and gas reserves are discovered or developed, whether due to the passage of legislation, increased governmental regulation leading to limitations, or prohibitions on exploration and drilling activity, including hydraulic fracturing, or other factors, could have a material adverse effect on our business and financial condition, even in a stronger oil and natural gas price environment.

Our substantial indebtedness could adversely affect our financial flexibility and our competitive position.

Although our indebtedness has been significantly reduced in 2016, it continues to be substantial and increases the risk that we may be unable to generate cash sufficient to pay amounts due in respect of our indebtedness, or refinance that indebtedness on favorable terms. As of December 31, 2016, we had approximately \$843.0 million of

outstanding long-term debt due in September 2019. Our indebtedness could have other important consequences and significant effects on our business. For example, it could:

- increase our vulnerability to adverse changes in general economic, industry and competitive conditions;
- require us to dedicate a substantial portion of our cash flow from operations to make payments on our indebtedness, thereby reducing the availability of our cash flow to fund working capital, capital expenditures and other general corporate purposes;
- limit our flexibility in planning for, or reacting to, changes in our business and the industry in which we operate;
- restrict us from exploiting business opportunities;
- make it more difficult to satisfy our financial obligations, including payments on our indebtedness;
- place us at a disadvantage compared to our competitors that have less debt; and
- limit our ability to borrow additional funds for working capital, capital expenditures, railcar or other future purchase commitments, acquisitions, debt service requirements, execution of our business strategy, or other general corporate purposes.

Increasing logistics costs, a lack of dependability or availability of transportation services or infrastructure, and geographic shifts in demand could have a material adverse effect on our business.

Transportation and handling costs are a significant component of the total delivered cost of our products. In many instances, transportation costs can represent 70% to 80% of the delivered cost of frac sand. The high relative cost of transportation could favor suppliers located in close proximity to the customer. In addition, as we continue to expand our sand-based proppant production, we will need increased investment in transportation infrastructure, including terminals and railcars. We contract with truck, rail, ship, and barge services to move sand-based proppants from our production facilities to distribution terminals. Labor disputes, derailments, adverse weather conditions or other environmental events, increased railcar congestion, and other changes to rail freight systems could interrupt or limit available transportation services or result in a significant increase in transportation service rates. Increased costs resulting from these types of events that we are not able to pass on to our customers could impair our ability to deliver our products economically to our customers or to expand our markets. Accordingly, because we are so dependent on rail infrastructure, if there are disruptions of the rail transportation services utilized by us or our customers, and we or our customers are unable to find alternative transportation providers to transport our products, our business and results of operations could be adversely affected. Further, declining volumes could result in additional railcar over-capacity, which would lead to railcar storage fees while, at the same time, we would continue to incur lease costs for those railcars in storage.

A portion of our distribution infrastructure is located in or near oil and gas producing areas. A shift in demand away from areas where we have significant distribution infrastructure or relocation of our customers' businesses to areas farther from our plants or distribution infrastructure could have a material adverse effect on our business, financial condition, and results of operations.

Our operations are dependent on timely securing and maintaining various permits and approvals from governmental authorities and other third parties.

We hold numerous governmental, environmental, mining and other permits, water rights and approvals authorizing operations at each of our facilities. A decision by a governmental agency or other third party to deny or delay issuing a new or renewed permit or approval, or to revoke or substantially modify an existing permit or approval, could have a material adverse effect on our ability to continue operations at the affected facility. Furthermore, state and local governments could impose a moratorium on mining operations in certain areas. Expansion of our existing operations is also predicated on securing the necessary environmental or other permits, including air permits for our coated manufacturing, and water rights or approvals, which we may not receive in a timely manner or at all. In addition, our facilities are located near existing and proposed third-party industrial operations that could affect our ability to fully extract, or the manner in which we extract, the mineral reserves to which we have mining rights.

We may be adversely affected by decreased or shifted demand for sand-based proppants or the development of either effective alternative proppants or new processes to replace hydraulic fracturing.

Frac sand and coated sand are proppants used in the completion and re-completion of oil and gas wells through the process of hydraulic fracturing. A significant shift in demand from sand-based proppants to other proppants, or a shift in demand from higher-margin sand-based proppants to lower-margin sand-based proppants, could have a material adverse effect on our business, financial condition, and results of operations. The development and use of new technology for effective alternative proppants, or the development of new processes to replace hydraulic fracturing altogether, could also cause a decline in demand for the sand-based proppants we produce and could have a material adverse effect on our business, financial condition, and results of operations.

Our proppant sales are subject to fluctuations in market pricing.

Substantially all of our supply agreements involving the sale of sand-based proppants have market-based pricing mechanisms. Accordingly, in periods with decreasing prices, our results of operations may be lower than if our agreements had fixed prices. In periods with increasing prices, our agreements permit us to increase prices; however, our customers may elect to cease purchasing our sand-based proppants if they do not agree with our price increases or are able to find alternative, cheaper sources of supply. Furthermore, certain volume-based supply agreements may influence the ability to fully capture current market pricings. These pricing provisions may result in significant variability in our results of operations and cash flows from period to period.

Changes in supply and demand dynamics could also impact market pricing for proppants. A number of existing frac sand providers and new market entrants have recently announced reserve acquisitions, processing capacity expansions and greenfield projects. In periods where sources of supply of raw frac sand exceed market demand, market prices for frac sand may decline and our results of operations and cash flows may continue to decline, be volatile, or otherwise be adversely affected.

We may not be able to complete greenfield development or expansion projects or, if we do, we may not realize the expected benefits.

Any greenfield development or expansion project requires us to spend substantial capital and obtain numerous state and local permits. A decision by any governmental agency not to issue a required permit or substantial delays in the permitting process could prevent us from pursuing the development or expansion project. In addition, if the demand for our products declines during the period we experience delays in raising capital or completing the permitting process, we may not realize the expected benefits from our greenfield facility or expansion project. Furthermore, our new or modified facilities may not operate at designed capacity or may cost more to operate than we expect. The inability to complete greenfield development or expansion projects or to complete them on a timely basis and in turn grow our business could adversely affect our business and results of operations.

We rely upon trade secrets, contractual restrictions and patents to protect our proprietary rights. Failure to protect our intellectual property rights may undermine our competitive position, and protecting our rights or defending against third-party allegations of infringement may be costly.

Our commercial success depends on our proprietary information and technologies, know-how and other intellectual property. Because of the technical nature of our business, we rely on patents, trade secrets, trademarks, and contractual restrictions to protect our intellectual property rights, particularly with respect to our coated products. The measures we take to protect our trade secrets and other intellectual property rights may be insufficient. Failure to protect, monitor, and control the use of our existing intellectual property rights could cause us to lose our competitive advantage and incur significant expenses. It is possible that our competitors or others could independently develop the same or similar technologies or otherwise obtain access to our unpatented technologies. In such case, our trade secrets would not prevent third parties from competing with us. As a result, our results of operations may be adversely affected. Furthermore, third parties or our employees may infringe or misappropriate our proprietary technologies or other intellectual property rights, which could also harm our business and results of operations. Policing unauthorized use of intellectual property rights can be difficult and expensive, and adequate remedies may not be available.

In addition, third parties may claim that our products infringe or otherwise violate their patents or other proprietary rights and seek corresponding damages or injunctive relief. Defending ourselves against such claims, with or without merit, could be time-consuming and result in costly litigation. An adverse outcome in any such litigation could subject us to significant liability to third parties (potentially including treble damages) or temporary or permanent injunctions prohibiting the manufacture or sale of our products, the use of our technologies or the conduct of our business. Any adverse outcome could also require us to seek licenses from third parties (which may not be available on acceptable terms, or at all) or to make substantial one-time or ongoing royalty payments. Protracted litigation could also result in our customers or potential customers deferring or limiting their purchase or use of our products until resolution of such litigation. In addition, we may not have insurance coverage in connection with such litigation and may have to bear all costs arising from any such litigation to the extent we are unable to recover them from other parties. Any of these outcomes could have a material adverse effect on our business, financial condition and results of operations.

The development and marketing of Propel SSP® products may prove to be unsuccessful.

The technology supporting Propel SSP® products is still being proven through field trials. Although the results of field trials have been encouraging, and one customer in particular is using Propel SSP® products on a commercial basis in all of its wells, additional testing ultimately may demonstrate that the product is ineffective or not commercially viable. A return to or a prolonged decline in the oil and gas market may make the adoption of higher-value products, such as Propel SSP® products, more difficult. Additionally, competitive products could be developed and marketed. A failure to capitalize on Propel SSP® products in commercial application would result in a significant unrecovered investment and the failure to realize certain anticipated benefits, each of which could have a material adverse effect on our business, financial condition, and results of operations. For more information on Propel SSP® products, please read “Management’s Discussion and Analysis of Financial Condition and Results of Operations – Acquisitions.”

Our future performance will depend on our ability to succeed in competitive markets, and on our ability to appropriately react to potential fluctuations in demand for and supply of sand-based proppants.

We operate in a highly competitive market that is characterized by several large, national producers and a larger number of small, regional or local producers. Competition in the industry is based on price, consistency and quality of product, site location, distribution capability, customer service, reliability of supply, breadth of product offering, and technical support. In the proppant business, we compete with producers such as Badger Mining Corporation, CARBO Ceramics Inc., Emerge Energy Services LP, Hi-Crush Partners, LP, Momentive Performance Materials Inc., Preferred Sands LLC, Smart Sand Inc., Unimin Corporation, and U.S. Silica Holdings, Inc. Certain of our large competitors may have greater financial and other resources than we do, may develop technology superior to ours or may have production facilities that are located closer to key customers than ours.

We also compete with smaller, regional or local producers. In recent years there has been an increase in the number of small producers servicing the sand-based proppants market which could result in increased competition and pricing pressure in certain market conditions. In addition, oil and gas exploration and production companies and other providers of hydraulic fracturing services could acquire their own sand reserves, expand their existing sand-based proppant production capacity or otherwise fulfill their own proppant requirements and existing or new sand-based proppant producers could add to or expand their sand-based proppants production capacity, which could increase competition in the proppant industry. We may not be able to compete successfully against either our larger or smaller competitors in the future, and competition could have a material adverse effect on our business, financial condition and results of operations.

A large portion of our sales is generated by a limited number of customers, and the loss of, or a significant reduction in purchases by, our largest customers could adversely affect our operations.

For the year ended December 31, 2016 and 2015, our top two proppant customers, Halliburton and FTSI, collectively accounted for approximately 42% and 43% of our sales, respectively. These customers may not continue to purchase the same levels of our sand-based proppants in the future due to a variety of reasons. Over the course of our relationships, we have sold proppant to Halliburton and FTSI on a purchase order basis and pursuant to supply agreements. We currently have supply agreements with both customers that contain customary

termination provisions for bankruptcy related events and uncured breaches of the applicable agreement. If any of our major customers substantially reduces or altogether ceases purchasing our sand-based proppants and we are not able to generate replacement sales of sand-based proppants into the market, our business, financial condition, and results of operations could be adversely affected for a short-term period until such time as we generate replacement sales in the market.

We are exposed to the credit risk of our customers, and any material nonpayment or nonperformance by our customers could adversely affect our financial results.

We are subject to the risk of loss resulting from nonpayment or nonperformance by our customers, many of whose operations are concentrated solely in the global oilfield services industry which, as described above, is subject to volatility and therefore credit risk. Our credit procedures and policies may not be adequate to fully reduce customer credit risk. If we fail to adequately assess the creditworthiness of existing or future customers or unanticipated deterioration in their creditworthiness, any resulting increase in nonpayment or nonperformance by them and our inability to re-market or otherwise use the production could have a material adverse effect on our business, financial condition, and results of operations.

The demand for industrial and recreational sand fluctuates, which could adversely affect our results of operations.

A portion of our sales are to customers in industries that have historically been cyclical, such as glassmaking, building products and foundry. During periods of economic slowdown, our customers often reduce their production rates and also reduce capital expenditures and defer or cancel pending projects. Such developments occur even among customers that are not experiencing financial difficulties.

Demand in many of the end markets for industrial and recreational sand is driven by the construction and automotive industries. For example, the flat glass market depends on the automotive and commercial and residential construction and remodeling markets. The market for industrial sand used to manufacture building products is driven primarily by demand in the construction markets. The demand for foundry silica substantially depends on the rate of automobile, light truck and heavy equipment production. Other factors influencing the demand for industrial and recreational sand include (i) the substitution of plastic or other materials for glass, (ii) competition from offshore producers of glass products, (iii) changes in demand for our products due to technological innovations, and (iv) prices, availability, and other factors relating to our products.

We cannot predict or control the factors that affect demand for our products. Negative developments in the above factors, among others, could cause the demand for industrial and recreational sand to decline, which could adversely affect our business, financial condition, results of operations, cash flows, and prospects.

Our operations are subject to operating risks that are often beyond our control and could adversely affect production levels and costs, and such risks may not be covered by insurance.

Our mining, processing and production facilities are subject to risks normally encountered in the proppant and industrial and recreational sand industries. These risks include:

- changes in the price and availability of transportation;
- changes in the price and availability of natural gas or electricity;
- unusual or unexpected geological formations or pressures;
- cave-ins, pit wall failures, or rock falls, particularly in underground mines;
- unanticipated ground, grade, or water conditions;
- extreme seasonal weather conditions;
- hazardous or catastrophic weather conditions or events, including flooding, tornadoes, and hurricanes, and the physical impacts of climate change;

- environmental hazards;
- industrial accidents;
- changes in laws and regulations (or the interpretation thereof) or increased public scrutiny related to the mining and the drilling and well completion industries, silica dust exposure or the environment;
- inability to acquire or maintain necessary permits or mining or water rights;
- restrictions on blasting and mining operations, including potential moratoriums on mining as result of local activism or complaints;
- inability to obtain necessary production equipment or replacement parts;
- reduction in the amount of water available for processing;
- labor disputes;
- cybersecurity breaches;
- late delivery of supplies;
- fires, explosions, or other accidents; and
- facility shutdowns in response to environmental regulatory actions

Any of these risks could result in damage to, or destruction of, our mining properties or production facilities, personal injury, environmental damage, delays in mining or processing, losses, or possible legal liability. Any prolonged downtime or shutdowns at our mining properties or production facilities could have a material adverse effect on us.

Not all of these risks are reasonably insurable, and our insurance coverage contains limits, deductibles, exclusions, and endorsements. Our insurance coverage may not be sufficient to meet our needs in the event of loss and any such loss may have a material adverse effect on us.

A significant portion of our sales is generated at our Wedron Silica facility. Any adverse developments at this plant could have a material adverse effect on our business, financial condition, and results of operations.

For the year ended December 31, 2016, approximately 81% of our total volumes were produced at our Wedron Silica Facility. As of March 2017, this facility accounts for approximately 50% of our annual sand processing capacity and approximately 50% of our annual coating capacity. A casualty event or other adverse event affecting the production at this plant, including adverse developments due to catastrophic events or weather (including floods, windstorms, ice storms, or tornadoes), adverse government regulatory impacts, private actions by residents of Wedron or surrounding communities, decreased demand for the products this plant produces, adverse developments affecting this plant's customers, or transportation-related constraints, could have a material adverse effect on our business, financial condition, and results of operations.

The manufacture of coated proppants is an important process for us and is dependent on the availability of raw materials .

If we are unable to secure adequate, cost effective supply commitments for the raw materials associated with coated proppants our ability to sell this product to the marketplace at profitable margins may be adversely impacted. Decreased sales of coated proppants or the inability to control the costs associated with manufacturing and distribution of these products could have a material adverse effect on our business, financial condition, and results from operations.

Diminished access to water may adversely affect our operations or the operations of our customers.

The mining and processing activities in which we engage at a number of our facilities require significant amounts of water, and some of our facilities are located in areas that are water-constrained. Additionally, the development of oil

and gas properties through fracture stimulation likewise requires significant water use. We have obtained water rights that we currently use to service the activities on our various properties, and we plan to obtain all required water rights to service other properties we may develop or acquire in the future. However, the amount of water that we and our customers are entitled to use pursuant to our water rights must be determined by the appropriate regulatory authorities in the jurisdictions in which we and our customers operate. Such regulatory authorities may amend the regulations regarding such water rights, increase the cost of maintaining such water rights or eliminate our current water rights, and we and our customers may be unable to retain all or a portion of such water rights. These new regulations, which could also affect local municipalities and other industrial operations, could have a material adverse effect on our operating costs and effectiveness if implemented. Such changes in laws, regulations or government policy and related interpretations pertaining to water rights may alter the environment in which we and our customers do business, which may negatively affect our financial condition and results of operations.

Title to our mineral properties and water rights, and royalties related to our production of sand may be disputed.

Title to, and the area of, mineral properties and water rights, and royalties related to our production of sand, may be disputed. Even though we obtain title guarantees on properties that we purchase, a successful claim that we lack appropriate mineral and water rights on one or more of our properties could cause us to lose any rights to explore, develop and operate mines on that property. Any decrease or disruption in our mineral rights may adversely affect our operations. In some instances, we have received access rights or easements from third parties, which allow for a more efficient operation than would exist without the access or easement. A third party could take action to suspend the access or easement, and any such action could be materially adverse to our results of operations or financial condition.

If we cannot successfully complete acquisitions or integrate acquired businesses, our growth may be limited and our financial condition may be adversely affected.

Our business strategy includes supplementing internal growth by pursuing acquisitions. Any acquisition may involve potential risks, including, among other things:

- the validity of our assumptions about mineral reserves and future production, sales, capital expenditures, operating expenses and costs, including synergies;
- an inability to successfully integrate the businesses we acquire;
- the use of a significant portion of our available cash or borrowing capacity to finance acquisitions and the subsequent decrease in our liquidity;
- a significant increase in our interest expense or financial leverage if we incur additional debt to finance acquisitions;
- the assumption of unknown liabilities, losses or costs for which we are not indemnified or for which our indemnity is inadequate;
- the diversion of management's attention from other business concerns;
- an inability to hire, train or retain qualified personnel both to manage and to operate our growing business and assets;
- the incurrence of other significant charges, such as impairment of goodwill or other intangible assets, asset devaluation, or restructuring charges;
- unforeseen difficulties encountered in operating in new geographic areas;
- customer or key employee losses at the acquired businesses; and
- the accuracy of data obtained from production reports and engineering studies, geophysical and geological analyses, and other information used when deciding to acquire a property, the results of which are often inconclusive and subject to various interpretations.

If we cannot successfully complete acquisitions or integrate acquired businesses, our growth may be limited and our financial condition may be adversely affected.

We will be required to make substantial capital expenditures to maintain, develop and increase our asset base. The inability to obtain needed capital or financing on satisfactory terms, or at all, could have a material adverse effect on our growth and profitability.

Although we currently use a significant amount of our cash reserves and cash generated from our operations to fund the maintenance and development of our existing mineral reserves and production capacity and our acquisitions of new mineral reserves and production capacity, we may depend on the availability of credit to fund future capital expenditures and capital leases. Our ability to obtain financing or to access the capital markets for future equity or debt offerings may be limited by our financial condition at the time of any such financing or offering, the covenants contained in our existing credit facility, term loans or future debt agreements, adverse market conditions or other contingencies and uncertainties that are beyond our control. Our failure to obtain the funds necessary to maintain, develop, and increase our asset base, including our substantial railcar fleet, could adversely impact our growth and profitability.

Even if we are able to obtain financing or access the capital markets, incurring additional debt may significantly increase our interest expense and financial leverage, and our level of indebtedness could restrict our ability to fund future development and acquisition activities.

Our revolving credit facility and term loans contain financial covenants and substantial restrictions that may restrict our business and financing activities.

Our revolving credit facility and term loans contain, and any future financing agreements that we may enter into will likely contain operating and financial restrictions and covenants that may restrict our ability to finance future operations or capital needs or to engage in, expand, or pursue our business activities.

Our ability to comply with these restrictions and covenants is uncertain and will be affected by the levels of cash flow from our operations and events or circumstances beyond our control. If market or other economic conditions deteriorate, our ability to comply with these covenants may be impaired. If we violate any of the restrictions, covenants, ratios or tests in our debt agreements, a significant portion of our indebtedness may become immediately due and payable and our lenders' commitment to make further loans to us may terminate. We might not have, or be able to obtain, sufficient funds to make these accelerated payments. In addition, our obligations under our debt agreements are secured by substantially all of our assets, and if we are unable to repay our indebtedness under these agreements, the lenders could seek to foreclose on our assets.

We may have the need to incur substantial debt in the future to enable us to maintain or increase our production levels and to otherwise pursue our business plan. We may not be able to borrow funds successfully or, if we do, this debt may impair our ability to operate our business.

A significant amount of capital expenditures would be required to grow our production capacity. If prices for the products we produce were to decline for an extended period of time, if the costs of our acquisition and development opportunities were to increase substantially or if other events were to occur which reduced our sales or increased our costs, we may be required to borrow in the future to enable us to finance the expenditures necessary to replace the reserves we extract. The cost of the borrowings and our obligations to repay the borrowings could have important consequences to us, because:

- our ability to obtain additional financing, if necessary, for working capital, capital expenditures, acquisitions, or other purposes may be impaired or such financing may not be available on favorable terms, or at all;
- covenants contained in our existing and future credit and debt arrangements will require us to meet financial tests that may affect our flexibility in planning for, and reacting to, changes in our business, including possible acquisition opportunities;

- we will need a substantial portion of our cash flow to make principal and interest payments on our indebtedness, reducing the funds that would otherwise be available for operations and future business opportunities; and
- our debt level will make us more vulnerable than our less leveraged competitors to competitive pressures or a downturn in our business or the economy generally.

Our ability to service our indebtedness will depend on, among other things, our future financial and operating performance, which will be affected by prevailing economic conditions and financial, business, regulatory and other factors, some of which are beyond our control. If our operating results are not sufficient generate cash flows in order to service our current or future indebtedness, we will be forced to take actions such as reducing or delaying business activities, acquisitions, investments and/or capital expenditures; selling assets; restructuring or refinancing our indebtedness; or seeking additional equity capital or bankruptcy protection. We may not be able to effect any of these remedies on satisfactory terms or at all.

Inaccuracies in our estimates of mineral reserves could result in lower than expected sales and higher than expected costs.

We base our mineral reserve estimates on engineering, economic and geological data assembled and analyzed by our engineers and geologists, which are reviewed by outside firms. However, sand reserve estimates are necessarily imprecise and depend to some extent on statistical inferences drawn from available drilling data, which may prove unreliable. There are numerous uncertainties inherent in estimating quantities and qualities of mineral reserves and costs to mine recoverable reserves, including many factors beyond our control. Estimates of economically recoverable mineral reserves necessarily depend on a number of factors and assumptions, all of which may vary considerably from actual results, such as:

- geological and mining conditions and/or effects from prior mining that may not be fully identified by available data or that may differ from experience;
- assumptions concerning future prices of sand-based products, operating costs, mining technology improvements, development costs, and reclamation costs; and
- assumptions concerning future effects of regulation, including the issuance of required permits and taxes by governmental agencies.

Any inaccuracy in our estimates related to our mineral reserves could result in lower than expected sales and higher than expected costs.

Mine closures entail substantial costs, and if we close one or more of our mines sooner than anticipated, our results of operations may be adversely affected.

We base our assumptions regarding the life of our mines on detailed studies that we perform from time to time, but our studies and assumptions do not always prove to be accurate. If we close any of our mines sooner than expected, sales will decline unless we are able to increase production at any of our other mines, which may not be possible. The closure of an open pit mine also involves significant fixed closure costs, including accelerated employment legacy costs, severance-related obligations, reclamation and other environmental costs, and the costs of terminating long-term obligations, including energy contracts and equipment leases. We accrue for the costs of reclaiming open pits, stockpiles, tailings ponds, roads, and other mining support areas over the estimated mining life of our property. If we were to reduce the estimated life of any of our mines, the fixed mine closure costs would be applied to a shorter period of production, which would increase production costs per ton produced and could materially and adversely affect our results of operations and financial condition.

Applicable statutes and regulations require that mining property be reclaimed following a mine closure in accordance with specified standards and an approved reclamation plan. The plan addresses matters such as removal of facilities and equipment, regrading, prevention of erosion and other forms of water pollution, re-vegetation, and post-mining land use. We may be required to post a surety bond or other form of financial assurance equal to the cost of reclamation as set forth in the approved reclamation plan. The establishment of the final mine closure

reclamation liability is based on permit requirements and requires various estimates and assumptions, principally associated with reclamation costs and production levels. If our accruals for expected reclamation and other costs associated with mine closures for which we will be responsible were later determined to be insufficient, our business, results of operations, and financial condition would be adversely affected.

A shortage of skilled labor together with rising labor costs in the mining industry may further increase operating costs, which could adversely affect our results of operations.

Efficient mining using modern techniques and equipment requires skilled laborers, preferably with several years of experience and proficiency in multiple mining tasks, including processing of mined minerals. If the shortage of experienced labor continues or worsens or if we are unable to train the necessary number of skilled laborers, there could be an adverse impact on our labor productivity and costs and our ability to expand production.

Our production process consumes large amounts of natural gas and electricity. An increase in the price or a significant interruption in the supply of these or any other significant raw material costs could have a material adverse effect on our business, financial condition, or results of operations.

Natural gas is the primary fuel source used for drying sand in the production process and, as such, our profitability is impacted by the price and availability of natural gas we purchase from third parties. The price and supply of natural gas are unpredictable and can fluctuate significantly based on international, political and economic circumstances, as well as other events outside our control, such as changes in supply and demand due to weather conditions, other oil and gas producers, regional production patterns, and environmental concerns. Furthermore, utility companies could enforce natural gas curtailments which affect our operations. In addition, potential climate change regulations or carbon or emissions taxes could result in higher production costs for energy, which may be passed on to us in whole or in part. In the past, the price of natural gas has been extremely volatile, and we expect this volatility to continue. For example, during the year ended December 31, 2016, the monthly closing price of natural gas on the New York Mercantile Exchange ranged from a high of \$3.23 per million British Thermal Units (“BTUs”) to a low of \$1.71 per million BTUs.

Phenol is the primary component of the resins we buy, and our resin supply agreements contain market-based pricing provisions based on the cost of phenol. As a result, we are exposed to fluctuations in the prices for phenol.

A significant increase in the price of phenol or of energy that is not recovered through an increase in the price of our products or an extended interruption in the supply of natural gas or electricity to our production facilities could have a material adverse effect on our business, financial condition, and results of operations.

Our business may suffer if we lose, or are unable to attract and retain, key personnel.

We depend to a large extent on the services of our senior management team and other key personnel. Members of our senior management and other key employees have extensive experience and expertise in evaluating and analyzing industrial mineral properties, maximizing production from such properties, marketing industrial mineral production, and developing and executing financing and hedging strategies. Competition for management and key personnel is intense, and the pool of qualified candidates is limited. Further, we have not entered into employment agreements with any of our named executive officers. The loss of any of these individuals or the failure to attract additional personnel, as needed, could have a material adverse effect on our operations and could lead to higher labor costs or the use of less-qualified personnel. In addition, due to the broad base of shares and options owned by our current employee base, a significant amount of readily-accessible wealth and liquidity may be generated in favorable market conditions. If any of our executives or other key employees were to retire as a result of this potential wealth creation, join a competitor, or form a competing company, we could lose customers, suppliers, know-how, and key personnel. We do not maintain key-man life insurance with respect to any of our employees. Our success is dependent on our ability to continue to attract, employ, and retain highly-skilled personnel.

Our profitability could be negatively affected if we fail to maintain satisfactory labor relations.

As of December 31, 2016, various labor unions represented 18% of our domestic employees. If we are unable to renegotiate acceptable collective bargaining agreements with these labor unions in the future, we could experience, among other things, strikes, work stoppages, or other slowdowns by our workers and increased operating costs as a result of higher wages, health care costs, or benefits paid to our employees. An inability to maintain good relations with our workforce could cause a material adverse effect on our business, financial condition, and results of operations.

Silica-related health issues and litigation could have a material adverse effect on our business, reputation, or results of operations.

The inhalation of respirable crystalline silica can lead to the lung disease silicosis. There is disputed evidence of an association between respirable silica exposure and lung cancer as well as a possible association with other diseases, including immune system disorders such as scleroderma. These health risks have been, and may continue to be, a significant issue confronting the silica industry. Concerns over silicosis and other potential adverse health effects, as well as concerns regarding potential liability from the use of silica, may have the effect of discouraging our customers' use of our silica products. The actual or perceived health risks of mining, processing, and handling silica could materially and adversely affect silica producers, including us, through reduced use of silica products, the threat of product liability or employee lawsuits, increased scrutiny by federal, state and local regulatory authorities of us and our customers, or reduced financing sources available to the silica industry.

We and/or our predecessors have been named as a defendant, usually among many defendants, in numerous products liability lawsuits brought by or on behalf of current or former employees of our customers alleging damages caused by silica exposure. As of December 31, 2016, we were subject to approximately five active silica exposure claims. Almost all of the claims pending against us arise out of the alleged use of our silica products in foundries or as an abrasive blast media and have been filed in the states of Texas, Mississippi, and Illinois, although cases have been brought in many other jurisdictions over the years. In accordance with our insurance obligations, these claims are being defended by our subsidiaries' insurance carriers, subject to our payment of approximately 7% of the defense costs. If the litigants prevail and our insurance coverage or indemnities prove to be insufficient or unavailable, it could have a material adverse effect on our business, financial condition, and results of operation.

Failure to maintain effective quality control systems at our mining, processing and production facilities could have a material adverse effect on our business, financial condition, and operations.

The performance, quality and safety of our products are critical to the success of our business. These factors depend significantly on the effectiveness of our quality control systems, which, in turn, depends on a number of factors, including the design of our quality control systems, our quality-training program, and our ability to ensure that our employees adhere to the quality control policies and guidelines. Any significant failure or deterioration of our quality control systems could have a material adverse effect on our business, financial condition, results of operations, and reputation.

Seasonal factors may impact our ability to process sand and our customers' demand for our products.

Because raw sand cannot be wet-processed during extremely cold temperatures, frac sand is typically washed only eight months out of the year at our surface mines in Wisconsin and our Minnesota and Ohio operations. Our inability to mine and process frac sand year round in these surface mines results in a seasonal build-up of inventory as we excavate excess sand to build a stockpile that will feed our drying facilities during the winter months. Unexpected winter weather conditions may result in our having an insufficient sand stockpile to supply feedstock for our drying plants for the winter months and result in our being unable to satisfy customer requirements during these periods. As a result of these seasonal supply impacts, the cash flows of our North American operations can fluctuate if plant operations must remain shut down due to harsh winter weather conditions.

In addition to supply considerations, severe weather conditions may curtail our customers' drilling activities and impair rail shipment and transportation services and, as a result, our sales volumes to customers may similarly be adversely affected. Unexpected winter weather conditions may compound these seasonal impacts, and could result in a material adverse effect on our business, financial condition, and results of operation.

We may be subject to interruptions or failures in our information technology systems.

We rely on sophisticated information technology systems and infrastructure to support our business, including process control technology. Any of these systems may be susceptible to outages due to fire, floods, power loss, telecommunications failures, usage errors by employees, computer viruses, cyber-attacks or other security breaches, or similar events. The failure of any of our information technology systems may cause disruptions in our operations, which could adversely affect our sales and profitability.

Our international operations expose us to risks inherent in doing business abroad.

We conduct business in many parts of the world, including Argentina, Mexico, China, northern Europe, and the United Arab Emirates. Our ability to comply with the Foreign Corrupt Practices Act (“FCPA”) is dependent on the success of our ongoing compliance program, including our ability to continue to manage our agents and business partners, and supervise, train, and retain competent employees. We could be subject to sanctions and civil and criminal prosecution as well as fines and penalties in the event of a finding of a violation of the FCPA in the current investigation by us or any of our employees.

In December 2015, we were notified by the Securities and Exchange Commission (the “SEC”) that the Company was being investigated for possible violations of the FCPA and other securities laws relating to matters concerning certain of our international operations. We had previously retained outside legal counsel to investigate the subject matter of the SEC’s investigation, and at that time, determined that no further action was necessary. On November 3, 2016, we were notified by the SEC that the SEC staff completed this investigation and that the SEC does not intend to pursue enforcement action against the Company.

In addition, our international operations are subject to the various laws and regulations of those respective countries as well as various risks peculiar to each country, which may include, but are not limited to:

- global economic conditions;
- political actions and requirements of national governments including trade restrictions, embargoes, seizure, detention, nationalization, and expropriations of assets;
- interpretation of tax statutes and requirements of taxing authorities worldwide, routine examination by taxing authorities, and assessment of additional taxes, penalties, and/or interest;
- civil unrest;
- acts of terrorism;
- devaluations and other fluctuations in currency exchange rates;
- the impact of inflation; and
- difficulty in repatriating foreign currency received in excess of the local currency requirements.

Significant impairment losses related to goodwill, intangibles, and other assets could have a material adverse effect on our business, financial condition, and results of operation.

We assess the impairment of goodwill, intangibles, and other assets at least annually and also whenever events or changes in circumstances indicate that these assets may be impaired. In 2015, we recorded an impairment of goodwill in our Proppant Solutions segment of \$69.2 million. In 2016, we recorded impairment of assets in our Proppant Solutions segment of \$56.9 million as well as impairment of corporate assets of \$30.5 million. Any significant impairment of goodwill, intangibles, or other assets could have a material adverse effect on our business, financial condition, and results of operations.

A terrorist attack or armed conflict could harm our business.

Terrorist activities, anti-terrorist efforts and other armed conflicts involving the United States or other countries in which we operate could adversely affect the U.S. and global economies and could prevent us from meeting financial

and other obligations. We could experience loss of business, delays or defaults in payments from payors or disruptions of fuel supplies and markets if pipelines, production facilities, processing plants or refineries are direct targets or indirect casualties of an act of terror or war. Such activities could reduce the overall demand for oil and gas, which, in turn, could also reduce the demand for our products and services. Terrorist activities and the threat of potential terrorist activities and any resulting economic downturn could adversely affect our results of operations, impair our ability to raise capital or otherwise adversely impact our ability to realize certain business strategies.

Risks Related to Environmental, Mining, and Other Regulation

Federal, state and local legislative and regulatory initiatives relating to hydraulic fracturing and the potential for related litigation could result in increased costs and additional operating restrictions or delays for our customers, which could cause a decline in the demand for our sand-based proppants and negatively impact our business, financial condition, and results of operations.

Federal, state and local legislative and regulatory initiatives relating to hydraulic fracturing and the potential for related litigation could result in increased costs and additional operating restrictions or delays for our customers, which could cause a decline in the demand for our sand-based proppants and negatively impact our business, financial condition, and results of operations.

We supply proppants to oilfield service companies. Hydraulic fracturing is a widely used industry production technique that is used to recover natural gas and/or oil from dense subsurface rock formations. The process involves the injection of water, sand and chemicals, under pressure, into the formation to fracture the surrounding rock and stimulate production. The hydraulic fracturing process is typically regulated by state or local governmental authorities. However, the practice of hydraulic fracturing has become controversial in some areas and is undergoing increased scrutiny. Several federal agencies, regulatory authorities, and legislative entities are investigating the potential environmental impacts of hydraulic fracturing and whether additional regulation may be necessary. The U.S. Environmental Protection Agency (“EPA”) has asserted limited federal regulatory authority over hydraulic fracturing and has indicated it may seek to further expand its regulation of hydraulic fracturing. The Bureau of Land Management has proposed regulations applicable to hydraulic fracturing conducted on federal and Indian oil and gas leases. Congress has from time to time considered the adoption of legislation to provide for federal regulation of hydraulic fracturing. In addition, various state, local and foreign governments have implemented, or are considering, increased regulatory oversight of hydraulic fracturing through additional permitting requirements, operational restrictions, disclosure requirements and temporary or permanent bans on hydraulic fracturing in certain areas such as environmentally sensitive watersheds. For example, many states – including the major oil and gas producing states of North Dakota, Ohio, Oklahoma, Pennsylvania, Texas, and West Virginia – have imposed disclosure requirements on hydraulic fracturing well owners and operators. Some local governments have adopted and others may seek to adopt ordinances prohibiting or regulating the time, place and manner of drilling activities in general or hydraulic fracturing activities within their jurisdictions.

Although we do not conduct hydraulic fracturing, the adoption of new laws or regulations at the federal, state, local or foreign levels imposing reporting obligations on, or otherwise limiting or delaying, the hydraulic fracturing process could make it more difficult to complete oil and gas wells, increase our customers’ costs of compliance and doing business, and otherwise adversely affect the hydraulic fracturing services they perform, which could negatively impact demand for our sand-based proppants. In addition, heightened political, regulatory and public scrutiny of hydraulic fracturing practices, including nuisance lawsuits, could expose us or our customers to increased legal and regulatory proceedings, which could be time-consuming, costly or result in substantial legal liability or significant reputational harm. We could be directly affected by adverse litigation involving us, or indirectly affected if the cost of compliance limits the ability of our customers to operate. Such costs and scrutiny could directly or indirectly, through reduced demand for our sand-based proppants, have a material adverse effect on our business, financial condition, and results of operations.

We and our customers are subject to extensive environmental and health and safety regulations that impose, and will continue to impose, significant costs and liabilities. In addition, future regulations, or more stringent enforcement of existing regulations, could increase those costs and liabilities, which could adversely affect our results of operations.

We are subject to a variety of federal, state and local regulatory environmental requirements affecting the mining and mineral processing industry, including among others, those relating to employee health and safety, environmental permitting and licensing, air and water emissions, greenhouse gas emissions, water pollution, waste management, remediation of soil and groundwater contamination, land use, reclamation and restoration of properties, hazardous materials, and natural resources. Some environmental laws impose substantial penalties for noncompliance, and others, such as the federal Comprehensive Environmental Response, Compensation, and Liability Act (“CERCLA”), impose strict, retroactive and joint and several liability for the remediation of releases of hazardous substances. Liability under CERCLA, or similar state and local laws, may be imposed as a result of conduct that was lawful at the time it occurred or for the conduct of, or conditions caused by, prior operators or other third parties. Failure to properly handle, transport, store or dispose of hazardous materials or otherwise conduct our operations in compliance with environmental laws could expose us to liability for governmental penalties, cleanup costs and civil or criminal liability associated with releases of such materials into the environment, damages to property or natural resources and other damages, as well as potentially impair our ability to conduct our operations. In addition, future environmental laws and regulations could restrict our ability to expand our facilities or extract our mineral reserves or could require us to acquire costly equipment or to incur other significant expenses in connection with our business. Future events, including changes in any environmental requirements (or their interpretation or enforcement) and the costs associated with complying with such requirements, could have a material adverse effect on us.

Any failure by us to comply with applicable environmental laws and regulations may cause governmental authorities to take actions that could adversely impact our operations and financial condition, including:

- issuance of administrative, civil, and criminal penalties;
- denial, modification, or revocation of permits or other authorizations;
- imposition of injunctive obligations or other limitations on our operations, including cessation of operations; and
- requirements to perform site investigatory, remedial, or other corrective actions.

Moreover, environmental requirements, and the interpretation and enforcement thereof, change frequently and have tended to become more stringent over time. For example, greenhouse gas emission regulation is becoming more rigorous. We expect to be required to report annual greenhouse gas emissions from our operations to the EPA, and additional greenhouse gas emission related requirements at the supranational, federal, state, regional and local levels are in various stages of development. The U.S. Congress has considered, and may adopt in the future, various legislative proposals to address climate change, including a nationwide limit on greenhouse gas emissions. In addition, the EPA has issued regulations, including the “Tailoring Rule,” that subject greenhouse gas emissions from certain stationary sources to the Prevention of Significant Deterioration and Title V provisions of the federal Clean Air Act. Any such regulations could require us to modify existing permits or obtain new permits, implement additional pollution control technology, curtail operations or increase significantly our operating costs. Any regulation of greenhouse gas emissions, including, for example, through a cap-and trade system, technology mandate, emissions tax, reporting requirement or other program, could adversely affect our business, financial condition, reputation, operating performance, and product demand.

In addition to environmental regulation, we are subject to laws and regulations relating to human exposure to crystalline silica. Several federal and state regulatory authorities, including the U.S. Mining Safety and Health Administration and the U.S. Occupational Safety and Health Administration (“OSHA”), may continue to propose changes in their regulations regarding workplace exposure to crystalline silica, such as permissible exposure limits and required controls and personal protective equipment. For instance, in August 2013, OSHA proposed regulations that would reduce permissible exposure limits to 50 micrograms of respirable crystalline silica per cubic meter of air, averaged over an 8-hour day. Both the North American Industrial Mining Association and the National

Industrial Sand Association, both of which we are a member, track silicosis related issues and aim to work with government policymakers in crafting such regulations.

We may not be able to comply with any new laws and regulations that are adopted, and any new laws and regulations could have a material adverse effect on our operating results by requiring us to modify our operations or equipment or shut down some or all of our plants. Additionally, our customers may not be able to comply with any new laws and regulations, and any new laws and regulations could have a material adverse effect on our customers by requiring them to shut down old plants or to relocate plants to locations with less stringent regulations farther away from our facilities. We cannot at this time reasonably estimate our costs of compliance or the timing of any costs associated with any new laws and regulations, or any material adverse effect that any new standards will have on our customers and, consequently, on our operations.

We are subject to the Federal Mine Safety and Health Act of 1977, which imposes stringent health and safety standards on numerous aspects of our operations.

Our operations are subject to the Federal Mine Safety and Health Act of 1977, as amended by the Mine Improvement and New Emergency Response Act of 2006, which imposes stringent health and safety standards on numerous aspects of mineral extraction and processing operations, including the training of personnel, operating procedures, operating equipment, and other matters. Our failure to comply with such standards, or changes in such standards or the interpretation or enforcement thereof, could have a material adverse effect on our business, financial condition, and results of operation or otherwise impose significant restrictions on our ability to conduct mineral extraction and processing operations.

We and our customers are subject to other extensive regulations, including licensing, plant and wildlife protection, and reclamation regulation, that impose, and will continue to impose, significant costs and liabilities. In addition, future regulations, or more stringent enforcement of existing regulations, could increase those costs and liabilities, which could adversely affect our results of operations.

In addition to the regulatory matters described above, we and our customers are subject to extensive governmental regulation on matters such as permitting and licensing requirements, plant and wildlife protection, wetlands protection, reclamation and restoration of mining properties after mining is completed. Our future success depends, among other things, on the quantity of our mineral reserves and our ability to extract these reserves profitably, and our customers being able to operate their businesses as they currently do.

In order to obtain permits and renewals of permits in the future, we may be required to prepare and present data to governmental authorities pertaining to the impact that any proposed exploration or production activities, individually or in the aggregate, may have on the environment. Certain approval procedures may require preparation of archaeological surveys, endangered species studies and other studies to assess the environmental impact of new sites or the expansion of existing sites. Compliance with these regulatory requirements is expensive and significantly lengthens the time needed to develop a site. Finally, obtaining or renewing required permits is sometimes delayed or prevented due to community opposition, including nuisance lawsuits, and other factors beyond our control. The denial of a permit essential to our operations or the imposition of conditions with which it is not practicable or feasible to comply could impair or prevent our ability to develop or expand a site. New legal requirements, including those related to the protection of the environment, or the identification of certain species as “threatened” or “endangered” could be adopted that could materially adversely affect our mining operations (including our ability to extract mineral reserves), our cost structure or our customers’ ability to use our sand-based proppants. Such current or future regulations could have a material adverse effect on our business and we may not be able to obtain or renew permits in the future.

Our inability to acquire, maintain or renew financial assurances related to the reclamation and restoration of mining property could have a material adverse effect on our business, financial condition, and results of operations.

We are generally obligated to restore property in accordance with regulatory standards and our approved reclamation plan after it has been mined. We are required under federal, state and local laws to maintain financial assurances, such as surety bonds, to secure such obligations. The inability to acquire, maintain or renew such

assurances, as required by federal, state and local laws, could subject us to fines and penalties as well as the revocation of our operating permits. Such inability could result from a variety of factors, including:

- the lack of availability, higher expense, or unreasonable terms of such financial assurances;
- the ability of current and future financial assurance counterparties to increase required collateral; and
- the exercise by financial assurance counterparties of any rights to refuse to renew the financial assurance instruments.

Our inability to acquire, maintain or renew necessary financial assurances related to the reclamation and restoration of mining property could have a material adverse effect on our business, financial condition, and results of operations.

Risks Related to Ownership of Our Common Stock

The concentration of our capital stock ownership among our largest stockholders and their affiliates could limit your ability to influence corporate matters.

As of December 31, 2015, the AS Group indirectly owned approximately 44.1% of our outstanding common stock. In December 2016, the AS Group sold 23 million shares, or 22.6% of our common stock, in a secondary public offering. As a result of the transaction, the AS Group indirectly owns approximately 21.5% of our outstanding common stock as of December 31, 2016. Our management, directors, and other employees own a substantial portion of the remainder of our stock. As a result, the portion of our stock held by the investing public taken as a whole is approximately 48% as of March 2, 2017. Consequently, our management and employees will continue to have significant influence over all matters that require approval by our stockholders, including the election of directors and approval of significant corporate transactions. This concentration of ownership may limit your ability to influence corporate matters, and as a result, actions may be taken that you may not view as beneficial.

Furthermore, conflicts of interest could arise in the future between us, on the one hand, and American Securities and its affiliates, including its portfolio companies, on the other hand, concerning among other things, potential competitive business activities or business opportunities. American Securities is a private equity firm in the business of making investments in entities in a variety of industries. As a result, American Securities' existing and future portfolio companies which it controls may compete with us for investment or business opportunities. These conflicts of interest may not be resolved in our favor.

Our stock price could be volatile, and you may not be able to resell shares of your common stock at or above the price you paid.

The stock markets in general have experienced extreme volatility that has often been unrelated to the operating performance of particular companies. These broad market fluctuations may adversely affect the trading price of our common stock. Volatility in the market price of our common stock may prevent you from being able to sell your common stock at or above the price at which you purchased the stock. As a result, you may suffer a loss on your investment. Securities class action litigation has often been instituted against companies following periods of volatility in the overall market and in the market price of a company's securities. Such litigation, if instituted against us, could result in very substantial costs, divert our management's attention and resources and harm our business, operating results and financial condition.

In addition to the risks described in this section, the market price of our common stock may fluctuate significantly in response to a number of factors, most of which we cannot control, including:

- our operating and financial performance;
- quarterly variations in the rate of growth of our financial indicators, such as revenues, EBITDA, net income, and net income per share;
- actions taken by our competitors;
- the public reaction to our press releases, our other public announcements, and our filings with the SEC;

- strategic actions by our competitors;
- our failure to meet revenue or earnings estimates by research analysts or other investors;
- changes in revenue or earnings estimates, or changes in recommendations or withdrawal of research coverage, by equity research analysts;
- speculation in the press or investment community;
- the failure of research analysts to cover our common stock;
- sales of our common stock by us, the selling stockholders, or other stockholders, or the perception that such sales may occur;
- changes in accounting principles, policies, guidance, interpretations, or standards;
- additions or departures of key management personnel;
- actions by our stockholders;
- general market conditions, including fluctuations in commodity prices, sand-based proppants, or industrial and recreational sand-based products;
- domestic and international economic, legal and regulatory factors unrelated to our performance; and
- the realization of any risks described under this “Risk Factors” section.

Our amended and restated certificate of incorporation contains a provision renouncing our interest and expectancy in certain corporate opportunities.

Our amended and restated certificate of incorporation provides for the allocation of certain corporate opportunities between us and American Securities. Under these provisions, neither American Securities, its affiliates and subsidiaries, nor any of their officers, directors, agents, stockholders, members, or partners will have any duty to refrain from engaging, directly or indirectly, in the same business activities or similar business activities or lines of business in which we operate, other than opportunities related to hydraulic fracturing proppants. For instance, a director of our company who also serves as a director, officer or employee of American Securities or any of its subsidiaries or affiliates may pursue certain acquisitions or other opportunities that may be complementary to our business and, as a result, such acquisition or other opportunities may not be available to us. These potential conflicts of interest could have a material adverse effect on our business, financial condition and results of operations if attractive corporate opportunities are allocated by American Securities to itself or its subsidiaries or affiliates instead of to us.

Our amended and restated certificate of incorporation and amended and restated bylaws, as well as Delaware law, contain provisions that could discourage acquisition bids or merger proposals, which may adversely affect the market price of our common stock.

Our amended and restated certificate of incorporation authorizes our board of directors to issue preferred stock without stockholder approval. If our Board of Directors elects to issue preferred stock, it could be more difficult for a third party to acquire us. In addition, some provisions of our amended and restated certificate of incorporation and amended and restated bylaws could make it more difficult for a third party to acquire control of us, even if the change of control would be beneficial to our stockholders, including:

- a classified board of directors;
- limitations on the removal of directors;
- limitations on the ability of our stockholders to call special meetings;
- advance notice provisions for stockholder proposals and nominations for elections to the Board of Directors to be acted upon at meetings of stockholders;
- providing that the board of directors is expressly authorized to adopt, or to alter or repeal our bylaws;

- establishing advance notice and certain information requirements for nominations for election to our Board of Directors or for proposing matters that can be acted upon by stockholders at stockholder meetings;
- giving the Board of Directors the power to authorize the issuance of one or more classes or series of preferred stock having such designations, preferences, limitations and relative rights, including preferences over our common stock respecting dividends and distributions; and
- providing that the Court of Chancery of the State of Delaware shall be the sole and exclusive forum for certain stockholder actions involving the Company.

We currently do not intend to pay dividends on our common stock, and our debt agreements place certain restrictions on our ability to do so. Consequently, your only opportunity to achieve a return on your investment is if the price of our common stock appreciates.

We do not plan to declare dividends on shares of our common stock in the foreseeable future. Additionally, our existing revolving credit facility and our term loan both place certain restrictions on our ability to pay cash dividends. Consequently, unless we revise our dividend policy, your only opportunity to achieve a return on your investment in us will be if you sell your common stock at a price greater than you paid for it.

Future sales of our common stock by significant shareholders, or the perception in the public markets that these sales may occur, may depress our stock price.

Sales of substantial amounts of our common stock in the public market or the perception that these sales could occur, could adversely affect the price of our common stock and could impair our ability to raise capital through the sale of additional shares. As of March 2, 2017, we had 223,863,231 shares of common stock outstanding. A substantial number of these shares of common stock are freely tradable without restriction under the Securities Act. However, any shares of our common stock that may be held or acquired by our directors, executive officers and other affiliates, as that term is defined in the Securities Act, will be considered restricted or control shares under the Securities Act. Restricted or control shares may not be sold in the public market unless the sale is registered under the Securities Act or an exemption from registration is available. If a large number of these shares are sold on the open market, the price of our common stock could decline.

In the future, we may also issue securities if we need to raise capital in connection with a capital raise, acquisition, or to meet our debt obligations. The amount of shares of our common stock issued in connection with a capital raise or acquisition could constitute a material portion of our then outstanding shares of common stock.

If securities or industry analysts do not publish research or reports about our business, if they adversely change their recommendations regarding our common stock or if our operating results do not meet their expectations, our stock price could decline.

The trading market for our common stock is influenced by the research and reports that industry or securities analysts publish about us or our business. If one or more of these analysts cease coverage of our company or fail to publish reports on us regularly, we could lose visibility in the financial markets, which in turn could cause our stock price or trading volume to decline. Moreover, if one or more of the analysts who cover our company downgrades our common stock or if our operating results do not meet their expectations, our stock price could decline.

ITEM 1B. UNRESOLVED STAFF COMMENTS

None.

ITEM 2. PROPERTIES

Our Reserves

We control one of the largest bases of silica sand reserves in the United States. From our reserves, we are able to produce a large selection of high-purity silica sand, lake sand, coated sand, silica gravel, and other specialty sands.

According to the Securities and Exchange Commission (SEC) Industry Guide 7, reserves are defined as that part of a mineral deposit which could be economically and legally extracted or produced at the time of the reserve determination. Reserves are categorized into proven (measured) reserves and probable (indicated) reserves. In accordance with SEC Industry Guide 7, our reserves are categorized as proven or probable.

We estimate that the company has approximately 742.0 million tons of proven recoverable mineral reserves as of December 31, 2016. Additional probable but not proven reserves are considered immaterial. Mineral reserve estimated quantities and characteristics at our properties are overseen by our internal geologists and engineers and validated by third party consulting company, GZA GeoEnvironmental, Inc.

Summary of Reserves

The following table provides information on each of our sand mining facilities. Included is the location and area of the facility; the type, amount, and ownership status of its reserves and whether or not they meet API standards; and the primary end markets that it serves:

Active Mines	Acres Owned / Leased		API	Proven Reserves In-Situ (Thousand Tons)	Estimated Recovery Percentages	Primary End Markets
API White						
Wedron, IL	1,992 0	O L	API White	231,990	80%	proppant, glass, foundry, specialty products
Brewer, MO	353 0	O L	API White	32,541	80%	proppant, glass, foundry
Maiden Rock, WI	987 576 377	O OM L	API White	25,367	70%	proppant, glass, foundry
Menomonie, WI	2 366	O L	API White	23,917	75%	proppant, glass, foundry, specialty products
API Brown						
Voca, TX	1,962 0	O L	API Brown	189,707	50%	proppant, glass, foundry
Non-API						
Chardon, OH	623 0	O L	Non-API	16,777	80%	glass, turf, landscaping, construction, filler/extender, foundry, industrial, proppant, filtration
Beaver, OH	91 216	O L	Non-API	12,542	75%	turf, landscaping, industrial
Development Stage						
Katemcy, TX	848 0	O L	API Brown	113,278	50%	potential to serve proppant, glass, foundry
Diamond Bluff, WI	10 2,674	O L	API White	44,539	70%	potential to serve proppant, glass, foundry
Inactive						
Bay City, WI	40 322 1,131	O OM L	API White	19,251	70%	proppant, glass, foundry
Shakopee, MN	93 115	O L	API White	14,439	80%	proppant, glass, foundry, specialty products
Harrietta, MI	255 86	O L	Non-API	11,087	75%	foundry, construction
Grand Haven, MI	143 0	O L	Non-API	6,555	85%	N/A
Total				741,990		

Descriptions of Sand Facilities

As of December 31, 2016, we had seven active sand mining and processing operations facilities located in Illinois, Wisconsin, Missouri, Texas, and Ohio. We also have a processing facility located in Ontario, Canada that does not have any sand reserves but has an annual processing capacity of approximately 336,000 tons per year. We have inactive mines in Michigan, Minnesota, and Wisconsin and undeveloped mines in Texas and Wisconsin.

The mineral rights and access to mineral reserves for the majority of our facilities are secured through land that is owned. There are no underlying agreements and/or royalties associated with these properties. Where there are agreements and/or royalties associated related to our properties, we have provided more information in the facility

descriptions below. We are required to pay production royalties on a per ton basis pursuant to our mineral reserve leases.

API White

Wedron, Illinois . Our Wedron, Illinois facility is located in Wedron, LaSalle County, Illinois and consists of owned real property. The facility, which is approximately 6 miles northeast of Ottawa, Illinois, is accessible via County Highway 21 off of State Highway 71 and State Highway 23. The site utilizes natural gas and electricity to process sand. Mining methods include mechanical removal of glacial overburden followed by drilling, blasting, and hydraulic mining. Hydraulically mined sand is pumped to the wash plant to be hydraulically sized and sent to the dry plant where it is dried and screened.

Our Wedron facility and its predecessors have operated since 1890. The washing and drying operations at our Wedron facility were upgraded in 2012, 2013, and 2014 in conjunction with significant capacity and reserve base increases. Significant railyard expansions in 2014 and 2015 facilitated greater flexibility and provided for unit train capabilities. Processed sand is shipped from the facility via truck or rail on the Burlington Northern Santa Fe (“BNSF”) and CSX Railroads via the Illinois Railnet. Our Wedron facility utilizes approximately 50,000 linear feet of rail. A portion of the sand is transferred by conveyor or trucked from our Wedron facility and is coated at our Technisand Wedron and/or Troy Grove, Illinois resin-coating facilities. The total net book value of the Wedron facility’s real property as of December 31, 2016 was \$173.6 million.

The sand reserve mined from the open-pit mine at the Wedron facility is the St. Peter Sandstone formation. The Wedron facility produces high purity, round grain silica sand that meets the API requirements for proppant application. The Wedron facility production capacity, including the expansion project completed in April 2016, is approximately 9.0 million tons per year. The surface deposit at the Wedron facility is a high purity, round grain sand with a minimum silica content of 99%, which meets API requirements for proppant application. The controlling attributes are iron and grain size. Iron is concentrated near the surface, where orange iron staining is evident and also increases where the bottom contact becomes concentrated in iron pyrite. Maximum average full face iron content is 0.020%. The deposit tends to exhibit a coarser grain size distribution in the top half of the deposit.

Maiden Rock, Wisconsin . Our Maiden Rock, Wisconsin facility is located in Maiden Rock, Pierce County, Wisconsin and consists of owned and leased real property. The mineral reserves at the Maiden Rock facility are secured under mineral leases that, with the exercise of renewal options, expire between 2021 and 2046. The facility is within the Village and Town of Maiden Rock along State Highway 35. The Maiden Rock facility utilizes natural gas and electricity to process sand. This is an underground mine and mining methods include drilling and blasting. The reserves are located at a depth of 230 feet. The sand is removed from the face of the tunnels with a front end loader and deposited into a container where it is combined with water to form a slurry. The slurry is pumped to the surface wash plant to be hydraulically sized and sent to the dry plant where it is dried and screened.

The Maiden Rock facility and its predecessors have operated since the 1920s. We acquired a 50% equity interest in the facility from Wisconsin Industrial Sand in 1997, and acquired the remaining equity interest in 1999. The washing and drying operations at the Maiden Rock facility were upgraded in 2012 in conjunction with a significant capacity increase. Processed sand is shipped from the Maiden Rock facility via truck or rail on the BNSF Railroad. The Maiden Rock facility utilizes a new rail loadout facility and approximately 5,000 linear feet of rail constructed in 2012. This plant is unit train capable, utilizing the new unit train railyard at the Bay City facility. The total net book value of the Maiden Rock facility’s real property as of December 31, 2016 was \$36.0 million.

The sand reserve mined from the underground mine at the Maiden Rock facility is the Jordan Sandstone formation. The Maiden Rock facility produces high purity, round grain silica that meets API requirements for proppant application. The mining capacity is approximately 1.3 million tons per year.

The underground deposit at this facility is a high purity, round grain sand with a minimum silica content of 99%, which meets API requirements for proppant application. The controlling attributes are turbidity, acid solubility, and grain size. The deposit tends to exhibit a coarser grain size distribution near the top of the deposit. Grain size

distribution is maintained through control of mine horizon. Turbidity and acid solubility are controlled through the use of hydrosizers during wet processing.

Menomonie, Wisconsin. Our Menomonie, Wisconsin facility is located in Menomonie, Dunn County, Wisconsin and consists of owned and leased real property. The mineral reserves at our Menomonie facility are secured under mineral subleases that expire in 2044. We constructed the Menomonie facility in 2007 approximately two miles east of Menomonie and it is accessible via US Highway 12 / State Highway 16. The Menomonie facility utilizes natural gas and electricity to process sand. Mining methods include the mechanical removal of glacial overburden followed by drilling, blasting and mechanical mining. Mined sand is processed and shipped by truck or rail. A remote transload facility adjacent to the Union Pacific (UP) Railroad is located approximately one mile north of the site. The total net book value of the Menomonie facility's real property as of December 31, 2016 was \$8.6 million.

The sand reserve mined from the open-pit at the Menomonie facility is the Wonewoc Sandstone formation. The Menomonie facility produces high purity, round grain silica sand that meets the API requirements for proppant application. The mining capacity is approximately 750,000 tons per year. The surface deposit at the Menomonie facility is a high purity, round grain sand with a minimum silica content of 99% which meets API requirements for proppant application. The controlling attributes are turbidity, iron, and grain size. Maximum average full face iron content is 0.080%. The deposit tends to exhibit a coarser grain size distribution in top half of deposit. Turbidity is controlled through the use of attrition scrubbers during wet processing. Iron is controlled during processing through the use of magnetic separators.

Bay City, Wisconsin. Our Bay City, Wisconsin facility is located in Isabelle and Hartland Township, Pierce County, Wisconsin and consists of owned and leased real property. The mineral reserves at the Bay City facility are secured under mineral leases that, with the exercise of renewal terms, expire between 2045 and 2106. The Bay City facility was opened in 1919 and operated continuously until 1989. We acquired the mine through the acquisition of Wisconsin Specialty Sand and constructed the associated Hager City processing (drying) plant in 2007. This underground mine is approximately 1.5 miles northeast of Bay City on State Highway 35. The reserves are located at a depth of 230 feet. The mine utilizes electricity to process sand. Mining methods include drilling and blasting. As a result of the challenging conditions in the global oil and gas markets, these operations were idled in 2015. Although the processing facility was idled, the railyard remains active and provides unit train capabilities for the Maiden Rock facility.

Mined sand is shipped approximately five miles to the Hager City plant for further processing and eventual shipment via truck or rail on the BNSF Railroad. The Hager City plant, constructed by Wisconsin Industrial Sand Company, LLC in 2007, was expanded in 2013 and 2014 with the addition of a new rail yard containing approximately 19,000 linear feet of rail for assembling unit trains. The total net book value of the Bay City facility's real property as of December 31, 2016 was \$20.1 million.

The sand reserve mined from the underground mine at the Bay City facility is the Jordan Sandstone formation. The Bay City facility produces high purity, round grain silica that meets API requirements for proppant application. The mining capacity is approximately 780,000 tons per year. The underground deposit at the Bay City facility is a high purity, round grain sand with a minimum silica content of 99% which meets API requirements for proppant application. The controlling attributes are turbidity, acid solubility, and grain size. The deposit tends to exhibit a coarser grain size distribution near the top of the deposit. Grain size distributions are maintained through control of mine horizon. Turbidity and acid solubility are controlled through the use of hydrosizers during wet processing.

Shakopee, Minnesota. Our Shakopee, Minnesota facility is located in Shakopee, Scott County, Minnesota and consists of owned and leased real property. The mineral reserves at our mine are secured by fee ownership and a lease agreement that, with the exercise of renewal options, expires in 2030. The facility is approximately four miles south of Shakopee, Minnesota and is accessible via US Highway 169. The Shakopee facility utilizes natural gas and electricity to process sand. Mining methods include the mechanical removal of glacial overburden followed by drilling, blasting and mechanical mining. As a result of the challenging conditions in the global oil and gas markets, these operations were idled in 2015.

Mining occurred at the Shakopee facility for a short time in the 1980s by others until the property was reclaimed. The mine was permitted by Great Plains Sand in 2012 and acquired by us in 2013, at which time we changed the

name to Shakopee Sand LLC. We up graded the washing and drying operations at the facility following the acquisition. Processed sand is shipped from the Shakopee facility via truck or by rail on the UP. The total net book value of the Shakopee facility's real property as of December 31, 2016 was \$21.6 million .

The sand reserve mined from the open-pit mine at the Shakopee facility is the Jordan Sandstone formation. The deposit produces high purity, round grain silica sand which meets API requirements for proppant application. The mining capacity is approximately 718,000 tons per year. This surface deposit at the Shakopee facility is a high purity, round grain sand with a minimum silica content of 99% which meets API requirements for proppant application. The controlling attributes are turbidity and grain size. The deposit tends to exhibit a coarser grain size distribution in the top half of deposit. Turbidity is controlled through the use of hydrosizers and attrition scrubbers during wet processing. Fine and coarse areas are blended to meet the grain size average.

Brewer, Missouri . Our Brewer, Missouri mine is located in Brewer, Perry County, Missouri and consists of owned real property. The facility, approximately one-half mile northwest of Brewer, Missouri, is accessible via State Highway M. We acquired the inactive mine in August 2014. The operation was reactivated and began production in December 2014 but was idled in 2015 due to the challenging conditions in the global oil and gas markets. In January 2017, the decision was made to return Brewer to full production due to an increase in demand for proppants. The mine is in the process of reopening and production resumed in the first quarter of 2017. Mining methods include the mechanical removal of overburden followed by drilling, blasting and mechanical mining. The total net book value of the facility's real property as of December 31, 2016 was \$12.8 million.

The sand reserve mined from the open-pit mine at the Brewer facility is the St. Peter Sandstone formation. The deposit produces high purity, round grain silica that meets API requirements for proppant application. The mining capacity is approximately 1.0 million tons per year. The surface deposit at the Brewer facility is a high purity, round grain sand with a minimum silica content of 99% which meets API requirements for proppant application. The controlling attributes are turbidity and grain size. The deposit tends to exhibit a coarser grain size distribution in top half of deposit. Turbidity is controlled through the use of hydrosizers and attrition scrubbers during wet processing.

API Brown

Voca, Texas . Our Voca, Texas facility is located in Voca, Mason and McCulloch Counties, Texas and consists of owned real property. The facility, which is approximately 1.5 miles southeast of Voca, is accessible via County Highway 1851, south of State Highway 71. Sand mining and processing operations were developed at the facility during 2008, with the construction of existing plants completed in 2012. We acquired the operations in 2013. The Voca facility utilizes propane and electricity to process sand. Mining methods include the mechanical removal of thin overburden followed by drilling, blasting, and mechanical mining. The total net book value of the Voca facility's real property as of December 31, 2016 was \$33.4 million.

The sand reserve mined at our Voca property is the Hickory Sandstone Member of the Riley formation. The Voca facility produces high purity, round grain silica which meets API requirements for proppant application. The mining capacity is approximately 1.5 million tons per year. The surface deposit at the Voca facility is a high purity, round grain sand with a minimum silica content of 98% which meets API requirements for proppant application. The controlling attributes are turbidity and grain size. Turbidity is controlled through the use of hydrosizers and attrition scrubbers during wet processing. Grain size is controlled through the use of hydrosizers and wet screening.

Non-API

Chardon, Ohio . Our Chardon, Ohio facility is located in Geauga County, Ohio and consists of owned real property. The facility, which is approximately two miles south of Chardon, is accessible via State Route 44. The site utilizes natural gas and electricity to process sand. Mining methods include the mechanical removal of glacial overburden followed by drilling, blasting and mechanical mining.

The mine was opened in 1938 and acquired by Best Sand in 1978. We acquired the mine as a result of the merger of Wedron Silica and Best Sand in 1986. Upgrades were made to the wash plant in 2009, the fluid bed dryer in 2012

and the rotary dryer circuit in 2012. The reserve base was increased by 950,000 tons in 2014 and 1.2 million tons in 2015. The total net book value of the Chardon facility's real property as of December 31, 2016 was \$4.9 million.

The sand reserve mined from the open-pit mine at the Chardon facility is the Sharon Conglomerate formation. This plant produces high purity, sub-angular grain silica sand and gravel used for industrial and recreational markets. The mining capacity is approximately 1.1 million tons per year. The surface deposit at the Chardon facility is a high purity, sub-round grain silica sand/gravel. The deposit has a minimum silica content of 99% ideal for glass and foundry applications. The contributing attributes are iron and grain size distribution. The mine's iron averages 0.084%.

Beaver, Ohio. Our Beaver, Ohio facility, acquired in 1994 from Schrader Sand and Gravel, is located in Jackson Township, Pike County, Ohio and consists of owned and leased real property. The mineral reserves at this facility are secured under mineral leases that, with the exercise of renewal options, expire in 2024. The facility, which is approximately six miles northeast of Beaver, Ohio, is accessible via County Road 521. The facility utilizes electricity to process sand. Mining methods include the mechanical removal of glacial overburden followed by drilling, blasting and mechanical mining. The total net book value of the Beaver facility's real property as of December 31, 2016 was \$0.7 million.

The sand reserve mined from the open-pit mine at the Beaver facility is the Sharon Conglomerate formation. The Beaver facility produces high purity, sub-angular grain silica sand and gravel. The mining capacity is approximately 425,000 tons per year. The surface deposit at the Beaver facility is a high purity, sub-angular grain silica sand/gravel. The deposit has a minimum silica content of 99% and is ideal for turf/landscaping and industrial applications. The controlling attribute is cleanliness. Cleanliness is controlled through wet processing.

Harrietta, Michigan. Our Harrietta, Michigan facility is located in Slagle Township, Wexford County, Michigan and consists of owned and leased real property. The facility, which is approximately three miles northeast of Harrietta, Michigan, is accessible via West 28th Road and State Highway 37. As a result of challenging conditions in end markets, this facility was closed in 2015.

Development

Katemcy, Texas. Our Katemcy, Texas reserves are located in Katemcy, Mason County, Texas and consist of owned real property. The mine property was purchased in September 2013 and is accessed via County Road 1222 and State Highway 87. The mine has not yet been developed and the property is currently used as agricultural land. This deposit is capable of producing high purity, round grain silica sand that meets API requirements for proppant application. Plans to develop the mine property are under review. The sand reserve at this proposed open-pit mine is the Hickory Sandstone Member of the Riley formation.

The surface reserve is a high purity, round grain sand with a minimum silica content of 98% which meets API requirements for proppant application. The controlling attributes will be turbidity and grain size.

Diamond Bluff, Wisconsin. Our Diamond Bluff, Wisconsin reserves are located in Diamond Bluff and Oak Grove Townships, Pierce County, Wisconsin and consist of owned and leased real property. The mineral reserves are secured under mineral leases that expire between 2063 and 2064. The mine access property was purchased in 2014 and is undeveloped. The mine was permitted by the Diamond Bluff Township in 2012 and by the Oak Grove Township in 2014. The facility, which is located approximately one mile northwest of the unincorporated community of Diamond Bluff, is accessible off of 1005th Street via State Highway 35. The proposed underground mine site will be at a depth of 230 feet and will utilize electricity to process sand through drilling, blasting, mechanical, and hydraulic mining methods. Mined sand will be shipped approximately eight miles to the Hager City plant for further processing and eventual shipment via truck or rail on the BNSF Railroad. The total net book value of the facility's real property as of December 31, 2016 is included in the net book value of the Bay City facility.

The sand reserve at this proposed underground mine is the Jordan Sandstone formation. This deposit is capable of producing high purity, round grain silica sand which meets API requirements for proppant application. This

underground reserve is a high purity, round grain sand with a minimum silica content of 99% which meets API requirements for proppant application. The controlling attributes are turbidity, acid solubility, and grain size. The deposit tends to exhibit a coarser grain size distribution near the top of the deposit.

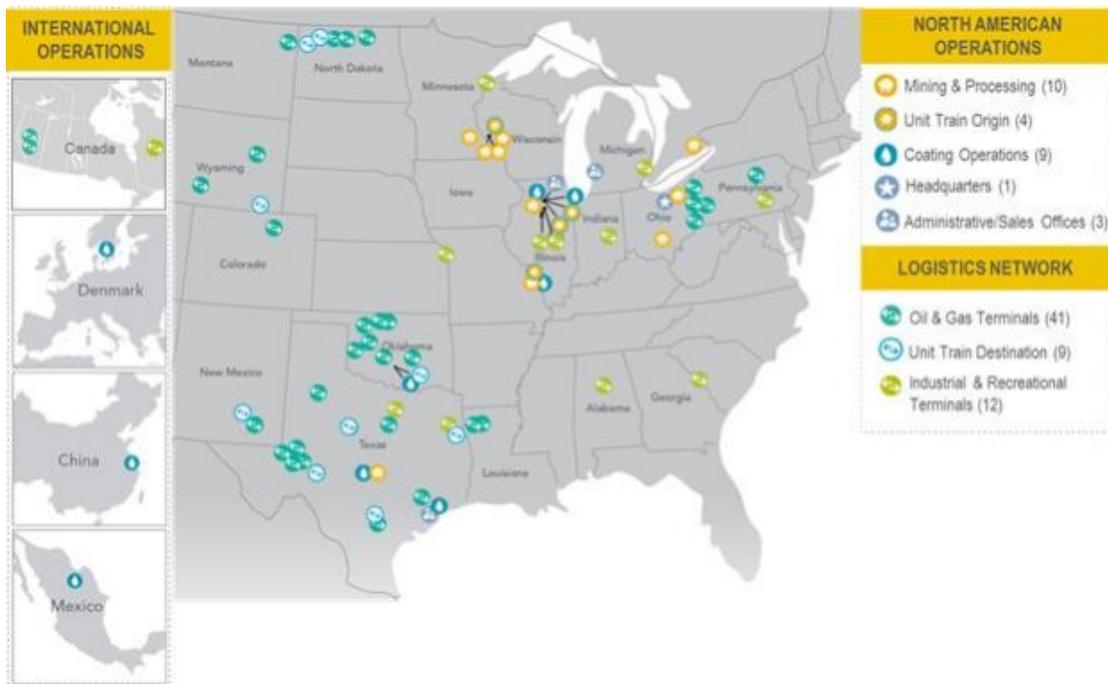
Arcadia, Wisconsin . These reserves were sold in 2016 and are no longer being considered for development.

Coating, Resin Manufacturing, Specialty Blending, and Research and Development Facilities

We have five strategically located coating facilities in North America near our mining operations in Wisconsin, Illinois, and Texas. These facilities are on a combination of leased as well as owned land and buildings. As of March 2017, four of the domestic facilities were inactive or closed. We also have three international coating facilities located in Mexico, Denmark, and China.

We have four specialty blending facilities, located in Ohio, Illinois, and Texas. These operations make custom blends of aggregates for use in industrial and commercial flooring, polymer cements, grouts and performance mortars. An additional specialty facility, Mineral Visions, located in Illinois, produces specialty colored quartz. We have a manufacturing facility in Michigan, Alpha Resins, which produces resins primarily for our own use. These properties are all on owned land and buildings. We have research and development facilities also located in Texas and Illinois. These facilities are leased.

The following map reflects the location of our mining and processing, resin manufacturing, coating, specialty blending and R&D facilities and our administrative offices:



Product Delivery

We have established an oil and gas logistics network that we believe is highly responsive to our customers' needs. Our terminal network includes 41 active oil and gas terminals and 12 industrial and recreational terminals. These terminals are a combination of facilities that we own or lease, as well as properties that are owned and operated by

third parties. They generally consist of rail and transload operations, plus in some cases additional storage and handling facilities.

ITEM 3. LEGAL PROCEEDINGS

We are subject to various legal proceedings, claims and governmental inspections, audits, or investigations arising out of our business which cover matters such as general commercial, governmental regulations, FCPA requirements, antitrust and trade regulations, product liability, environmental, intellectual property, employment, and other actions. Although the outcomes of these claims cannot be predicted with certainty, in the opinion of management, the ultimate resolution of these matters will not have a material adverse effect on our financial position or results of operations.

Regulation and Legislation

Mining and Workplace Safety

Federal Regulation

The U.S. Mine Safety and Health Administration (“MSHA”) is the primary regulatory organization governing the commercial silica industry. Accordingly, MSHA regulates quarries, surface mines, underground mines, and the industrial mineral processing facilities associated with quarries and mines. The mission of MSHA is to administer the provisions of the Federal Mine Safety and Health Act of 1977 and to enforce compliance with mandatory safety and health standards. MSHA works closely with the Industrial Minerals Association, a trade association, in pursuing this mission. As part of MSHA’s oversight, representatives perform at least two unannounced inspections annually for each above-ground facility. To date these inspections have not resulted in any citations for material violations of MSHA standards.

We also are subject to the requirements of the U.S. Occupational Safety and Health Act (“OSHA”) and comparable state statutes that regulate the protection of the health and safety of workers. In addition, the OSHA Hazard Communication Standard requires that information be maintained about hazardous materials used or produced in operations and that this information be provided to employees, state and local government authorities and the public. OSHA regulates users of commercial silica and provides detailed regulations requiring employers to protect employees from overexposure to silica through the enforcement of permissible exposure limits.

Internal Controls

We adhere to a strict occupational health program aimed at controlling exposure to silica dust, which includes dust sampling, a respiratory protection program, medical surveillance, training, and other components. Our safety program is designed to ensure compliance with the standards of our Occupational Health and Safety Manual and MSHA regulations. For both health and safety issues, extensive training is provided to employees. We have safety committees at our plants made up of salaried and hourly employees. We perform annual internal health and safety audits and conduct semi-annual crisis management drills to test our plants’ abilities to respond to various situations. Health and safety programs are administered by our corporate health and safety department with the assistance of plant Environmental, Health and Safety Coordinators.

Environmental Matters

We and the proppant industry are subject to extensive governmental regulation on, among other things, matters such as permitting and licensing requirements, plant and wildlife protection, hazardous materials, air and water emissions, and environmental contamination and reclamation. A variety of federal, state, and local agencies implement and enforce these regulations.

Federal Regulation

At the federal level, we may be required to obtain permits under Section 404 of the Clean Water Act from the U.S. Army Corps of Engineers for the discharge of dredged or fill material into waters of the United States, including

wetlands and streams, in connection with our operations. We also may be required to obtain permits under Section 402 of the Clean Water Act from the EPA (or the relevant state environmental agency in states where the permit program has been delegated to the state) for discharges of pollutants into waters of the United States, including discharges of wastewater or storm water runoff associated with construction activities. Failure to obtain these required permits or to comply with their terms could subject us to administrative, civil and criminal penalties as well as injunctive relief.

The U.S. Clean Air Act and comparable state laws regulate emissions of various air pollutants through air emissions permitting programs and the imposition of other requirements, such as monitoring and reporting requirements. These regulatory programs may require us to install expensive emissions abatement equipment, modify our operational practices and obtain permits for our existing operations, and before commencing construction on a new or modified source of air emissions, such laws may require us to obtain pre-approval for the construction or modification of certain projects or facilities extended to produce or significantly increase air emissions. In addition, air permits are required for our processing and terminal operations, and our frac sand mining operations that result in the emission of regulated air contaminants. Obtaining air emissions permits has the potential to delay the development or continued performance of our operations. As a result, we may be required to incur increased capital and operating costs because of these regulations. We could be subject to administrative, civil, and criminal penalties as well as injunctive relief for noncompliance with air permits or other requirements of the U.S. Clean Air Act and comparable state laws and regulations.

Methane, a primary component of natural gas, and carbon dioxide, a byproduct of the burning of natural gas, are examples of greenhouse gases (“GHGs”). In recent years, the U.S. Congress has considered legislation to reduce emissions of GHGs. It presently appears unlikely that comprehensive climate legislation will be passed by either house of Congress in the near future, although energy legislation and other regulatory initiatives may be proposed that may be relevant to GHG emissions issues.

Independent of Congress, the EPA has adopted regulations controlling GHG emissions under its existing authority under the CAA. In 2009, the EPA officially published its findings that emissions of carbon dioxide, methane and other GHGs present an endangerment to human health and the environment because emissions of such gases are, according to the EPA, contributing to warming of the earth’s atmosphere and other climatic changes. These findings by the EPA allow the agency to proceed with the adoption and implementation of regulations that would restrict emissions of GHGs under existing provisions of the CAA. In 2010, the EPA published a final rule expanding its existing GHG emissions reporting rule for certain petroleum and natural gas facilities that emit 25,000 metric tons or more of carbon dioxide equivalent per year. We are subject to annual GHG reporting obligations for our operations in Wedron, Illinois.

Although it is not currently possible to predict how any proposed or future GHG legislation or regulation by Congress, the EPA, the states, or multi-state regions will impact our business, any legislation or regulation of GHG emissions that may be imposed in areas in which we conduct business could result in increased compliance costs or additional operating restrictions or reduced demand for our services, and could have a material adverse effect on our business, financial condition, and results of operations.

As part of our operations, we utilize or store petroleum products and other substances such as diesel fuel, lubricating oils, and hydraulic fluid. We are subject to regulatory programs pertaining to the storage, use, transportation, and disposal of these substances, including Spill Prevention, Control and Countermeasure planning requirements. Spills or releases may occur in the course of our operations, and we could incur substantial costs and liabilities as a result of such spills or releases, including those relating to claims for damage or injury to property and persons. Additionally, some of our operations are located on properties that historically have been used in ways that resulted in the release of contaminants, including hazardous substances, into the environment, and we could be held liable for the remediation of such historical contamination. The Comprehensive Environmental Response, Compensation, and Liability Act (“CERCLA,” also known as the Superfund law) and comparable state laws impose joint and several liability, without regard to fault or legality of conduct, on classes of persons who are considered to be responsible for the release of hazardous substances into the environment. These persons include the owner or operator of the site where the release occurred and anyone who disposed or arranged for the disposal of a hazardous substance released at the site. Under CERCLA, such persons may be subject to liability for the costs of cleaning up the hazardous substances, for damages to natural resources, and for the costs of certain health studies. In addition, it is not

uncommon for neighboring landowners and other third parties to file claims for personal injury and property damage allegedly caused by the hazardous substances released into the environment.

In the course of our operations, we generate industrial solid wastes that may be regulated as hazardous wastes. The Resource Conservation and Recovery Act (“RCRA”) and comparable state statutes regulate the generation, transportation, treatment, storage, disposal, and cleanup of hazardous and non-hazardous wastes. The EPA and the individual states, to which the EPA has delegated portions of the RCRA program for local implementation, administer the RCRA program.

In September 2013, the EPA issued RCRA consent orders to several companies, including us, in connection with historic contamination of residential drinking water wells near our Wedron, Illinois facility. The EPA identified benzene and other volatile organic compounds in some drinking water wells, some (including benzene) in excess of established standards. The consent orders required the companies to analyze conditions at their sites to determine whether operations at their sites are potential sources of groundwater contamination. We completed the study for our site, and our consultant submitted a site conditions report to the EPA in August 2014, which report concluded that our operations at the site are not a source of groundwater impacts in the Wedron community. The report recommended that no further work should be required under the consent order. In March 2015, the EPA issued a letter to us stating that we have completed all work required under the consent order to the EPA’s satisfaction, and our obligations under the consent order have now been satisfied. We have also performed environmental investigation and remediation activities under oversight of the Illinois Environmental Protection Agency (IEPA) at a removed underground storage tank (UST) system at the Wedron facility south of residential areas of the community. The investigation report approved by the IEPA concluded that the petroleum constituents reported in the groundwater in the Wedron community are not related to the former UST system. We have performed limited soil removal at the location of the former UST system pursuant to a Corrective Action Plan approved by the IEPA. The IEPA has approved the closure of this site, which is documented through a No Further Remediation Letter issued by the Agency. The No Further Remediation Letter has been recorded with the local County Recorder of Deeds and includes deed restrictions which will limit this portion of the Wedron property to industrial use in perpetuity.

Although we do not directly engage in hydraulic fracturing activities, we supply sand-based proppants to hydraulic fracturing operators in the oil and natural gas industry. Hydraulic fracturing involves the injection of water, sand, and chemicals, under pressure, into the formation to fracture the surrounding rock and stimulate production. The hydraulic fracturing process is typically regulated by state or local governmental authorities. However, the practice of hydraulic fracturing has become controversial in some areas and is undergoing increased scrutiny. Several federal agencies and regulatory authorities are investigating the potential environmental impacts of hydraulic fracturing and whether additional regulation may be necessary. The EPA has asserted limited federal regulatory authority over hydraulic fracturing and has indicated it may seek to further expand its regulation of hydraulic fracturing. The Bureau of Land Management has proposed regulations applicable to hydraulic fracturing conducted on federal and Indian oil and gas leases. Congress has from time to time considered the adoption of legislation to provide for federal regulation of hydraulic fracturing. In addition, various state, local, and foreign governments have implemented, or are considering, increased regulatory oversight of hydraulic fracturing through additional permitting requirements, operational restrictions, disclosure requirements, and temporary or permanent bans on hydraulic fracturing in certain areas such as environmentally sensitive watersheds. Numerous states have imposed disclosure requirements on hydraulic fracturing well owners and operators. Some local governments have adopted and others may seek to adopt ordinances prohibiting or regulating the time, place, and manner of drilling activities in general or hydraulic fracturing activities within their jurisdictions.

The adoption of new laws, regulations, or enforcement policies at the federal, state, local, or foreign levels imposing reporting obligations on, or otherwise limiting or delaying, the hydraulic fracturing process could make it more difficult to complete oil and natural gas wells, increase our customers’ costs of compliance and doing business, and otherwise adversely affect the hydraulic fracturing services they perform, which could negatively impact demand for our sand-based proppants.

Our operations may also be subject to broad environmental review under the National Environmental Policy Act (“NEPA”). NEPA requires federal agencies to evaluate the environmental impact of all “major federal actions” significantly affecting the quality of the human environment. The granting of a federal permit for a major development project, such as a mining operation, may be considered a “major federal action” that requires review

under NEPA. Therefore, our projects may require review and evaluation under NEPA. As part of this evaluation, the federal agency considers a broad array of environmental impacts, including, among other things, impacts on air quality, water quality, wildlife (including threatened and endangered species), historical and archeological resources, geology, socioeconomics and aesthetics. NEPA also requires the consideration of alternatives to the project. The NEPA review process, especially the preparation of a full environmental impact statement, can be time consuming and expensive. The purpose of the NEPA review process is to inform federal agencies' decision-making on whether federal approval should be granted for a project and to provide the public with an opportunity to comment on the environmental impacts of a proposed project. Though NEPA requires only that an environmental evaluation be conducted and does not mandate a result, a federal agency could decide to deny a permit, or impose certain conditions on its approval, based on its environmental review under NEPA, or a third party may challenge the adequacy of a NEPA review and thereby delay the issuance of a federal permit or approval.

Federal agencies granting permits for our operations also must consider impacts to endangered and threatened species and their habitat under the Endangered Species Act. We also must comply with and are subject to liability under the Endangered Species Act, which prohibits and imposes stringent penalties for the harming of endangered or threatened species and their habitat. Some of our operations are conducted in areas where protected species or their habitats are known to exist. In these areas, we may be obligated to develop and implement plans to avoid potential adverse effects to protected species and their habitats, and we may be prohibited from conducting operations in certain locations or during certain times, such as breeding and nesting seasons, when our operations could have an adverse effect on the species. Federal agencies also must consider a project's impacts on historic or archeological resources under the National Historic Preservation Act, and we may be required to conduct archeological surveys of project sites and to avoid or preserve historical areas or artifacts.

State and Local Regulation

Because our operations are located in numerous states, we are also subject to a variety of different state and local environmental review and permitting requirements. Some states in which our projects are located or are being developed have state laws similar to NEPA; thus our development of new sites or the expansion of existing sites may be subject to comprehensive state environmental reviews even if it is not subject to NEPA. In some cases, the state environmental review may be more stringent than the federal review. Our operations may require state law-based permits in addition to federal or local permits, requiring state agencies to consider a range of issues, many the same as federal agencies, including, among other things, a project's impact on wildlife and their habitats, historic and archaeological sites, aesthetics, agricultural operations, and scenic areas. Some states also have specific permitting and review processes for commercial silica mining operations, and states may impose different or additional monitoring or mitigation requirements than federal agencies. The development of new sites and our existing operations also are subject to a variety of local environmental and regulatory requirements, including land use, zoning, building, and transportation requirements.

Some local communities have expressed concern regarding silica sand mining operations. These concerns have generally included exposure to ambient silica sand dust, truck traffic, water usage, and blasting. In response, certain state and local communities have developed or are in the process of developing regulations or zoning restrictions intended to minimize dust from getting airborne, control the flow of truck traffic, significantly curtail the amount of practicable area for mining activities, require compensation to local residents for potential impacts of mining activities and, in some cases, ban issuance of new permits for mining activities. To date, we have not experienced any material impact to our existing mining operations or planned capacity expansions as a result of these types of concerns. We are not aware of any proposals for significant increased scrutiny on the part of state or local regulators in the jurisdictions in which we operate or community concerns with respect to our operations that would reasonably be expected to have a material adverse effect on our business, financial condition, or results of operations going forward.

Planned expansion of our mining and production capacity or construction and operation of related facilities in new communities could be more significantly impacted by increased regulatory activity. Difficulty or delays in obtaining or inability to obtain new mining permits or increased costs of compliance with future state and local regulatory requirements could have a material negative impact on our ability to grow our business. In an effort to minimize these risks, we continue to be engaged with local communities in order to grow and maintain strong relationships with residents and regulators.

Costs of Compliance

We may incur significant costs and liabilities as a result of environmental, health, and safety requirements applicable to our activities. Failure to comply with environmental laws and regulations may result in the assessment of administrative, civil and criminal penalties, imposition of investigatory, cleanup and site restoration costs and liens, the denial or revocation of permits or other authorizations, and the issuance of injunctions to limit or cease operations. Compliance with these laws and regulations may also increase the cost of the development, construction and operation of our projects and may prevent or delay the commencement or continuance of a given project. In addition, claims for damages to persons or property may result from environmental and other impacts of our activities. In addition, the clear trend in environmental regulation is to place more restrictions on activities that may affect the environment, and thus, any changes in, or more stringent enforcement of, these laws and regulations that result in more stringent and costly pollution control equipment, waste handling, storage, transport, disposal, or remediation requirements could have a material adverse effect on our operations and financial position.

The process for performing environmental impact studies and reviews for federal, state, and local permits for our operations involves a significant investment of time and monetary resources. We cannot control the permit approval process. We cannot predict whether all permits required for a given project will be granted or whether such permits will be the subject of significant opposition. The denial of a permit essential to a project or the imposition of conditions with which it is not practicable or feasible to comply could impair or prevent our ability to develop a project. Significant opposition by neighboring property owners, members of the public or other third parties, as well as any delay in the environmental review and permitting process, could impair or delay our ability to develop or expand a project. Additionally, the passage of more stringent environmental laws could impair our ability to develop new operations and have an adverse effect on our financial condition and results of operations.

ITEM 4. MINE SAFETY DISCLOSURES

The Fairmount Santrol Safety & Health Management System (“SHMS”) establishes the system for promoting a safety culture that encourages incident prevention and continually strives to improve its safety and health performance.

The SHMS includes as its domain all established safety and health specific programs and initiatives for the Company’s compliance with all local, state and federal legislation, standards, and regulations and SHMS Policy as they apply to a safe and healthy employee, stakeholder and work environment.

The SHMS has the ultimate goal for the identification, elimination or control of all risks to personnel, stakeholders, and facilities, that can be controlled and directly managed, and those it does not control or directly manage, but can expect to have an influence upon.

The operation of our U.S. based mines is subject to regulation by MSHA under the Federal Mine Safety and Health Act of 1977 (the “Mine Act”). MSHA inspects our mines on a regular basis and issues various citations and orders when it believes a violation has occurred under the Mine Act. Following passage of The Mine Improvement and New Emergency Response Act of 2006, MSHA significantly increased the numbers of citations and orders charged against mining operations. The dollar penalties assessed for citations issued has also increased in recent years.

Fairmount Santrol is required to report certain 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 Regulation S-K, and that required information is included in *Exhibit 95.1* and is incorporated by reference into this Annual Report.

PART II

ITEM 5. MARKET FOR REGISTRANT'S COMMON EQUITY, RELATED STOCKHOLDER MATTERS, AND ISSUER PURCHASES OF EQUITY SECURITIES

Market Information

Shares of our common stock, traded under the symbol "FMSA," have been publicly traded since October 3, 2014, when our common stock was listed and began trading on the New York Stock Exchange ("NYSE"). Prior to that date, there was no public market for our common stock.

The following table sets forth, for the reporting period indicated, the high and low market prices per share for our common stock, as reported on the NYSE composite tape:

	Sales Price	
	High	Low
<i>Fiscal 2014</i>		
October 3, 2014 – December 31, 2014	\$ 16.98	\$ 6.43
<i>Fiscal 2015</i>		
January 1, 2015 – March 31, 2015	\$ 7.48	\$ 4.91
April 1, 2015 – June 30, 2015	9.49	7.14
July 1, 2015 – September 30, 2015	8.25	2.60
October 1, 2015 – December 31, 2015	3.45	2.21
<i>Fiscal 2016</i>		
January 1, 2016 – March 31, 2016	\$ 3.35	\$ 1.00
April 1, 2016 – June 30, 2016	8.17	2.39
July 1, 2016 – September 30, 2016	8.83	5.88
October 1, 2016 – December 31, 2016	12.06	7.37

Holdings of Record

On March 2, 2017, there were 223,863,231 shares of our common stock outstanding, which were held by approximately 45 stockholders of record. Because many of our shares of common stock are held by brokers and other institutions on behalf of stockholders, we are unable to estimate the total number of stockholders represented by these record holders.

Dividends

There have been no cash dividends declared for the most recent two fiscal periods. We currently have no plans to pay cash dividends in the foreseeable future.

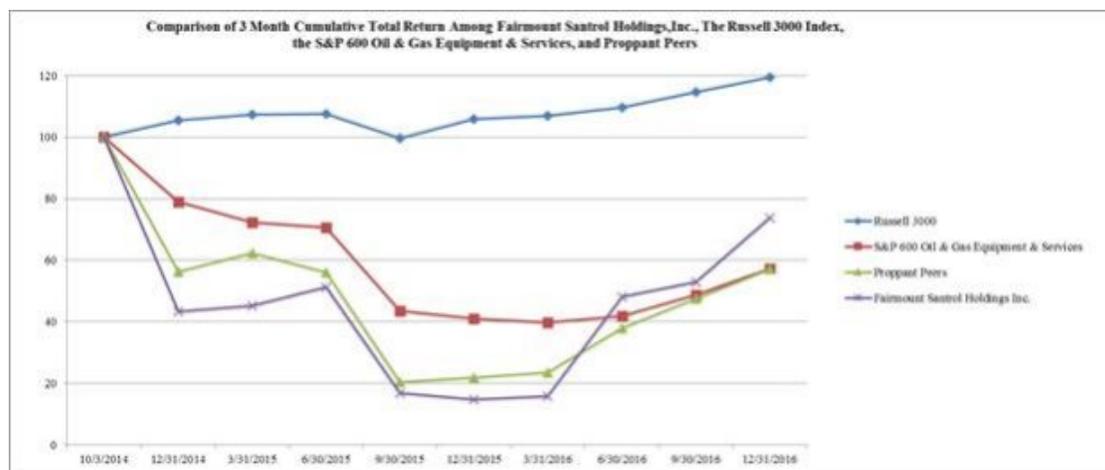
Fairmount Santrol Holdings Inc. Comparative Stock Performance Graph

The information contained in this Fairmount Santrol Holdings Inc. Comparative Stock Performance Graph section shall not be deemed to be "soliciting material" or "filed" or incorporated by reference in future filings with the SEC, or subject to the liabilities of Section 18 of the Exchange Act, except to the extent that we specifically incorporate it by reference into a document filed under the Securities Act or the Exchange Act.

The graph below compares the cumulative total shareholder return on our common stock, the cumulative total return on the Russell 3000 Index, the Standard and Poor's Small Cap 600 GICS Oil & Gas Equipment & Services Sub-Industry index, and a composite average of publicly traded proppant peer companies (U.S. Silica Holdings, Inc., Hi-Crush Partners LP, CARBO Ceramics, Inc., and Emerge Energy Services LP) since October 3, 2014, the first day our stock traded on the NYSE.

The graph assumes \$100 was invested on October 3, 2014, the first day our stock was traded on the NYSE, in our common stock, the Russell 3000, the Standard and Poor's Small Cap 600 GICS Oil & Gas Equipment & Services

Sub-Industry Index, and a composite of publicly-traded proppant peer companies. The cumulative total return assumes the reinvestment of all dividends. We elected to include the stock performance of a composite of our publicly-traded peers as we believe it is an appropriate benchmark for our line of business/industry.



TOTAL RETURN

	<u>Russell 3000</u>	<u>S&P Oil & Gas Equipment & Services</u>	<u>Proppant Peers</u>	<u>Fairmount Santrol Holdings Inc.</u>
10/3/2014	100.00	100.00	100.00	100.00
12/31/2014	105.42	78.93	56.17	43.25
3/31/2015	107.32	72.34	62.20	45.25
6/30/2015	107.47	70.55	55.96	51.19
9/30/2015	99.68	43.49	20.31	16.88
12/31/2015	105.92	41.04	21.80	14.69
3/31/2016	106.94	39.77	23.48	15.69
6/30/2016	109.76	41.86	37.80	48.19
9/30/2016	114.58	48.72	47.54	53.00
12/31/2016	119.40	57.24	56.97	73.69

ITEM 6. SELECTED FINANCIAL DATA

The following table presents our consolidated statement of operations and certain operating data. The results of operations by segment are discussed in further detail following the consolidated overview.

	Year Ended December 31,				
	2016	2015	2014	2013	2012
	(in thousands)				
Statement of Income Data:					
Revenues	\$ 535,013	\$ 828,709	\$ 1,356,458	\$ 988,386	\$ 885,190
Income (loss) from operations	(179,319)	(30,135)	311,664	227,956	278,426
Income (loss) before provision for income taxes	(239,566)	(93,869)	248,036	149,876	219,842
Net income (loss)	(140,125)	(91,930)	170,623	104,657	149,473
Net income (loss) attributable to Fairmount Santrol Holdings Inc.	(140,192)	(92,135)	170,450	103,961	148,886
Earnings (loss) per share					
Basic	\$ (0.78)	\$ (0.57)	\$ 1.08	\$ 0.67	\$ 0.96
Diluted	\$ (0.78)	\$ (0.57)	\$ 1.03	\$ 0.63	\$ 0.91
Statement of Cash Flows Data:					
Net cash provided by (used in):					
Operating activities	\$ (6,592)	\$ 235,994	\$ 205,276	\$ 174,635	\$ 186,433
Investing activities	(26,214)	(114,000)	(138,331)	(579,517)	(107,366)
Financing activities	54,889	(25,091)	(7,677)	410,515	(119,070)
Other Financial Data:					
Capital expenditures	\$ 30,597	\$ 113,750	\$ 143,491	\$ 111,514	\$ 109,016
EBITDA	(101,990)	34,922	368,084	248,877	303,659
Adjusted EBITDA	(4,902)	138,100	397,291	292,584	318,650
Operating Data:					
<i>Proppant Solutions</i>					
Total tons sold	6,415	6,204	7,188	5,117	3,765
Revenues	\$ 416,144	\$ 710,083	\$ 1,232,232	\$ 856,212	\$ 757,851
Segment gross profit	26,501	175,226	463,426	317,117	336,981
<i>Industrial & Recreational Products</i>					
Total tons sold	2,504	2,301	2,426	2,462	2,375
Revenues	\$ 118,869	\$ 118,626	\$ 124,226	\$ 132,174	\$ 127,339
Segment gross profit	48,798	44,638	41,578	43,427	45,792
Balance Sheet Data (at period end):					
Cash and cash equivalents	\$ 194,069	\$ 171,486	\$ 76,923	\$ 17,815	\$ 11,866
Total assets	1,202,910	1,368,959	1,514,016	1,283,431	679,601
Long-term debt (including current portion)	843,013	1,237,816	1,252,639	1,262,146	831,195
Total liabilities	951,790	1,429,327	1,480,542	1,448,789	965,529
Total equity (deficit)	251,120	(60,368)	33,474	(165,358)	(285,928)

ITEM 7. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

The following discussion and analysis summarizes the significant factors affecting the consolidated operating results, financial condition, liquidity and cash flows of our company as of and for the periods presented below. The following discussion and analysis should be read in conjunction with our description of the business in Item 1, "Business" in this report, and our consolidated financial statements in Item 8 of this Annual Report on Form 10-K. This discussion contains forward-looking statements that are based on the beliefs of our management, as well as assumptions made by, and information currently available to, our management. Actual results could differ materially from those discussed in or implied by forward-looking statements as a result of various factors, including those discussed herein, particularly in the section entitled "Risk Factors."

Overview

We are one of the world's largest providers of sand-based proppant solutions and for nearly 40 years have been a pioneer in the development of high performance proppants used by E&P companies to enhance the productivity of their oil and gas wells. We offer the broadest range of proppants available in the market today, including high quality sand and a variety of coated products. All of our frac sand exceeds API specifications. Additionally, for more than 120 years, we and our predecessor companies have provided high quality sand-based products, strong technical leadership and applications knowledge to end users in the I&R markets.

As one of the industry leaders, our asset base at December 31, 2016 included 742 million tons of proven and probable mineral reserves, which we believe is one of the largest reserve bases in the industry. Responding to evolving conditions since 2014 through 2017, we have adjusted our operational footprint to minimize our costs and consolidate into the lowest-cost footprint possible and continue to make cost reductions. As of March 2017, we have 10 sand processing facilities (8 of which are active) with 16.9 million tons of annual sand processing capacity. We re-opened our Menomonie, Wisconsin facility at the end of the third quarter 2016 and restarted our Brewer, Missouri and Maiden Rock, Wisconsin facilities in early 2017, primarily to serve the increased demand in the proppant market. We also have 9 coating facilities (5 of which are active) with 2.3 million tons of annual coating capacity. As of the date of this report, we are in the process of reopening our coating facility in Cutler, Illinois.

We are capable of Class I railroad deliveries to each of North America's major oil and gas producing basins and also have the flexibility to ship our product via barge, marine terminals and trucks to reach our customers as needed. We operate an integrated logistics platform consisting of 41 proppant distribution terminals and a fleet of approximately 10,000 railcars, which includes 1,195 customer railcars, considering car returns that took place throughout the year and subleases. Our unit train capabilities include four production facilities and nine in-basin terminals, which reduce freight costs and improve cycle times for our railcar fleet. In order to better align our logistics network with customer demand and to reduce costs, we discontinued activity at five transloading terminals in 2016.

Our operations are organized into two segments based on the primary end markets we serve: (i) Proppant Solutions and (ii) I&R. Our Proppant Solutions segment predominantly provides sand-based proppants for use in hydraulic fracturing operations throughout the U.S. and Canada, Argentina, Mexico, China, northern Europe and the United Arab Emirates. Our I&R segment provides raw, coated, and custom blended sands to the foundry, building products, glass, turf and landscape and filtration industries primarily in North America. We believe our two market segments are complementary. Our ability to sell to a wide range of customers across multiple end markets allows us to maximize the recovery of our reserve base within our mining operations and to reduce the cyclicity of our earnings.

Recent Trends and Outlook

Recent trends driving demand for our proppants and commercial silica include:

- *Level of drilling activity and demand for proppants*. Through 2014, the growth in the use of horizontal drilling utilizing hydraulic fracturing as a means to extract hydrocarbons from shale formations dramatically increased the number of oil and gas rigs operating in North America. This increased drilling activity contributed to substantial growth in demand for proppants from 2009 to 2014. In 2015, due to the

increasing global supply of oil and slowing growth of global oil demand, crude oil prices experienced downward pressure which caused various E&P companies to reduce drilling and capital programs resulting in significantly reduced rig counts. United States horizontal land rig counts have fallen considerably from an average of 730 rigs throughout 2015 to an average of 400 rigs in 2016. The volatility and cyclicality in United States horizontal land rig counts resulted in market uncertainty and reduced drilling activity and demand for proppants throughout 2016. In response to these market trends, E&P companies and oil field service companies have refined their well designs and hydraulic fracturing techniques to achieve more efficient production. These changes in techniques have increased the demand for proppants, by increasing the amount of proppant used per frac stage (“proppant intensity”) associated with finer grades of proppant.

- *Shift in drilling activity and demand mix*. The level of drilling activity for oil and gas has an impact on the demand for proppant and the mix of proppant we sell. In 2014, with the rapid growth of drilling deep wells in regions such as the Permian region, and drilling wells in regions that were prone to the flowback of proppant, we saw a rapid increase in demand for our coated proppants. In 2015 and 2016, lower crude oil prices have caused E&P companies to seek ways to reduce short-term operating costs at the expense of maximizing well performance and, as a result, we have seen reduced demand for our coated proppants. Further, lower crude oil prices have caused many operators to drill fewer of the deeper and more expensive wells in an effort to reduce production costs, which has also had an adverse impact on the demand for coated proppants, particularly those designed to add strength for higher closer pressures. There also can be ongoing shifts in grade sizes that impact the demand for our raw sand proppants.
- *Volatility in selling prices for proppants*. The rapid growth in demand for proppants in 2014 driven by relatively high oil and gas prices and high levels of drilling activity caused selling prices for proppants to increase as the market for proppants was generally undersupplied. This imbalance of supply and demand caused many proppant suppliers to expand production capacity in anticipation of continued growth in demand. However, the rapid decline in oil and gas prices that occurred later in 2014 and into 2016 led to reduced drilling activity and reduced demand for proppants. As a result, the proppant market was in a position of oversupply, which has caused selling prices for all proppants to decline throughout the majority of 2016 and has caused realignment of production capacities.
- *Demand for in-basin delivery of proppant*. In recent years, many customers sought to outsource proppant logistics and to purchase proppant at the basin, allowing them to focus on their core competencies, minimize inventory costs, and maximize flexibility. In 2016, approximately 75% of our proppant sales volume was sold in-basin. Our terminal network continues to be a key differentiator for customers to provide proppants closer to completion activities. With our increasing capability to provide low-cost unit train shipments directly to large customers while also shipping unit trains to certain of our own in-basin terminals, we are well-equipped to take advantage of shifting demand.
- *Increased demand for unit train deliveries*. With the shift of larger oilfield services customers toward shipments taken directly from our plants, there is also a greater demand for shipments via unit trains to enhance the economics of deliveries. During the fourth quarter of 2016, we shipped over 100 unit trains representing approximately 75% of Northern White sand volumes with over 330 unit trains of product shipped in 2016. We are well-positioned to help our customers lower their costs and improve delivery, as we now have nine unit train-capable destinations.
- *Continued stable demand in industrial end markets*. Sales in our I&R segment are driven by macroeconomic factors such as housing starts, light vehicle sales, repair and remodel activity and industrial production. To the extent these demand drivers continue on their current trends, we expect that demand for our commercial silica products will remain relatively stable.

How We Generate Our Sales

We derive our sales by mining, processing and transporting sand-based proppants and silica sand products that our customers purchase for use in a wide variety of applications. In our Proppant Solutions business for the year ended December 31, 2016, we sold approximately 75% of our North American proppant volume through our network of terminals at selling prices that are set by local market dynamics. The remaining volume in the Proppant Solutions business is sold to customers directly from our mining and production facilities. The average selling prices for

products sold through our terminals are higher than the average selling prices for comparable products sold from our production facilities due to costs incurred to handle and transport the products from the production facilities to the terminals. Generally, logistics costs can comprise 70-80% of the delivered cost of Northern White frac sand, depending on the basin into which the product is delivered. Due to the closer proximity of distribution terminals to our production facility, the amount of logistics costs included in the total delivered cost of our Texas Gold frac sand generally will be lower than that for our Northern White frac sand.

We primarily sell products under supply agreements with terms that vary by contract. Generally, the selling prices specified in our contracts are based on market prices. We believe that this approach to contract pricing allows us to reduce prices and retain or gain volume in market downcycles and capture higher prices in market upcycles. Our contracts have a variety of volume provisions. While certain of our contracts have no minimum volume requirements, certain of the agreements require the customer to purchase a specified percentage of its proppant requirements or a minimum volume of proppant from us. Certain of these minimum volume contracts include a provision which may trigger penalties if the purchased volume does not meet the required minimums.

Our Proppant Solutions segment represented 78% of our revenues for the year ended December 31, 2016. A large portion of our sales is generated by our top customers, and the loss of, or significant reduction in, purchases by our largest customers could adversely affect our operations. During the years ended December 31, 2016 and 2015, our top ten proppant customers collectively represented 70% of our revenues. During the same periods, sales in the aggregate to our top two customers, Halliburton Company (“Halliburton”) and FTS International Services, LLC (“FTSI”), collectively accounted for 42% and 43% of our revenues, respectively.

Our I&R business segment has over 755 customers and represented 22% of our revenues for the year ended December 31, 2016. In our I&R business, we use our network of I&R distribution terminals to sell products from our production facilities to distributors which sell the product to the end user.

The Costs of Conducting Our Business

The principal costs involved in operating our business are logistics costs associated with transporting products from our production facilities to our terminals; payroll costs for personnel at our production, terminal and administrative facilities; resin and other raw materials and supplies used in the production of our products; and maintenance and repair costs at our production facilities. We own or lease most of our sand reserves, the combination of which, we believe, helps us maintain a very competitive cost position.

Logistics costs, including freight, railcar leases, demurrage and handling, represented approximately 48% and 37% of our revenues during the year ended December 31, 2016 and 2015, respectively. Freight costs primarily represent charges to transport our product by rail, but we also ship product by truck and barge. In order to move product by rail, we lease a substantial number of railcars under operating leases with durations ranging from three to seven years. We currently have approximately 9,400 railcars under lease and 1,195 railcars made available to us from our customers, giving us a total fleet of approximately 10,000 railcars (net of 560 cars currently subleased). Demurrage costs are charged by the railroads based on the time a railcar spends on the rail in excess of the allotted time. These costs can vary significantly from period to period driven by high levels of rail activity at a terminal and changes in the timing of fulfilling customer orders. Handling costs are incurred at our distribution and terminal facilities to move product from one mode of transportation to another (e.g., truck to railcar) and to move product into storage facilities. Storage costs are incurred when railcars are temporarily taken out of service and stored at a rail yard or storage facility.

Labor costs, including wages and benefits, represented approximately 16% and 13% of revenues during the year ended December 31, 2016 and 2015, respectively. Approximately 18% of our workforce was party to collective bargaining contracts as of December 31, 2016.

We use a significant amount of resins and additives in the production of our coated products in both our Proppant Solutions and I&R businesses. We purchase these resins under supply agreements that contain annual pricing adjustments based on the cost of phenol, the primary component of the resins we buy. We also supply a portion of our resin requirements from our resin manufacturing facility located in Michigan. The cost of resins and additives

represented approximately 4% and 8% of revenues during the years ended December 31, 2016 and 2015, respectively.

Our selling, general and administrative costs, which include the wages and benefits costs noted above, represented approximately 15% and 10% of revenues during the years ended December 31, 2016 and 2015, respectively. These costs are related to our corporate operations, including costs for the sales and marketing; research and development; finance; legal; and environmental, health and safety functions of our organization, as well as stock compensation expense. Since becoming a public company, we incur additional legal, accounting, insurance and other expenses that we did not incur as a private company, including costs associated with public company reporting requirements. These requirements include compliance with the Sarbanes-Oxley Act as well as other applicable SEC and NYSE rules.

We capitalize the costs of our mining and processing equipment and depreciate them over their expected useful life. We also capitalize the costs to remove overburden on our sand reserves for our surface mines and amortize them based on the actual tons mined. Depreciation, depletion, and amortization costs represented approximately 14% and 8% of revenues during the years ended December, 2016 and 2015, respectively. Repair and maintenance costs that do not involve the replacement of major components of our equipment and facilities are expensed as incurred. These repair and maintenance costs can be significant due to the abrasive nature of our products and represented approximately 4% and 3% of revenues during the years ended December 31, 2016 and 2015, respectively.

How We Evaluate Our Business

Our management uses a variety of financial and operational metrics to analyze our performance across our Proppant Solutions and I&R segments. This segmentation is based on the primary end markets we serve, our management structure and the financial information that is reviewed by the Chief Executive Officer in deciding how to allocate resources and assess performance. We evaluate the performance of these segments based on their volumes sold, average selling price and segment gross profit. We do not evaluate the performance of the segments on a margin percentage basis, as that is a function of the channel in which a given product is sold (for example, in-basin sales generate higher selling price but comparable per ton margin, resulting in reduced margin percentage) and product mix. Additionally, we consider a number of factors in evaluating the performance of the business as a whole, including total volumes sold and Adjusted EBITDA. We view these metrics as important factors in evaluating our profitability and review these measurements frequently to analyze trends and make decisions.

Segment Contribution Margin and Segment Gross Profit

Previously, segment contribution margin was a key metric that management used to evaluate our operating performance and to determine resource allocation between segments. Segment contribution margin was defined as total revenues less the cost of goods sold to produce and deliver the products, less selling, general and administrative expenses that are directly attributable to each segment. The definition excluded certain corporate costs not associated with the operations of the segment. These unallocated costs included costs related to corporate functional areas such as administration, accounting, finance, treasury, information technology, human resources, research and development, business development and sustainable development, as well as unallocated costs related to operations such as undeveloped mineral rights reserves.

After evaluation in 2016 of our comparability to industry peers and practices, management changed the method to evaluate our operating segments' performance based on segment gross profit, which excludes depreciation, depletion, and amortization expenses and does not include any selling, general, and administrative costs or corporate costs. The change to using segment gross profit results in an increase in reported segment profitability compared to segment contribution margin as allocable selling, general, and administrative costs were charged against segment contribution margin. This change was effective beginning the third quarter of 2016. All periods presented have been restated accordingly.

EBITDA and Adjusted EBITDA

EBITDA and Adjusted EBITDA are supplemental non-GAAP financial measures that are used by management and certain external users of our financial statements in evaluating our operating performance.

We define EBITDA as net income before interest expense, income tax expense, depreciation, depletion and amortization. Adjusted EBITDA is defined as EBITDA before non-cash stock-based compensation, impairment of assets, and certain other income or expenses .

Management believes EBITDA and Adjusted EBITDA are useful because they allow us to more effectively evaluate our operations from period to period without regard to our financing methods or capital structure. EBITDA and Adjusted EBITDA have limitations as analytical tools and should not be considered as alternatives to, or more meaningful than net income as determined in accordance with GAAP as indicators of our operating performance. Certain items excluded from EBITDA and Adjusted EBITDA are significant components in understanding and assessing a company's financial performance, such as a company's cost of capital and tax structure, as well as the historic costs of depreciable assets, none of which are components of EBITDA or Adjusted EBITDA. Although we attempt to determine EBITDA and Adjusted EBITDA in a manner that is consistent with other companies in our industry, our computations of EBITDA and Adjusted EBITDA may not be comparable to other similarly titled measures of other companies. We believe that EBITDA and Adjusted EBITDA are widely followed measures of operating performance.

Adjusted EBITDA is presented as a performance measure because certain charges or expenses may occur in a particular period and are not indicative of true operating performance. For this reason, management believes Adjusted EBITDA is useful to investors as well.

The following table sets forth a reconciliation of net income, the most directly comparable GAA P financial measure, to EBITDA and Adjusted EBITDA:

	Year Ended December 31,		
	2016	2015	2014
(in thousands)			
Reconciliation of Adjusted EBITDA			
Net income (loss) attributable to Fairmount Santrol Holdings Inc.	\$ (140,192)	\$ (92,135)	\$ 170,450
Interest expense, net	65,367	62,242	60,842
Provision (benefit) for income taxes	(99,441)	(1,939)	77,413
Depreciation, depletion, and amortization expense	72,276	66,754	59,379
EBITDA	(101,990)	34,922	368,084
Non-cash stock compensation expense (1)	8,870	4,525	16,571
Goodwill and other asset impairments (2)	93,148	80,188	-
Restructuring charges (3)	-	9,221	-
Loss on disposal of fixed assets (4)	-	7,915	1,921
Write-off of deferred financing costs (5)	2,618	864	-
Gain on repurchase of debt (6)	(8,178)	-	-
Transaction expenses (7)	450	-	638
Management fees & expenses paid to sponsor (8)	-	-	864
Other charges (9)	180	465	-
Initial Public Offering fees & expenses	-	-	9,213
Adjusted EBITDA	\$ (4,902)	\$ 138,100	\$ 397,291

- (1) Represents the non-cash expense for stock-based awards issued to our employees and outside directors.
- (2) Non-cash charges in 2016 are associated with the impairment of mineral reserves and other long-lived assets. The fourth quarter of 2015 included a \$69.2 million impairment of goodwill in the Proppant Solutions segment.
- (3) Expenses associated with restructuring activities and plant closures, including pension withdrawal, severance payments, and other liabilities. We no longer reflect cash charges related to restructuring as an adjustment to EBITDA in 2016 results.
- (4) Includes losses related to the sale and disposal of certain assets in property, plant, and equipment.
- (5) Represents the write-off of deferred financing fees in relation to term loan repurchases in 2016; and the amendment of our Revolving Credit Facility in 2015.
- (6) Gain related to the discount on term loan repurchases.
- (7) Expenses associated with term loan repurchases in 2016 and acquisition-related activities in 2014.
- (8) Includes fees and expenses paid to American Securities for consulting and management services pursuant to a management consulting agreement. The agreement was terminated upon the Initial Public Offering in October 2014.
- (9) Loss on the curtailment of a pension plan in 2016 and cash payment associated with an audit of our Employee Stock Bonus Plan in 2015.

Results of Operations

The following table presents our consolidated statement of operations and certain operating data. The results of operating by segment are discussed in further detail following the consolidated overview.

	Year Ended December 31,		
	2016	2015	2014
	(in thousands)		
Other Financial Data			
Net income (loss) attributable to Fairmount Santrol Holdings Inc.	\$ (140,192)	\$ (92,135)	\$ 170,450
EBITDA	(101,990)	34,922	368,084
Adjusted EBITDA	\$ (4,902)	\$ 138,100	\$ 397,291
Operating Data			
<i>Proppant Solutions</i>			
Total tons sold	6,415	6,204	7,188
Revenues	\$ 416,144	\$ 710,083	\$ 1,232,232
Segment gross profit	\$ 26,501	\$ 175,226	\$ 463,426
<i>Industrial & Recreational Products</i>			
Total tons sold	2,504	2,301	2,426
Revenues	\$ 118,869	\$ 118,626	\$ 124,226
Segment gross profit	\$ 48,798	\$ 44,638	\$ 41,578

Year Ended December 31, 2016 Compared to Year Ended December 31, 2015

Revenues

Revenues decreased \$293.7 million, or 35%, to \$535.0 million for the year ended December 31, 2016 compared to \$828.7 million for the year ended December 31, 2015, primarily due to declines in volumes, particularly coated proppants, including the impact of product mix and lower average selling prices in our Proppant Solutions segment.

North American rig counts increased approximately 31% from the third quarter of 2016 into the fourth quarter of 2016, but are still down approximately 45% from prior year levels. Oil prices have stabilized in 2016 at an average of approximately \$43 per barrel of oil versus approximately \$49 per barrel in the prior year. In response to the current market trends, E&P companies and oilfield service companies are continuing to refine their well designs and hydraulic fracturing techniques to achieve more efficient production. These changes in techniques have increased the demand for proppants by increasing the amount of proppant used per frac stage ("proppant intensity") associated with finer graders of proppant.

Total volumes in the Proppant Solutions segment increased 3% to 6.4 million tons in the year ended December 31, 2016 compared to the year ended December 31, 2015. Raw frac sand volumes increased 11% to 6.0 million tons in the year ended December 31, 2016 compared to 5.4 million tons in the year ended December 31, 2015. Coated proppant volumes decreased 52% to 0.4 million tons in the year ended December 31, 2016 compared to 0.8 million tons in the year ended December 31, 2015. Revenues in the Proppant Solutions segment decreased \$293.9 million, or 41%, to \$416.1 million for the year ended December 31, 2016 compared to \$710.1 million for the year ended December 31, 2015. The decrease in Proppant Solutions revenue was primarily due to higher volumes offset by continued pricing declines throughout the year and shift in mix toward raw frac sales in 2016 versus 2015.

As a result of the current market trends, including the decline in oil and gas pricing, reduced drilling activity, and reduced demand for proppants; the average selling prices for all proppants declined from the prior year.

Volumes in the I&R segment increased to 2.5 million tons in the year ended December 31, 2016 compared to 2.3 million tons in the year ended December 31, 2015. Revenues increased \$0.2 million to \$118.9 million for the year ended December 31, 2016 compared to \$118.6 million for the year ended December 31, 2015. I&R segment

revenue was impacted by an expansion of our customer base and strong performance in several key markets, including glass, building products, and sports and recreation.

Revenues in our I&R segment are driven by macroeconomic factors, such as housing starts, light vehicle sales, repair and remodel activity, and industrial production. To the extent the trend of these demand drivers are consistent, we expect that demand for our commercial silica products will remain relatively stable.

Segment Gross Profit

Gross profit decreased \$144.6 million to \$75.3 million for the year ended December 31, 2016 compared to \$219.9 million for the year ended December 31, 2015, primarily due to product mix and selling prices in our Proppant Solutions segment. Gross profit for the year ended December 31, 2016 also included inventory write-downs of \$10.3 million.

Gross profit in the Proppant Solutions segment decreased \$148.7 million to \$26.5 million for the year ended December 31, 2016 compared to \$175.2 million for the year ended December 31, 2015. Gross profit in the Proppant Solutions segment contains \$0.1 million from a pension loss curtailment from the Technisand pension plan and \$9.9 million from inventory write-downs for the year ended December 31, 2016. Excluding these charges, the volume increases in the Proppant Solution segment improved gross profit for the year ended December 31, 2016 by approximately \$2 million compared to 2015. However, this improvement to gross profit from volume was more than offset by the declines in pricing throughout the year and changes in product mix between raw frac sand and coated proppants.

Gross profit in the I&R segment increased \$4.2 million, or 9%, to \$48.8 million for the year ended December 31, 2016 compared to \$44.6 million for the year ended December 31, 2015. The increase was primarily driven by increased volumes and improved costs per ton. Gross profit in the I&R segment for the year ended December 31, 2016 includes write-downs of \$0.4 million.

Selling, General and Administrative Expenses

Selling, general and administrative expenses ("SG&A") decreased \$6.1 million, or 7%, to \$79.1 million for the year ended December 31, 2016 compared to \$85.2 million for the year ended December 31, 2015. SG&A costs for 2016 included \$7.3 million in professional fees for cost reduction initiatives, extension of our Term B-1 Loans, and stock offering fees throughout the year. SG&A also includes stock compensation expense of \$8.9 million and \$4.5 million for the years ended December 31, 2016 and 2015, respectively. Stock compensation expense was higher in 2016 due to plan amendments for retirement provisions while 2015 stock compensation expense had \$2.6 million of forfeitures included for employee departures. The declines in SG&A over prior year levels are the result of workforce reductions in 2015 and early 2016 and continued focus around cost reductions.

Depreciation, Depletion and Amortization

Depreciation, depletion and amortization increased \$5.5 million, or 8%, to \$72.3 million for the year ended December 31, 2016 compared to \$66.8 million for the year ended December 31, 2015. The increase in depreciation is due to more assets placed in service primarily related to the Wedron plant expansion.

Income (Loss) from Operations

Income (loss) from operations decreased \$149.2 million to a loss of \$179.3 million for the year ended December 31, 2016 compared to loss of \$30.1 million for the year ended December 31, 2015. Earnings in 2016 were largely impacted by declines in gross profits due to the changes in product mix and decreased selling prices. The loss from operations for the year ended December 31, 2016 included inventory write-downs of \$10.3 million; \$9.8 million in railcar renegotiation fees; professional fees from cost reduction initiatives, debt refinancing and stock equity offerings of \$7.3 million, \$1.2 million in severance costs, and non-cash impairments and restructuring costs of \$93.3 million.

Interest Expense

Interest expense increased \$3.1 million, or 5%, to \$65.4 million for the year ended December 31, 2016 compared to \$62.2 million for the year ended December 31, 2015. The change in interest expense is in part due to the prepayments and repurchases of the term loans, which reduced overall interest expense, and an increase in the notional amounts for interest rate swap agreements, entered into in 2013, that became effective October 2015.

Provision (Benefit) for Income Taxes

The provision (benefit) for income taxes decreased \$97.5 million to arrive at a benefit of \$99.4 million for the year ended December 31, 2016 compared to benefit of \$1.9 million for the year ended December 31, 2015. Income before income taxes decreased \$145.7 million to a loss of \$239.6 million for the year ended December 31, 2016 compared to loss of \$93.9 million for the year ended December 31, 2015. The tax provision is primarily impacted by the benefit from a loss carryback and depletion. These favorable items are partially offset by an increase in the valuation allowance primarily related to federal and state net operating loss carryforwards.

Net Income (Loss) Attributable to Fairmount Santrol Holdings Inc.

Net income attributable to Fairmount Santrol Holdings Inc. decreased \$48.1 million to a loss of \$140.2 million for the year ended December 31, 2016 compared to loss of \$92.1 million for the year ended December 31, 2015 due to the factors noted above.

Adjusted EBITDA

Adjusted EBITDA decreased \$143.0 million to a loss of \$4.9 million for the year ended December 31, 2016 compared to income of \$138.1 million for the year ended December 31, 2015. Adjusted EBITDA for 2016 excludes the impact of \$8.9 million of non-cash stock compensation expense, the \$5.1 million net gain from the repurchase of debt, and \$93.3 million from asset impairments and restructuring charges. Fees of \$9.8 million from the renegotiation of certain railcar leases, \$7.3 million in professional fees from cost reduction initiatives, debt refinancing and stock equity offerings and inventory write-offs of \$10.3 million have not been added back to Adjusted EBITDA. The decline in Adjusted EBITDA in 2016 over 2015 was largely due to declines in proppant pricing and product mix over the period.

Year Ended December 31, 2015 Compared to Year Ended December 31, 2014

Revenues

Revenues decreased \$527.8 million, or 39%, to \$828.7 million for the year ended December 31, 2015 compared to \$1,356.5 million for the year ended December 31, 2014, due to decreased volumes, pricing compression, and product mix primarily in the Proppant Solutions segment.

Revenues in the Proppant Solutions segment decreased \$522.1 million, or 42%, to \$710.1 million for the year ended December 31, 2015 compared to \$1,232.2 million for the year ended December 31, 2014. Total volumes decreased 14% to 6.2 million tons in the year ended December 31, 2015 compared to the year ended December 31, 2014. Raw frac sand volumes decreased slightly to 5.4 million tons in the year ended December 31, 2015 compared to 5.7 million tons in the year ended December 31, 2014. The average selling price for raw frac sand in 2015 decreased approximately 19% from 2014. Coated proppant volumes decreased 48% to 0.8 million tons in the year ended December 31, 2015 compared to 1.5 million tons in the year ended December 31, 2014. The average selling price for resin-coated proppants in 2015 decreased approximately 18% from 2014. The decrease in Proppant Solutions revenue was due to pricing declines, a shift in sales toward FOB plant shipments, and declines in resin-coated proppant volumes primarily in the second half of the year.

Revenues in the I&R segment decreased \$5.6 million, or 5%, to \$118.6 million for the year ended December 31, 2015 compared to \$124.2 million for the year ended December 31, 2014. Volumes declined slight to 2.3 million tons in the year ended December 31, 2015 compared to 2.4 million tons in the year ended December 31, 2014. I&R

segment revenue for the year ended December 31, 2015 was impacted by downward pressure in the U.S. foundry market as well as a shift in customer and product mix in the business.

Segment Gross Profit

Gross profit in the Proppant Solutions segment decreased \$288.2 million to \$175.2 million for the year ended December 31, 2015 compared to \$463.4 million for the year ended December 31, 2014. The decrease in segment gross profit was primarily driven by lower volumes, changes in product mix, decreased selling prices, and higher operating costs per ton due to lower volumes over which to absorb fixed costs such as railcars and logistics.

Gross profit in the I&R segment increased \$3.1 million, or 7%, to \$44.6 million for the year ended December 31, 2015 compared to \$41.6 million for the year ended December 31, 2014.

Selling, General, and Administrative Expenses

Selling, general, and administrative expenses decreased \$45.6 million, or 35%, to \$85.2 million for the year ended December 31, 2015 compared to \$130.8 million for the year ended December 31, 2014. SG&A also includes stock compensation expense of \$4.5 million and \$16.6 million for the years ended December 31, 2015 and 2014, respectively. Stock compensation expense was higher in 2014 due to greater operating results and higher grants of stock award incentives. SG&A costs excluding stock compensation expense decreased \$33.6 million primarily due to lower costs associated with incentive plans, pension contributions, and reduced workforce this year as well as non-recurring costs in the prior year associated with the October 2014 Initial Public Offering.

Depreciation, Depletion, and Amortization

Depreciation, depletion, and amortization increased \$7.4 million, or 12%, to \$66.8 million for the year ended December 31, 2015 compared to \$59.4 million for the year ended December 31, 2014. The increase in depreciation is due to more assets placed in service primarily related to the Wedron plant expansion.

Income (Loss) from Operations

Income (loss) from operations decreased \$341.8 million, or 110%, to a loss of \$30.1 million for the year ended December 31, 2015 compared to income of \$311.7 million for the year ended December 31, 2014. Earnings in 2015 were largely impacted by non-recurring impairment and restructuring charges of \$96.7 million as well as declines in gross profits due to lower volumes and decreased selling prices.

Interest Expense

Interest expense increased \$1.4 million, or 2%, to \$62.2 million for the year ended December 31, 2015 compared to \$60.8 million for the year ended December 31, 2014 primarily due to interest rate swap agreements, entered into in 2013, that became effective October 2015.

Provision (Benefit) for Income Taxes

The provision (benefit) for income taxes decreased \$79.4 million, or 103%, to arrive at a benefit of \$1.9 million for the year ended December 31, 2015 compared to a provision of \$77.4 million for the year ended December 31, 2014. Income before income taxes decreased \$341.9 million or 138% to a loss of \$93.9 million for the year ended December 31, 2015 compared to income of \$248.0 million for the year ended December 31, 2014. The primary items impacting the tax provision include an increase in the valuation allowance primarily related to U.S. alternative minimum tax credits and U.S. research credits; a goodwill impairment charge with no corresponding income tax benefit; and the accrual of deferred taxes on our accumulated foreign undistributed earnings resulting from a change in our indefinite reinvestment assertion. These unfavorable items were partially offset by a 9.7% effective income tax benefit related to depletion.

Net Income (Loss)

Net income decreased \$262.6 million, or 154%, to a loss of \$92.1 million for the year ended December 31, 2015 compared to income of \$170.5 million for the year ended December 31, 2014 due to the factors noted above.

Adjusted EBITDA

Adjusted EBITDA decreased \$259.2 million, or 65%, to \$138.1 million for the year ended December 31, 2015 compared to \$397.3 million for the year ended December 31, 2014. The decline in Adjusted EBITDA was largely due to declines in proppant pricing and volumes.

Liquidity and Capital Resources

Overview

Our liquidity is principally used to service our debt and to meet our working capital and capital expenditure needs. Historically, we have met our liquidity and capital investment needs in part with funds generated from operations as well as through periodic capital market transactions, such as the issuance of shares of our common stock, subject to market conditions.

As of December 31, 2016, we had outstanding long-term debt of \$843.0 million, net of deferred financing fees, and cash on-hand of \$194.1 million. In addition, we have a Revolving Credit Facility that can provide additional liquidity, if needed. As of December 31, 2016 we had \$31.3 million of availability under our Revolving Credit Facility with \$13.8 million committed to letters of credit, leaving net availability at \$17.4 million.

On April 28, 2016, we amended our term loan facility. Under the terms of the amendment, we prepaid \$69.6 million, plus accrued interest, to certain of our Term B-1 Loans lenders. These lenders in turn agreed to extend the maturity date to July 15, 2018 for \$69.6 million of Term B-1 Loans, which were originally due March 15, 2017.

On July 26, 2016, we completed a public offering of 25 million shares of common stock. In addition, the underwriters completed their exercise of an overallotment option on July 28, 2016 to purchase an additional 3.75 million shares. We received cash proceeds of approximately \$161 million, net of underwriting commissions and offering expenses.

On October 25, 2016, we completed a public offering of 30.25 million shares of common stock. We received cash proceeds of approximately \$277 million, net of underwriting commissions and offering expenses for the shares sold.

We used a substantial portion of the proceeds from these offerings to pay down or repurchase our Term Loans and the balance will be used for general corporate purposes, which include, but are not limited to, an increase in working capital to support operations, further repayment, redemption or refinancing of debt and leases, capital expenditures, investments in or loans to subsidiaries and joint ventures, and satisfaction of other obligations.

On October 17, 2016, we repurchased \$3 million of the Extended Term B-1 Loans at 91.5% of par. On November 17, 2016, we fully prepaid the \$16.9 million of the Term B-1 Loans due March 2017 as well as the \$69.6 million of the 2016 Extended Term Loans. On November 29, 2016, we repurchased, at an average of 96.3% of par, \$37.9 million of the Extended Term B-1 Loans and \$175.1 million of the Term B-2 Loans.

As of the date of this report, we believe that our cash on-hand, cash generated through operations, and amounts available under the Revolving Credit Facility will be sufficient to meet cash obligations, such as working capital requirements, anticipated capital expenditures, and scheduled debt payments, over the next twelve months. We may use cash at times to negotiate repurchases of our syndicated term debt to the extent permitted under our credit agreement. See "Credit Facilities" below for more information.

A continued sustained downturn in our business's key markets could significantly impact our forecasts. While we believe that our operations forecasts are reasonable, these forecasts are based on projected market conditions impacting the industry, primarily the proppant business, as well as assumptions, which may or may not prove to be accurate. In the event the operating results are significantly worse than projected or we are unsuccessful in

generating sufficient liquidity, we may not be able to satisfy our debt obligations and it would be necessary to restructure these obligations. In order to address this risk, we have implemented reductions in operating costs, selling, general, and administrative costs, reduced planned capital spending, restructured debt and railcar obligations, focused on efficient use of working capital and raised capital over the past few years.

Working Capital

Working capital is the amount by which current assets exceed current liabilities, is a measure of liquidity, and source of cash flow. Our working capital was \$279.6 million at December 31, 2016 and \$274.1 million at December 31, 2015.

Accounts Receivable

Accounts receivable increased 7% to \$78.9 million at December 31, 2016 compared to \$73.6 million at December 31, 2015. The increase is primarily the result of higher sales in the three months ended December 31, 2016 compared to the three months ended December 31, 2015. During the year ended December 31, 2016 and 2015, our top ten proppant customers collectively represented 70% of our revenues. During the same periods, sales in the aggregate to our top two customers, Halliburton and FTSI, collectively accounted for 42% and 43% of our revenues, respectively.

Inventory

Inventory consists of raw materials, work-in-process and finished goods. The cost of finished goods includes processing costs and transportation costs to terminals. The decrease in inventory to \$52.7 million at December 31, 2016 compared to \$70.5 million at December 31, 2015 includes the \$10.3 million write-off in inventory throughout the year and also relates to efforts to streamline inventory levels and match production to projected demand, particularly for coated products.

Prepaid Expenses and Other Assets

Prepaid expenses and other assets decreased \$6.3 million to \$7.1 million at December 31, 2016 from \$13.4 million at December 31, 2015, primarily due to a decrease in value-added tax refunds and railcar leases.

Refundable Income Taxes

Refundable income taxes decreased \$5.4 million to \$21.1 million at December 31, 2016 from \$26.5 million at December 31, 2015. The decrease primarily represents the net effect of the carryback of a 2016 estimated loss and the receipt of the refund relating to the carryback of the 2015 loss.

Accounts Payable

Accounts payable decreased \$3.2 million to \$37.3 million at December 31, 2016 compared to \$40.4 million at December 31, 2015. The decrease in accounts payable is due to timing for payments and reduced purchasing and freight activity.

Accrued Expenses

The decrease in accrued expenses to \$26.2 million at December 31, 2016 compared to \$26.8 million at December 31, 2015 was primarily due to a reduction in accrued bonuses, pension expenses, and accrued real estate taxes.

Cash Flow Analysis

Net Cash Provided by (Used in) Operating Activities

Operating activities consist primarily of net income adjusted for non-cash items, including depreciation, depletion, and amortization, asset impairments, and the effect of changes in working capital.

Net cash used in operating activities was \$6.6 million for the year ended December 31, 2016 compared with \$236.0 million provided in the year ended December 31, 2015. This \$242.6 million decrease was primarily the result of a decline in operating income, partially offset by improvements in working capital.

Net cash provided by operating activities was \$236.0 million for the year ended December 31, 2015 compared to \$205.3 million in the year ended December 31, 2014. This \$30.7 million increase was primarily the result of changes in working capital, particularly a decrease in receivables and inventory.

Net Cash Used in Investing Activities

Investing activities consist primarily of capital expenditures for growth and maintenance. Capital expenditures generally are for expansions of production or terminal capacities. Maintenance capital expenditures generally are for asset replacement and health, safety, and quality improvements.

Net cash used in investing activities was \$26.2 million for the year ended December 31, 2016 compared to \$114.0 million used for the year ended December 31, 2015. The \$87.8 million variance was primarily the result of a decrease in capital expenditures.

Capital expenditures of \$30.6 million, including stripping costs, in the year ended December 31, 2016 were primarily focused on the completion of the expansion of our Wedron facility, certain projects improving plant efficiencies, adding terminals, as well as maintenance activities on other assets. Capital expenditures were \$113.8 million in the year ended December 31, 2015 and also were primarily associated with the expansion of the Wedron facility.

Net cash used in investing activities was \$114.0 million for the year ended December 31, 2015 compared to \$138.3 million for the year ended December 31, 2014. The \$24.3 million decrease was primarily the result of a decrease in capital expenditures due to the desire to protect our liquidity and cash resources.

Capital expenditures of \$113.8 million, including stripping costs, in the year ended December 31, 2015 were primarily focused on expansion of our sand processing capacities at our Wedron facility. Capital expenditures of \$143.5 million in the year ended December 31, 2014 were associated with the expansion of our terminal infrastructure, enhancing our unit train capabilities, and expansion of Propel SSP coating capacities.

For 2017, we expect full year capital expenditures, including stripping costs, to approximate \$47 million to \$50 million, which includes maintenance capital, terminal and production investments moving back to baseline levels, and in anticipation of future-period growth.

Net Cash Provided by (Used in) Financing Activities

Financing activities consist primarily of borrowings and repayments under our Term Loans. Net cash provided by financing activities was \$54.9 million in the year ended December 31, 2016 compared to \$25.1 million used in the year ended December 31, 2015 primarily as a result of the common stock offerings, debt prepayments, and debt repurchases.

Net cash used in financing activities was \$25.1 million in the year ended December 31, 2015 compared to \$7.7 million in the year ended December 31, 2014 primarily due payments on our Term Loans and capital leases, the decreases in tax benefits compared to the prior year for the exercise of stock options in the October 2014 Initial Public Offering, and refinancing fees in the current year associated with the extension of our Term B-1 Loans and amendment of our Revolving Credit Facility. We made payments of approximately \$6.0 million against capital lease obligations in 2015.

Credit Facilities

On September 5, 2013, we entered into the Second Amended and Restated Credit Agreement (our "Credit Agreement"). Our Credit Agreement contains a revolving credit facility ("Revolving Credit Facility") and two

tranches of term loans (“Term B-1 Loans” and “Term B-2 Loans”). The Revolving Credit Facility and the Term B-1 and B-2 Loans are secured by a first priority lien on substantially all of our domestic assets.

In February 2014, we executed a joinder agreement to borrow \$41 million in aggregate principal amount of additional Term B-2 Loans, bringing the total outstanding Term B-2 Loans to \$923.8 million. The proceeds of this borrowing were used to repay then outstanding amounts under the Revolving Credit Facility.

In April and May 2015, we extended the maturity of \$46.0 million and \$115.5 million, respectively, of Term B-1 Loans (“Extended Term B-1 Loans”) until September 2019 (the same date as our Term B-2 Loans). The Extended Term B-1 Loans effectively were converted to Term B-2 Loans, and are treated as Term B-2 Loans, under the Credit Agreement for all purposes (including pricing), except for certain minor administrative differences and except that, prior to the Stated B-1 Maturity Date, the Extended Loans shall continue to amortize as Term B-1 Loans. Upon giving effect to the April 2015 and May 2015 Amendments, the maturity date of approximately \$161.5 million in principal amount of outstanding Term B-1 Loans was extended, leaving approximately \$156.6 million in principal amount of outstanding Term B-1 Loans (not including Extended Term B-1 Loans) maturing on the March 15, 2017. We paid fees of approximately \$4.0 million to the lenders as a consent fee for the April and May 2015 Amendments.

On April 28, 2016, we amended our term loan facility. Under the terms of the amendment, we prepaid \$69.6 million, plus accrued interest, to certain of our Term B-1 Loans lenders. These lenders in turn agreed to extend the maturity date to July 15, 2018 for \$69.6 million of Term B-1 Loans (“2016 Extended Term Loans”), which were originally due March 15, 2017.

On October 17, 2016, we repurchased \$3 million of the Extended Term B-1 Loans at 91.5% of par. On November 17, 2016, we fully prepaid the \$16.9 million of the Term B-1 Loans due March 2017 as well as the \$69.6 million of the 2016 Extended Term Loans. On November 29, 2016, we repurchased, at an average of 96.3% of par, \$37.9 million of the Extended Term B-1 Loans and \$175.1 million of the Term B-2 Loans. As of December 31, 2016, we had outstanding term loan borrowings of \$837.3 million.

As of December 31, 2016, we had \$31.3 million of availability under our Revolving Credit Facility with \$13.8 million committed to letters of credit, leaving net availability at \$17.4 million. As of December 31, 2016, we have not drawn on the Revolving Credit Facility.

As of December 31, 2016, the Term B-2 Loans, Extended Term B-1 Loans, and the Revolving Credit Facility had actual interest rates of 4.5%, 4.5%, and 4.3%, respectively.

We have a \$10 million Industrial Revenue Bond outstanding related to the construction of a manufacturing facility in Wisconsin. The bond bears interest, which is payable monthly, at a variable rate. The rate was 0.80% at December 31, 2016. The bond matures on September 1, 2027 and is collateralized by a letter of credit of \$10 million.

As of the date of this report, we believe that the amount available under the Revolving Credit Facility, cash generated from operations, and our cash and cash equivalents on-hand will provide adequate liquidity to allow us to meet our cash obligations over the next twelve months.

Off-Balance Sheet Arrangements

We have no undisclosed off-balance sheet arrangements that have or are likely to have a current or future material effect on our financial condition, changes in financial condition, revenues, expenses, results of operations, liquidity, capital expenditures or capital resources.

Contractual Obligations

As of December 31, 2016, we have contractual obligations for long-term debt, capital leases, operating leases, purchase obligations, terminal operating costs, and other long-term liabilities. Substantially all of the operating lease obligations are for railcars. At the end of the third quarter 2016, we completed contract renegotiations for a

portion of our railcar fleet that cancelled \$49.5 million in purchase commitments and deferred \$136.5 million of purchase commitments, which includes \$3.9 million from future purchase price increases. We intend to satisfy these purchase obligations through leasing arrangements with third-party lessors.

	Payments Due by Period				
	(in thousands)				
	<u>Total</u>	<u>Less than 1 Year</u>	<u>1-3 Years</u>	<u>3-5 Years</u>	<u>More than 5 Years</u>
Contractual Obligations					
Long-term debt	\$ 847,354	\$ 8,006	\$ 829,310	\$ 38	\$ 10,000
Capital lease obligations	3,734	2,866	868	-	-
Operating lease obligations	300,404	48,961	88,086	68,160	95,197
Purchase obligations	136,456	-	-	136,456	-
Other long-term liabilities reflected on the registrant's balance sheet under GAAP; deferred income taxes and other	45,329	-	40,080	-	5,249
Total contractual cash obligations	<u>\$ 1,333,277</u>	<u>\$ 59,833</u>	<u>\$ 958,344</u>	<u>\$ 204,654</u>	<u>\$ 110,446</u>

Environmental Matters

We are subject to various federal, state and local laws and regulations governing, among other things, hazardous materials, air and water emissions, environmental contamination and reclamation and the protection of the environment and natural resources. We have made, and expect to make in the future, expenditures to comply with such laws and regulations, but cannot predict the full amount of such future expenditures. We may also incur fines and penalties from time to time associated with noncompliance with such laws and regulations.

We recorded an additional \$1.0 million and \$1.1 million in 2016 and 2015, respectively, in future reclamation costs associated with closed facilities. There were no other significant changes to environmental liabilities or future reclamation costs.

We discuss certain environmental matters relating to our various production and other facilities, certain regulatory requirements relating to human exposure to crystalline silica and our mining activity and how such matters may affect our business in the future under "Regulation and Legislation" in this Annual Report on Form 10-K.

Critical Accounting Policies and Estimates

Our 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 GAAP. The preparation of these financial statements requires us to make estimates and assumptions that affect the reported amounts of assets and liabilities and the disclosure of contingent assets and liabilities at the dates of the financial statements and the reported revenues and expenses during the reporting periods. We evaluate these estimates and assumptions on an ongoing basis and base our estimates on historical experience, current conditions and various other assumptions that are believed to be reasonable under the circumstances. The results of these estimates form the basis for making judgments about the carrying values of assets and liabilities as well as identifying and assessing the accounting treatment with respect to commitments and contingencies. Our actual results may materially differ from these estimates. These critical accounting policies and estimates should be read in conjunction with our consolidated financial statements as filed in this Annual Report on Form 10-K.

Listed below are the accounting policies we believe are critical to our financial statements due to the degree of uncertainty regarding the estimates or assumptions involved, and that we believe are critical to the understanding of our operations.

Impairment of Long-Lived Assets

We periodically evaluate whether current events or circumstances indicate that the carrying value of our long-lived assets, including property, plant and equipment, mineral reserves or mineral rights, goodwill, trade names and customer relationships, may not be recoverable. If such circumstances are determined to exist, an estimate of future

cash flows produced by the long-lived assets, or the appropriate grouping of assets, is compared to the carrying value to determine whether an impairment exists. If an asset is determined to be impaired, the loss is measured based on quoted market prices in active markets, if available. If quoted market prices are not available, the estimate of fair value is based on various valuation techniques, including a discounted value of estimated future cash flows. A detailed determination of the fair value may be carried forward from one year to the next if certain criteria have been met. We report an asset to be disposed of at the lower of its carrying value or its estimated net realizable value.

Factors we generally consider important in our evaluation and that could trigger an impairment review of the carrying value of long-lived assets include expected operating trends, significant changes in the way assets are used, underutilization of our tangible assets, discontinuance of certain products by us or by our customers, and significant negative industry or economic trends.

The recoverability of the carrying value of our development stage mineral properties is dependent upon the successful development, start-up and commercial production of our mineral deposits and related processing facilities. Our evaluation of mineral properties for potential impairment primarily includes assessing the existence or availability of required permits and evaluating changes in our mineral reserves, or the underlying estimates and assumptions, including estimated production costs. Assessing the economic feasibility requires certain estimates, including the prices of products to be produced and processing recovery rates, as well as operating and capital costs.

We review definite-lived intangible assets, such as our supply agreements and acquired technology, for impairment whenever events or changes in circumstances indicate that the carrying amount of a definite-lived intangible asset may not be recoverable from the estimated future cash flows expected to result from its use and eventual disposition. In cases where undiscounted expected future cash flows are less than the carrying value, an impairment loss is recognized equal to an amount by which the carrying value exceeds the fair value of the assets or asset groups.

The evaluation of goodwill or other intangible assets for possible impairment includes estimating fair value using one or a combination of valuation techniques, such as discounted cash flows or based on comparable companies or transactions. These valuations require us to make estimates and assumptions regarding future operating results, cash flows, changes in working capital and capital expenditures, selling prices, profitability, and the cost of capital. These judgments are particularly difficult given the recent industry environment and, although we believe its assumptions and estimates are reasonable, deviations from the assumptions and estimates could produce a materially different result.

Accounts Receivable and Allowance for Doubtful Accounts

Trade accounts receivable are recognized at their invoiced amounts and do not bear interest. Credit is extended based on evaluation of a customer's financial condition and, generally, collateral is not required. Accounts receivable are generally due between 30 and 60 days, and are stated at amounts due from customers net of an allowance for doubtful accounts. Accounts outstanding longer than the payment terms are considered past due. We determine our allowance by considering a number of factors, including the length of time trade accounts receivable are past due, our previous loss history, the customer's current ability to pay its obligation to us, and the condition of the general economy and the industry as a whole. Given the present industry environment in the oil and gas solutions segment, we may not have adequate warning of a potential credit and collection issue, and deviations from these estimates could produce additional credit losses. Ongoing credit evaluations are performed. We write-off accounts receivable when they are deemed uncollectible, and payments subsequently received on such receivables are credited to the allowance for doubtful accounts.

Equity Awards

We recognize stock based compensation expense using a fair value method. Fair value methods use a valuation model to theoretically value stock option grants even though they are not available for trading and are of longer duration. The Black-Scholes-Merton option-pricing model that we use includes the input of certain variables that are dependent on future expectations, including the expected lives of our options from grant date to exercise date, the volatility of our common stock trending price, and our expected dividend rate of zero. Our estimates of these variables are made for the purpose of using the valuation model to determine an expense for each reporting period and are not subsequently adjusted. We also estimate a forfeiture rate based on our historical experience, which

could change over time. We value our restricted stock units at the closing price of our stock as of the date of issuance.

Fair Value of Derivatives

We record derivative instruments used to hedge interest rate exposure on the variable-rate debt obligations at their fair values. Changes in the fair value of derivatives are recorded each period in current earnings or in other comprehensive income, depending on whether a derivative is designated as part of a hedging relationship and, if it is, depending on the type of hedging relationship. For cash flow hedges in which we are hedging the variability of cash flows related to a variable-rate liability, the effective portion of the gain or loss on the derivative instrument is reported in other comprehensive income in the periods during which earnings are impacted by the variability of the cash flows of the hedged item. The ineffective portion of all hedges is recognized in current period earnings. As interest expense is accrued on the debt obligation, amounts in accumulated other comprehensive income (loss) related to the interest rate swaps are reclassified into income to obtain a net cost on the debt obligation equal to the effective yield of the fixed rate of each swap. In the event that an interest rate swap is terminated prior to maturity, gains or losses in accumulated other comprehensive income (loss) remain deferred and are reclassified into earnings in the periods during which the hedged forecasted transaction affects earnings.

The fair values and effectiveness testing of our derivatives are based on prevailing market data and derived from proprietary models based on well recognized financial principles and reasonable estimates about relevant future market conditions including interest rates, counterparty risk, and credit risk. These assumptions could cause material changes in the fair value or effectiveness of our derivative instruments.

Taxes

Deferred taxes are provided on the liability method whereby deferred tax assets are recognized for deductible temporary differences and operating loss and tax credit carry-forwards and deferred tax liabilities are recognized for taxable temporary differences. This approach requires recognition of deferred tax liabilities and assets for the expected future tax consequences of events that have been included in the financial statements or tax returns. Under this method, deferred tax liabilities and assets are determined based upon the difference between the financial statement and tax basis of assets and liabilities using enacted tax rates in effect for the year in which the expenses are expected to reverse. Valuation allowances are provided if, based on the weight of available evidence, it is more likely than not that some or all of the deferred tax assets will not be realized.

We recognize a tax benefit associated with an uncertain tax position when, in our judgment, it is more likely than not that the position will be sustained upon examination by a taxing authority. For a tax position that meets the more-likely-than-not recognition threshold, we initially and subsequently measure the tax benefit as the largest amount that we judge to have a greater than 50% likelihood of being realized upon ultimate settlement with a taxing authority. The liability associated with unrecognized tax benefits is adjusted periodically due to changing circumstances, such as the progress of tax audits, case law developments and new or emerging legislation. Such adjustments are recognized entirely in the period in which they are identified. The effective tax rate includes the net impact of changes in the liability for unrecognized tax benefits and subsequent adjustments as considered appropriate by management.

We evaluate quarterly the realizability of our deferred tax assets by assessing the need for a valuation allowance and by adjusting the amount of such allowance, if necessary. The factors used to assess the likelihood of realization are our forecast of future taxable income in the appropriate jurisdiction to utilize the asset, and available tax planning strategies that could be implemented to realize the net deferred tax assets. Failure to achieve forecasted taxable income might affect the ultimate realization of the net deferred tax assets. Factors that may affect our ability to achieve sufficient forecasted taxable income include, but are not limited to, the following: a decline in sales or margins, increased competition or loss of market share.

In addition, we operate within multiple taxing jurisdictions and are subject to audit in these jurisdictions. These audits can involve complex issues, which may require an extended time to resolve. We believe that adequate provisions for income taxes have been made for all years.

The largest permanent items in computing both our effective rate and taxable income are the deduction for statutory depletion and the manufacturers' deduction for manufacturers' products. The depletion deduction is dependent upon a mine-by-mine computation of both gross income from mining and taxable income.

ITEM 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

Interest Rate Swaps

Due to our variable-rate indebtedness, we are exposed to fluctuations in interest rates. We use interest rate swaps to manage a portion of this exposure. These derivative instruments are recorded on the balance sheet at their fair values. Changes in the fair value of derivatives are recorded each period in current earnings or in other comprehensive income, depending on whether a derivative is designated as part of a hedging relationship and, if it is, depending on the type of hedging relationship. For cash flow hedges in which we are hedging the variability of cash flows related to a variable-rate liability, the effective portion of the gain or loss on the derivative instrument is reported in other comprehensive income in the periods during which earnings are impacted by the variability of the cash flows of the hedged item. The ineffective portion of all hedges is recognized in current period earnings.

We do not use derivative financial instruments for trading or speculative purposes. By their nature, all such instruments involve risk, including the possibility that a loss may occur from the failure of another party to perform according to the terms of a contract (credit risk) or the possibility that future changes in market price may make a financial instrument less valuable or more onerous (market risk). As is customary for these types of instruments, we do not require collateral or other security from other parties to these instruments. In management's opinion, there is no significant risk of loss in the event of nonperformance of the counterparties to these financial instruments.

We formally designate and document instruments at inception that qualify for hedge accounting of underlying exposures in accordance with GAAP. We assess, both at inception and for each reporting period, whether the financial instruments used in hedging transactions are effective in offsetting changes in cash flows of the related underlying exposure.

As of December 31, 2016, the fair value of the interest rate swaps was a liability of \$14.4 million.

A hypothetical increase or decrease in interest rates by 1.0% would have had a maximum \$4.3 million impact on our interest expense in the year ended December 31, 2016.

Market Risk

We are exposed to various market risks, including changes in interest rates. Market risk related to interest rates is the potential loss arising from adverse changes in interest rates. We do not believe that inflation has a material impact on our financial position or results of operations during periods covered by the financial statements included in this Annual Report on Form 10-K.

Credit Risk

We are subject to risks of loss resulting from nonpayment or nonperformance by our customers. For the year ended December 31, 2016, our top two proppant customers, Halliburton and FTSI, accounted for approximately 42% of our sales. Approximately 45% of our accounts receivable balance at December 31, 2016, was outstanding from two customers. We examine the creditworthiness of third-party customers to whom we extend credit and manage our exposure to credit risk through credit analysis, credit approval, credit limits and monitoring procedures, and for certain transactions, we may request letters of credit, prepayments or guarantees, although collateral is generally not required.

ITEM 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA

The following consolidated financial statements are filed as part of this Annual Report on Form 10-K:

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Report of Independent Registered Public Accounting Firm

To the Board of Directors and Shareholders of Fairmount Santrol Holdings Inc.:

In our opinion, the accompanying consolidated balance sheets and the related consolidated statements of income (loss), comprehensive income (loss), equity and cash flows present fairly, in all material respects, the financial position of Fairmount Santrol Holdings Inc. and its subsidiaries at December 31, 2016 and 2015, and the results of their operations and their cash flows for each of the three years in the period ended December 31, 2016 in conformity with accounting principles generally accepted in the United States of America. In addition, in our opinion, the financial statement schedule listed in the accompanying index presents fairly, in all material respects, the information set forth therein when read in conjunction with the related consolidated financial statements. Also in our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2016, based on criteria established in *Internal Control - Integrated Framework* (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO). The Company's management is responsible for these financial statements and financial statement schedule, for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting, included in Management's Report on Internal Control over Financial Reporting under Item 9A. Our responsibility is to express opinions on these financial statements, on the financial statement schedule, and on the Company's internal control over financial reporting based on our audits which were integrated audits in 2016 and 2015. We conducted our audits in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audits to obtain reasonable assurance about whether the financial statements are free of material misstatement and whether effective internal control over financial reporting was maintained in all material respects. Our audits of the financial statements included examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements, assessing the accounting principles used and significant estimates made by management, and evaluating the overall financial statement presentation. 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.

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.

/s/ PricewaterhouseCoopers LLP
Cleveland, Ohio
March 9, 2017

Fairmount Santrol Holdings Inc. and Subsidiaries
Consolidated Statements of Income (Loss)
Years Ended December 31, 2016, 2015, and 2014

	Year Ended December 31,		
	2016	2015	2014
(in thousands, except per share amounts)			
Revenues	\$ 535,013	\$ 828,709	\$ 1,356,458
Cost of goods sold (excluding depreciation, depletion, and amortization shown separately)	459,714	608,845	851,454
Operating expenses			
Selling, general and administrative expenses	79,140	85,191	130,798
Depreciation, depletion and amortization expense	72,276	66,754	59,379
Goodwill and other asset impairments	93,148	87,476	-
Restructuring charges	1,155	9,221	-
Other operating expense	8,899	1,357	3,163
Income (loss) from operations	(179,319)	(30,135)	311,664
Interest expense, net	65,367	62,242	60,842
Gain on repurchase of debt, net	(5,110)	-	-
Other non-operating expense (income)	(10)	1,492	2,786
Income (loss) before provision for income taxes	(239,566)	(93,869)	248,036
Provision (benefit) for income taxes	(99,441)	(1,939)	77,413
Net income (loss)	(140,125)	(91,930)	170,623
Less: Net income attributable to the non-controlling interest	67	205	173
Net income (loss) attributable to Fairmount Santrol Holdings Inc.	\$ (140,192)	\$ (92,135)	\$ 170,450
Earnings (loss) per share			
Basic	\$ (0.78)	\$ (0.57)	\$ 1.08
Diluted	\$ (0.78)	\$ (0.57)	\$ 1.03
Weighted average number of shares outstanding			
Basic	179,429	161,297	157,950
Diluted	179,429	161,297	166,277

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

Fairmount Santrol Holdings Inc. and Subsidiaries
Consolidated Statements of Comprehensive Income (Loss)
Years Ended December 31, 2016, 2015, and 2014

	Year Ended December 31,		
	2016	2015	2014
	(in thousands)		
Net income (loss)	\$ (140,125)	\$ (91,930)	\$ 170,623
Other comprehensive loss, before tax			
Foreign currency translation adjustment	(774)	(5,051)	(2,353)
Pension obligations	425	222	(949)
Change in fair value of derivative agreements	(3,018)	(1,836)	(5,971)
Total other comprehensive loss, before tax	(3,367)	(6,665)	(9,273)
Benefit from income taxes related to items of other comprehensive income (loss)	(2,058)	(1,780)	(4,151)
Comprehensive income (loss), net of tax	(141,434)	(96,815)	165,501
Comprehensive income attributable to the non-controlling interest	67	205	173
Comprehensive income (loss) attributable to Fairmount Santrol Holdings Inc.	\$ (141,501)	\$ (97,020)	\$ 165,328

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

Fairmount Santrol Holdings Inc. and Subsidiaries
Consolidated Balance Sheets
December 31, 2016 and 2015

	December 31, 2016	December 31, 2015
	(in thousands)	
Assets		
Current assets		
Cash and cash equivalents	\$ 194,069	\$ 171,486
Accounts receivable, net of allowance for doubtful accounts of \$3,055 and \$2,470 at December 31, 2016 and December 31, 2015, respectively	78,942	73,566
Inventories, net	52,650	70,494
Prepaid expenses and other assets	7,065	13,404
Refundable income taxes	21,077	26,506
Current assets classified as held-for-sale (includes cash, accounts receivable, inventories, and property, plant, and equipment)	-	4,218
Total current assets	353,803	359,674
Property, plant and equipment, net	727,735	870,997
Deferred income taxes	1,244	834
Goodwill	15,301	15,301
Intangibles, net	95,341	96,482
Other assets	9,486	10,961
Total assets	\$ 1,202,910	\$ 1,354,249
Liabilities and Equity		
Current liabilities		
Current portion of long-term debt	\$ 10,707	\$ 17,385
Accounts payable	37,263	40,421
Accrued expenses	26,185	26,785
Current liabilities directly related to current assets classified as held-for-sale (includes accounts payable and accrued expenses)	-	934
Total current liabilities	74,155	85,525
Long-term debt	832,306	1,205,721
Deferred income taxes	7,057	89,569
Other long-term liabilities	38,272	33,802
Total liabilities	951,790	1,414,617
Commitments and contingent liabilities (Note 18)		
Equity		
Preferred stock: \$0.01 par value, 100,000 authorized shares Shares outstanding: 0 at December 31, 2016 and December 31, 2015	-	-
Common stock: \$0.01 par value, 1,850,000 authorized shares Shares outstanding: 223,601 and 161,433 at December 31, 2016 and December 31, 2015, respectively	2,422	2,391
Additional paid-in capital	297,649	776,705
Retained earnings	264,852	405,044
Accumulated other comprehensive loss	(19,002)	(17,693)
Total equity attributable to Fairmount Santrol Holdings Inc. before treasury stock	545,921	1,166,447
Less: Treasury stock at cost Shares in treasury: 18,666 and 77,765 at December 31, 2016 and December 31, 2015, respectively	(294,874)	(1,227,663)
Total equity (deficit) attributable to Fairmount Santrol Holdings Inc.	251,047	(61,216)
Non-controlling interest	73	848
Total equity (deficit)	251,120	(60,368)
Total liabilities and equity	\$ 1,202,910	\$ 1,354,249

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

Fairmount Santrol Holdings Inc. and Subsidiaries
Consolidated Statements of Equity
Years Ended December 31, 2016, 2015, and 2014

	Equity (deficit) attributable to Fairmount Santrol Holdings Inc.							Non-Controlling		
	Common Stock	Common Stock Units	Additional Paid-in Capital	Retained Earnings	Other Comprehensive Income (Loss)	Treasury Stock	Treasury Stock Units	Subtotal	Interest	Total
	(in thousands)									
Balances at December 31, 2013	\$ 2,341	156,462	\$ 733,088	\$ 326,729	\$ (3,536)	\$ (1,227,001)	77,706	\$ (168,379)	\$ 3,021	\$ (165,358)
Purchase of treasury stock	-	(59)	-	-	-	(662)	59	(662)	-	(662)
Stock options exercised	46	4,510	6,494	-	-	-	-	6,540	-	6,540
Stock compensation expense	-	-	16,571	-	-	-	-	16,571	-	16,571
Tax effect of stock options exercised	-	-	15,735	-	-	-	-	15,735	-	15,735
Transactions with non-controlling interest	-	-	-	-	-	-	-	-	(702)	(702)
Net income	-	-	-	170,450	-	-	-	170,450	173	170,623
Other comprehensive loss	-	-	-	-	(9,273)	-	-	(9,273)	-	(9,273)
Balances at December 31, 2014	\$ 2,387	160,913	\$ 771,888	\$ 497,179	\$ (12,809)	\$ (1,227,663)	77,765	\$ 30,982	\$ 2,492	\$ 33,474
Stock options exercised	4	520	1,763	-	-	-	-	1,767	-	1,767
Stock compensation expense	-	-	4,525	-	-	-	-	4,525	-	4,525
Tax effect of stock options exercised	-	-	(1,471)	-	-	-	-	(1,471)	-	(1,471)
Transactions with non-controlling interest	-	-	-	-	-	-	-	-	(1,849)	(1,849)
Net income (loss)	-	-	-	(92,135)	-	-	-	(92,135)	205	(91,930)
Other comprehensive loss	-	-	-	-	(4,884)	-	-	(4,884)	-	(4,884)
Balances at December 31, 2015	\$ 2,391	161,433	\$ 776,705	\$ 405,044	\$ (17,693)	\$ (1,227,663)	77,765	\$ (61,216)	\$ 848	\$ (60,368)
Re-issuance of treasury stock	-	59,000	(493,233)	-	-	932,789	(59,000)	439,556	-	439,556
Stock options exercised	31	3,168	6,407	-	-	-	(99)	6,438	-	6,438
Stock compensation expense	-	-	8,870	-	-	-	-	8,870	-	8,870
Tax effect of stock options exercised, forfeited, or expired	-	-	(1,100)	-	-	-	-	(1,100)	-	(1,100)
Transactions with non-controlling interest	-	-	-	-	-	-	-	-	(842)	(842)
Net income (loss)	-	-	-	(140,192)	-	-	-	(140,192)	67	(140,125)
Other comprehensive loss	-	-	-	-	(1,309)	-	-	(1,309)	-	(1,309)
Balances at December 31, 2016	\$ 2,422	223,601	\$ 297,649	\$ 264,852	\$ (19,002)	\$ (294,874)	18,666	\$ 251,047	\$ 73	\$ 251,120

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

Fairmount Santrol Holdings Inc. and Subsidiaries
Consolidated Statements of Cash Flows
Years Ended December 31, 2016, 2015, and 2014

	Year Ended December 31,		
	2016	2015	2014
	(in thousands)		
Net income (loss)	\$ (140,125)	\$ (91,930)	\$ 170,623
Adjustments to reconcile net income (loss) to net cash provided by (used in) operating activities:			
Depreciation and depletion	67,614	62,218	54,111
Amortization	11,641	11,416	11,991
Reserve for doubtful accounts	1,851	1,968	3,605
Write-off of deferred financing costs	2,618	864	-
Gain on repurchase of debt, gross	(8,178)	-	-
Goodwill and other asset impairments	93,148	76,038	200
Non-cash restructuring charges	-	1,162	-
Inventory write-downs and reserves	10,302	1,591	-
Loss on sale of fixed assets	420	8,712	854
Unrealized loss on interest rate swaps	-	49	208
Deferred income taxes and taxes payable	(82,732)	20,983	37,810
Refundable income taxes	5,428	(26,506)	-
Stock compensation expense	8,870	4,525	16,571
Change in operating assets and liabilities:			
Accounts receivable	(4,385)	127,718	(70,011)
Inventories	7,543	59,527	(13,264)
Prepaid expenses and other assets	11,496	23,234	(23,454)
Accounts payable	4,196	(38,698)	(1,456)
Accrued expenses	3,701	(6,877)	17,488
Net cash provided by (used in) operating activities	(6,592)	235,994	205,276
Cash flows from investing activities			
Proceeds from sale of fixed assets	5,670	-	5,160
Capital expenditures and stripping costs	(30,597)	(113,750)	(143,491)
Earnout payments	(1,287)	-	-
Other investing activities	-	(250)	-
Net cash used in investing activities	(26,214)	(114,000)	(138,331)
Cash flows from financing activities			
Proceeds from issuance of term loans	-	-	41,000
Payments on long-term debt	(10,840)	(13,532)	(12,512)
Prepayments on term loans	(155,926)	-	-
Repurchase of term loans	(216,000)	-	-
Fees for repurchase of term loans	(450)	-	-
Payments on capital leases and other long-term debt	(5,947)	(6,975)	(4,830)
Proceeds from borrowing on revolving credit facility	-	-	32,267
Payments on revolving credit facility	-	-	(73,000)
Settlement of contingent consideration	-	-	(9,600)
Proceeds from option exercises	6,438	1,767	6,540
Proceeds from primary stock offering	439,556	-	-
Purchase of treasury stock	-	-	(662)
Tax effect of stock options exercised, forfeited, or expired	(1,100)	(1,472)	15,735
Transactions with non-controlling interest	(842)	(301)	(702)
Other financing activities	-	(4,578)	(1,913)
Net cash provided by (used in) financing activities	54,889	(25,091)	(7,677)
Change in cash and cash equivalents related to assets classified as held-for-sale	1,376	(1,376)	-
Foreign currency adjustment	(876)	(964)	(160)
Increase in cash and cash equivalents	22,583	94,563	59,108
Cash and cash equivalents:			
Beginning of period	171,486	76,923	17,815
End of period	<u>\$ 194,069</u>	<u>\$ 171,486</u>	<u>\$ 76,923</u>
Supplemental disclosure of cash flow information:			
Interest paid	\$ 60,833	\$ 61,395	\$ 62,167
Income taxes paid (refunded)	(21,311)	(19,898)	32,203
Non-cash investing activities:			
Equipment purchased under capital leases	\$ -	\$ 4,552	\$ 6,558

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

Fairmount Santrol Holdings Inc. and Subsidiaries
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1. Organization

Fairmount Santrol Holdings Inc. and its consolidated subsidiaries (collectively, the “Company”) is a supplier of proppants and sand products. The Company is organized into two segments: Proppant Solutions and Industrial & Recreational Products. This segmentation is based on the end markets served, management structure, and the financial information that is reviewed by the chief operating decision maker in deciding how to allocate resources and assess performance.

The Proppant Solutions business serves the oil and gas markets in the United States, Canada, Argentina, Mexico, China, northern Europe, and the United Arab Emirates, providing raw and coated proppants primarily for use in hydraulic fracturing. The raw sand and substrate for coated sand generally consists of high-purity silica sands produced at facilities in Illinois, Wisconsin, and Texas.

The Industrial & Recreational Products (“I&R”) business provides raw and coated sands to the foundry, building products, glass, turf and landscape, and filtration industries. Raw sand for the I&R business is produced at facilities in Ohio, Wisconsin, and Illinois.

In addition to its wholly-owned subsidiaries, the Company owns 90% of a holding company, Technimat LLC, which owns 70% of Santrol (Yixing) Proppant Co., a manufacturer of resin-based proppants located in China. The non-controlling interests in both entities are presented as “non-controlling interest” on the balance sheet.

2. Summary of Significant Accounting Policies

Principal of Consolidation

The consolidated financial statements include the accounts of Fairmount Santrol Holdings Inc. and its wholly-owned and majority-owned subsidiaries. All significant intercompany balances and transactions have been eliminated in consolidation.

Use of Estimates

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

Revenue Recognition

Revenue is recognized when delivery of products has occurred, the selling price is fixed or determinable, collectability is reasonably assured and title and risk of loss have transferred to the customer. This generally occurs when products leave a distribution terminal or, in the case of direct shipments, when products leave a production facility. In a majority of cases, transportation costs to move product from a production facility to a storage terminal are borne by the Company and capitalized into the cost of inventory. These costs are included in the cost of sales as the product is sold. The Company derives its revenue by mining and processing minerals that its customers purchase for various uses. Its net sales are primarily a function of the price per ton realized and the volumes sold. In a number of instances, its net sales also include a separate charge for transportation services it provides to its customers.

In the Proppant Solutions segment, the Company primarily sells its products under market rate contracts with terms typically ranging from two to ten years. The Company invoices the majority of its customers on a per shipment basis when the customer takes possession of the product.

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Cash and Cash Equivalents

The Company considers all highly liquid debt instruments purchased with a maturity of three months or less to be cash equivalents. At various times, the Company maintains funds on deposit at its banks in excess of FDIC insurance limits.

Accounts Receivable

Trade accounts receivable are stated at the amount management expects to collect, and do not bear interest. Management provides for uncollectible amounts based on its assessment of the current status of individual accounts. Accounts receivable are net of allowance for doubtful accounts of \$3,055 and \$2,470 as of December 31, 2016 and 2015, respectively.

Inventories

Inventories are stated at the lower of cost or market. Certain subsidiaries determine cost using the last-in, first-out (LIFO) method. If the first-in, first-out (FIFO) method of inventory accounting had been used, inventories would have been higher by \$1,256 and \$2,912 at December 31, 2016 and 2015, respectively.

LIFO inventories comprise 21% and 18% of inventories reflected in the accompanying Consolidated Balance Sheets as of December 31, 2016 and 2015, respectively. The cost of inventories of all other subsidiaries is determined using the FIFO method. In the years ended December 31, 2016 and 2015, respectively, the Company recorded \$10,302 and \$1,591 of adjustments to increase the inventory reserve to recognize the decline in value of work-in-process and finished goods inventory, which are recorded in cost of goods sold. In the year ended December 31, 2014, the Company recorded a write-down of \$908 of certain inventory to recognize a permanent decline in the value of the inventory, which is included in other operating expense.

Property, Plant, and Equipment

Property, plant, and equipment are stated at cost. Expenditures, including interest, for property, plant, and equipment and items that substantially increase the useful lives of existing assets are capitalized, while expenditures for repairs and maintenance are expensed as incurred.

Depreciation on property, plant, and equipment is computed on a straight-line basis over the estimated useful lives of the related assets. Amortization of leasehold improvements is computed using the straight-line method over the shorter of the remaining lease term or the estimated useful lives of the improvements. Depletion expense calculated for depletable land and mineral rights is based on cost multiplied by a depletion factor. The depletion factor varies based on production and other factors, but is generally equal to annual tons mined divided by total estimated remaining reserves for the mine.

The estimated service lives of property and equipment are principally as follows:

Land improvements	10-40 years
Machinery and equipment	3-20 years
Buildings and improvements	10-40 years
Furniture, fixtures, and other	3-10 years

Construction in progress is stated at cost, which includes the cost of construction and other direct costs attributable to the construction. No provision for depreciation is made on construction in progress until such time as the relevant assets are completed and put into use. Construction in progress at December 31, 2016, represents machinery and facilities under installation.

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The Company capitalizes interest cost incurred on funds used to construct property, plant, and equipment. The capitalized interest is recorded as part of the asset to which it relates and is amortized over the asset's estimated useful life. Interest cost capitalized was \$1,380 and \$4,903 in 2016 and 2015, respectively.

Depreciation and depletion expense was \$67,614, \$62,218, and \$54,111 in the years ended December 31, 2016, 2015, and 2014, respectively.

The Company reviews property, plant, and equipment for impairment whenever events or changes in circumstances indicate that the carrying amount of property, plant, and equipment may not be recoverable from the estimated future cash flows expected to result from its use and eventual disposition. In cases where undiscounted expected future cash flows are less than the carrying value, an impairment loss is recognized equal to an amount by which the carrying value exceeds the fair value of assets or asset groups. The factors considered by management in performing this assessment include current operating results, trends, and prospects, as well as the effects of obsolescence, demand, competition, and other economic factors. See Note 5 for further detail.

Deferred Financing Costs

Deferred financing costs are amortized over the terms of the related debt obligations and are included in long-term debt. In connection with the amendment to the Revolving Credit Facility in 2015, the Company wrote off \$864 of costs that were previously capitalized. In connection with the repurchase of portions of the Company's debt in 2016, the Company wrote off \$2,618 of deferred financing costs that were previously capitalized. See Note 9 for further detail.

The following table presented deferred financing costs as of December 31, 2016 and 2015:

	December 31, 2016	December 31, 2015
Deferred financing costs	\$ 39,924	\$ 42,541
Accumulated amortization	(29,530)	(24,145)
Deferred financing costs, net	\$ 10,394	\$ 18,396

Goodwill and Intangible Assets

Goodwill and indefinite-lived intangible assets are reviewed for impairment by applying a fair-value based test on an annual basis or more frequently if circumstances indicate that impairment may have occurred. The Company evaluates qualitative factors such as economic performance, industry conditions, and other factors to determine if it is more-likely-than-not that the fair value of the reporting unit is less than its carrying amount. The first step of the goodwill impairment test, used to identify potential impairment, compares the fair value of a reporting unit with its carrying amount, including goodwill. If the carrying amount of a reporting unit exceeds its fair value, an indication of goodwill impairment exists. The second step of the goodwill impairment test is performed to measure the amount of the impairment loss, if any. If the carrying amount of goodwill exceeds its implied fair value, an impairment loss is recognized equal to the excess. The implied fair value of goodwill is determined by allocating the fair value of the reporting unit in a manner similar to a purchase price allocation, and the residual fair value after this allocation is the implied fair value of the reporting unit goodwill.

The Company reviews definite-lived intangible assets for impairment whenever events or changes in circumstances indicate that the carrying amount of a definite-lived intangible asset may not be recoverable from the estimated future cash flows expected to result from its use and eventual disposition. In cases where undiscounted expected future cash flows are less than the carrying value, an impairment loss is recognized equal to an amount by which the carrying value exceeds the fair value of the assets or asset groups.

The evaluation of goodwill or other intangible assets for possible impairment includes estimating fair value using one or a combination of valuation techniques, such as discounted cash flows or based on comparable companies or transactions. These valuations require the Company to make estimates and assumptions regarding future operating

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results, cash flows, changes in working capital and capital expenditures, selling prices, profitability, and the cost of capital. Although the Company believes its assumptions and estimates are reasonable, deviations from the assumptions and estimates could produce a materially different result.

Earnings per Share

Basic and diluted earnings per share is presented for net income attributable to Fairmount Santrol Holdings Inc. Basic earnings per share is computed by dividing income available to Fairmount Santrol Holdings Inc. common stockholders by the weighted-average number of outstanding common shares for the period. Diluted earnings per share is computed by increasing the weighted-average number of outstanding common shares to include the additional common shares that would be outstanding after exercise of outstanding stock options and restricted stock units. Potential common shares in the diluted earnings per share calculation are excluded to the extent that they would be anti-dilutive.

Derivatives and Hedging Activities

Due to its variable-rate indebtedness, the Company is exposed to fluctuations in interest rates. The Company uses interest rate swaps to manage this exposure. These derivative instruments are recorded on the balance sheet at their fair values. Changes in the fair value of derivatives are recorded each period in current earnings or in other comprehensive income, depending on whether a derivative is designated as part of a hedging relationship and, if it is, depending on the type of hedging relationship. For cash flow hedges in which the Company is hedging the variability of cash flows related to a variable-rate liability, the effective portion of the gain or loss on the derivative instrument is reported in other comprehensive income in the periods during which earnings are impacted by the variability of the cash flows of the hedged item. The ineffective portion of all hedges is recognized in current period earnings. As interest expense is accrued on the debt obligation, amounts in accumulated other comprehensive income (loss) related to the interest rate swaps are reclassified into income to obtain a net cost on the debt obligation equal to the effective yield of the fixed rate of each swap. In the event that an interest rate swap is terminated prior to maturity, gains or losses in accumulated other comprehensive income (loss) remain deferred and are reclassified into earnings in the periods during which the hedged forecasted transaction affects earnings.

The Company formally designates and documents instruments at inception that qualify for hedge accounting of underlying exposures in accordance with GAAP. Both at inception and for each reporting period, the Company assesses whether the financial instruments used in hedging transactions are effective in offsetting changes in cash flows of the related underlying exposure.

Foreign Currency Translation

Assets and liabilities of all foreign operations are translated at the rate of exchange in effect on the balance sheet date; income and expenses are translated at the average rates of exchange prevailing during the year. The related translation adjustments are reflected as accumulated other comprehensive income (loss) in equity.

Concentration of Labor

Approximately 18% of the Company's domestic labor force is covered under two union agreements. These agreements were successfully renegotiated during 2016 and expire in 2019.

Concentration of Credit Risk

At December 31, 2016, the Company had two customers whose receivable balances exceed 10% of total receivables. Approximately, 34% and 11% of the accounts receivable balance were from these two customers, respectively. At December 31, 2015, the Company had one customer whose receivable balance exceeded 10% of total receivables. Approximately, 35% of the Company's accounts receivable balance was from this customer.

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Income Taxes

The Company uses the asset and liability method to account for deferred income taxes. Deferred tax assets and liabilities are recognized for the anticipated future tax consequences attributable to differences between financial statement amounts and their respective tax bases. Management reviews the Company's deferred tax assets to determine whether their value can be realized based upon available evidence. A valuation allowance is established if management believes it is more likely than not that some portion of the deferred tax assets will not be realized.

Changes in valuation allowances from period to period are included in the Company's tax provision in the period of change.

The Company recognizes a tax benefit associated with an uncertain tax position when the tax position is more-likely-than-not to be sustained upon examination by taxing authorities. The amount recognized is measured as the amount of benefit that is greater than 50% likely of being realized upon ultimate settlement. The Company recognizes interest and penalties accrued related to unrecognized tax uncertainties in income tax expense.

Asset Retirement Obligation

The Company estimates the future cost of dismantling, restoring, and reclaiming operating excavation sites and related facilities in accordance with federal, state, and local regulatory requirements. The Company records the initial estimated present value of reclamation costs as an asset retirement obligation and increases the carrying amount of the related asset by a corresponding amount. The Company allocates reclamation costs to expense over the life of the related assets and adjusts the related liability for changes resulting from the passage of time and revisions to either the timing or amount of the original present value estimate. If the asset retirement obligation is settled for more or less than the carrying amount of the liability, a loss or gain will be recognized, respectively.

Research and Development ("R&D")

The Company's research and development expenses consist of personnel and other direct and indirect costs for internally-funded project development. Total expenses for R&D for the years ended December 31, 2016, 2015, and 2014 were \$3,703, \$5,036, and \$6,286, respectively. Total research and development expenditures represented 0.69%, 0.61%, and 0.46% of revenues in 2016, 2015, and 2014, respectively.

Change in Classification

For the year ended December 31, 2016, the Company changed the classification of certain operating expenses on the Consolidated Statements of Income (Loss). Previously, the Company classified expenses incurred related to the downturn in the proppant market as "restructuring and other charges." The Company now further classifies these types of expenses between asset impairments and restructuring charges. All periods presented have been reclassified accordingly.

In the three months ended December 31, 2016, the Company changed the presentation of non-cash stock compensation expense on the Consolidated Statements of Income (Loss). The expenses were previously separately stated but are now included in selling, general, and administrative expenses. All periods presented have been reclassified accordingly.

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Accumulated Other Comprehensive Income (Loss)

Accumulated other comprehensive income (loss) is a separate line within equity that reports the Company's cumulative income that has not been reported as part of net income. Items that are included in this line are the income or loss from foreign currency translation, actuarial gains and losses and prior service cost related to pension liabilities, and the unrealized gains and losses on certain investments or hedges, net of taxes. The components of accumulated other comprehensive income (loss) attributable to Fairmount Santrol Holdings Inc. at December 31, 2016 and 2015 were as follows:

	December 31, 2016		
	Gross	Tax Effect	Net Amount
Foreign currency translation	\$ (10,804)	\$ 2,533	\$ (8,271)
Additional pension liability	(3,589)	1,291	(2,298)
Unrealized gain (loss) on interest rate hedges	(13,146)	4,713	(8,433)
	<u>\$ (27,539)</u>	<u>\$ 8,537</u>	<u>\$ (19,002)</u>

	December 31, 2015		
	Gross	Tax Effect	Net Amount
Foreign currency translation	\$ (10,030)	\$ 1,318	\$ (8,712)
Additional pension liability	(4,014)	1,464	(2,550)
Unrealized gain (loss) on interest rate hedges	(10,128)	3,697	(6,431)
	<u>\$ (24,172)</u>	<u>\$ 6,479</u>	<u>\$ (17,693)</u>

The following table presents the changes in accumulated other comprehensive income by component for the year ended December 31, 2016:

	Year Ended December 31, 2016			
	Foreign currency translation	Additional pension liability	Unrealized gain (loss) on interest rate hedges	Total
Beginning balance	\$ (8,712)	\$ (2,550)	\$ (6,431)	\$ (17,693)
Other comprehensive income (loss) before reclassifications	441	(14)	(6,238)	(5,811)
Amounts reclassified from accumulated other comprehensive income (loss)	-	266	4,236	4,502
Ending balance	<u>\$ (8,271)</u>	<u>\$ (2,298)</u>	<u>\$ (8,433)</u>	<u>\$ (19,002)</u>

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The following table presents the reclassifications out of accumulated other comprehensive income during the year ended December 31, 2016:

Details about accumulated other comprehensive income	Amount reclassified from accumulated other comprehensive income	Affected line item on the statement of income
Change in fair value of derivative swap agreements		
Interest rate hedging contracts	\$ 6,522	Interest expense
Tax effect	(2,286)	Tax expense (benefit)
	\$ 4,236	Net of tax
Amortization of pension obligations		
Prior service cost	\$ -	Cost of sales
Actuarial losses	265	Cost of sales
Curtailement	182	Cost of sales
	447	Total before tax
Tax effect	(181)	Tax expense
	266	Net of tax
Total reclassifications for the period	\$ 4,502	Net of tax

3. Recent Accounting Pronouncements

In August 2014, the Financial Accounting Standards Board (“FASB”) issued Accounting Standards Update (“ASU”) 2014-15, which requires an entity’s management to evaluate conditions or events, considered in the aggregate, that raise substantial doubt about the entity’s ability to continue as a going concern within one year after the date that the financial statements are issued or within one year after the date that the financial statements are available to be issued. The ASU is effective for the annual period ending after December 15, 2016 and for annual and interim periods thereafter. Accordingly, the Company incorporated this guidance into its internal control over financial reporting beginning with this Annual Report on Form 10-K for the year ended December 31, 2016.

In February 2016, the FASB issued Accounting Standards Update No. 2016-02 – *Leases* (ASC 842), which sets out the principles for the recognition, measurement, presentation, and disclosure of leases for both parties to a contract (i.e. lessees and lessors). The new standard requires lessees to apply a dual approach, classifying leases as either finance or operating leases based on the principle of whether or not the lease is effectively a financed purchase by the lessee. This classification will determine whether lease expense is recognized based on an effective interest method or on a straight line basis over the term of the lease, respectively. A lessee is also required to record a right-of-use asset and a lease liability for all leases with a term of greater than 12 months regardless of their classification. Leases with a term of 12 months or less will be accounted for similar to existing guidance for operating leases today. The new standard requires lessors to account for leases using an approach that is substantially equivalent to existing guidance for sales-type leases, direct financing leases and operating leases. The Update is expected to impact the Company’s consolidated financial statements as the Company has certain operating and land lease arrangements for which it is the lessee. ASC 842 supersedes the previous leases standard, ASC 840 – *Leases*. The standard is effective on January 1, 2019, with early adoption permitted. The Company is in the process of evaluating the impact of this new guidance on its financial statements and disclosures.

In March 2016, the FASB issued ASU No. 2016-09 – *Compensation – Stock Compensation* (Topic 718), which provides guidance on simplified accounting for and presentation of share-based payment transactions, including income tax consequences, minimum tax withholding requirements, forfeitures, classification of awards as either equity or liabilities, and classification on the statement of cash flows. The ASU requires all tax effects of share-based payments to be recorded through the income statement, windfall tax benefits to be recorded when the benefit arises, and all share-based payment tax-related cash flows to be reported as operating activities in the statement of cash flows. Regarding tax withholding requirements, the ASU allows entities to withhold an amount up to the

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employees' maximum individual tax rates without classifying the award as a liability. The ASU also permits entities to make an accounting policy election for the impact of forfeitures on expense recognition, either recognized when forfeitures are estimated or when forfeitures occur. The ASU is expected to impact the Company's financial statements and disclosures as the Company makes share-based payments to its employees. The ASU is effective beginning January 1, 2017, with early adoption permitted. The Company has elected to forgo early adoption and will be implementing and reporting according to this new guidance beginning with its Quarterly Report on Form 10-Q for the period ending March 31, 2017.

In April, May, and December 2016, the FASB issued ASU No. 2016-10 – *Revenue from Contracts with Customers – Identifying Performance Obligations and Licensing*, ASU No. 2016-11 – *Revenue Recognition and Derivatives and Hedging – Recession of SEC Guidance*, ASU No. 2016-12 – *Revenue from Contracts with Customers – Narrow-Scope Improvements and Practical Expedients*, and ASU No. 2016-20 – *Technical Corrections and Improvements to Topic 606, Revenue from Contracts with Customers*. These ASU's each affect the guidance of the new revenue recognition standard in ASU No. 2014-09 – *Revenue from Contracts with Customers* and related subsequent ASUs. This guidance is effective beginning January 1, 2018. The Company is in the process of reviewing its various customer contracts in both of its business segments with a combination of applicable sales, legal, and accounting personnel in order to accomplish the following:

- Identify separate performance obligations of the contract;
- Determine the transaction price of the contract;
- Allocate the transaction price to the performance obligations; and
- Recognize revenue when/as the performance obligation is satisfied.

This review is in discussion and data-gathering stages and, therefore, the effect of the new guidance on the Company's financial statements and disclosures is not yet readily determinable.

In August 2016, the FASB issued ASU No. 2016-15 – *Statement of Cash Flows – Classifications of Certain Cash Receipts and Cash Payments* (Topic 230). The ASU reduces diversity in the presentation and classification of certain cash receipts and payments in the statement of cash flows, namely debt prepayment or debt extinguishment costs; settlement of zero-coupon debt instruments or other debt instruments with coupon interest rates that are insignificant in relation to the effective interest rate of the borrowing; contingent consideration payments made after a business combination; proceeds from the settlement of insurance claims; proceeds from the settlement of corporate-owned life insurance policies ("COLIs") [including bank-owned life insurance policies ("BOLIs")]; distributions received from equity method investees; beneficial interests in securitization transactions; and separately identifiable cash flows and application of the predominance principle. The guidance is effective beginning January 1, 2018, with early adoption permitted. The guidance is required to be applied retrospectively for periods presented. The Company has elected early adoption of this ASU and, accordingly, has applied this guidance to its Consolidated Statements of Cash Flows in this Annual Report on Form 10-K.

In October 2016, the FASB issued ASU No. 2016-16 – *Income Taxes (Topic 740) – Intra-Entity Transfers of Assets other than Inventory*. The ASU indicates that an entity should recognize the income tax consequences of an intra-entity transfer of assets other than inventory when the transfer occurs. This ASU also eliminates the exception for an intra-entity transfer of an asset other than inventory. The guidance is effective beginning January 1, 2018, with early adoption permitted. The guidance is required to be applied on a modified retrospective basis through a cumulative-effect adjustment directly to retained earnings as of the beginning of the period of adoption. The Company is in the process of evaluating the impact of this new guidance on its financial statements and disclosures.

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4. Inventories

At December 31, 2016 and 2015, inventories consisted of the following:

	December 31, 2016	December 31, 2015
Raw materials	\$ 7,465	\$ 10,145
Work-in-process	12,681	14,613
Finished goods	33,760	48,648
	53,906	73,406
Less: LIFO reserve	(1,256)	(2,912)
Inventories, net	\$ 52,650	\$ 70,494

5. Property, Plant, and Equipment

At December 31, 2016 and 2015, property, plant, and equipment consisted of the following:

	December 31, 2016	December 31, 2015
Land and improvements	\$ 86,298	\$ 82,966
Mineral reserves and mine development	253,766	323,691
Machinery and equipment	596,962	575,034
Buildings and improvements	161,057	167,491
Furniture, fixtures, and other	3,440	3,609
Construction in progress	6,748	41,347
	1,108,271	1,194,138
Accumulated depletion and depreciation	(380,536)	(323,141)
Property, plant, and equipment, net	\$ 727,735	\$ 870,997

Under *ASC 360 Property, Plant, and Equipment*, the Company is required to evaluate the recoverability of the carrying amount of its long-lived assets whenever events or changes in circumstances indicate that the carrying amount of the asset may not be recoverable. Based on the continuing adverse business conditions and the idling of certain assets, the Company evaluated certain of its asset groups that contained mineral reserves and other long-lived assets contained in the Proppant Solutions segment and concluded that the carrying amounts of those assets were not recoverable. Fair value was determined by prices obtained from third parties for the assets and from estimating the net present value of the future cash flows over the life of the assets. Using Level 3 inputs of the fair value hierarchy, critical assumptions for these valuations included future selling prices of products, future operating costs, and the cost of capital. The Company incurred \$93,148, \$18,230, and \$0 of such asset impairments in the years ended December 31, 2016, 2015, and 2014, respectively. These impairments are recorded as asset impairments in operating expenses in the Consolidated Statements of Income (Loss).

6. Accrued Expenses

At December 31, 2016 and 2015, accrued expenses consisted of the following:

	December 31, 2016	December 31, 2015
Accrued payroll and fringe benefits	\$ 10,554	\$ 13,285
Contingent consideration	2,507	-
Accrued income taxes	421	1,042
Accrued real estate taxes	4,821	5,901
Other accrued expenses	7,882	6,557
Accrued expenses	\$ 26,185	\$ 26,785

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7. Other Long-Term Liabilities

At December 31, 2016 and 2015, other long-term liabilities consisted of the following:

	December 31, 2016	December 31, 2015
Interest rate swaps	\$ 14,488	\$ 12,107
Accrued asset retirement obligations	5,249	4,288
Accrued compensation and benefits	11,579	11,752
Other	6,956	5,655
Other long-term liabilities	\$ 38,272	\$ 33,802

8. Goodwill and Other Intangible Assets

The following table summarizes the activity in goodwill for the years ended December 31, 2016 and 2015:

	Beginning Balance	Impairment	Currency Translation / Other	Ending Balance
Year Ended December 31, 2016:				
Proppant Solutions	\$ -	\$ -	\$ -	\$ -
Industrial & Recreational Products	15,301	-	-	15,301
Total goodwill	\$ 15,301	\$ -	\$ -	\$ 15,301
Year Ended December 31, 2015:				
Proppant Solutions	\$ 68,216	\$ (69,246)	\$ 1,030	\$ -
Industrial & Recreational Products	16,461	-	(1,160)	15,301
Total goodwill	\$ 84,677	\$ (69,246)	\$ (130)	\$ 15,301

Goodwill represents the excess of purchase price over the fair value of net assets acquired. The Company evaluates goodwill on an annual basis in the fourth quarter and also when management believes indicators of impairment exist. The Company performed a qualitative assessment of the I&R segment as of October 31, 2017 (the Company's annual valuation date) and determined the fair value of this segment was, more likely than not, greater than its carrying value. Based on the Company's assessment in 2015, the Company concluded that the goodwill attributable to the Proppant Solutions segment was fully impaired in the three months ended December 31, 2015 and recognized an impairment charge of \$69,246 in that period. The Company did not recognize any impairment losses for goodwill or other intangible assets in the year ended December 31, 2014. Currency translation and other relates to the impact of the change in foreign currency exchange rates from international entities on goodwill, an adjustment to the initial FTSI purchase price allocation from exercising an option to acquire an additional mining facility, and an adjustment recorded to goodwill related to the post-acquisition settlement of escrow proceeds. Goodwill on a certain property was originally recorded in the Proppant Solutions segment. When the property transitioned to Industrial & Recreational Products usage, it was transferred to that segment. In 2015, the property was idled and returned to the Proppant Solutions segment, where the write-off of goodwill related to that property was recorded.

Information regarding acquired intangible assets as of December 31, 2016 and 2015 is as follows:

	December 31, 2016		
	Gross Carrying Amount	Accumulated Amortization	Intangible Assets, net
Acquired technology and patents	\$ 60,115	\$ -	\$ 60,115
Supply agreement	50,700	(15,548)	35,152
Other intangible assets	573	(499)	74
Intangible assets	\$ 111,388	\$ (16,047)	\$ 95,341

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	December 31, 2015		
	Gross Carrying Amount	Accumulated Amortization	Intangible Assets, net
Acquired technology and patents	\$ 56,320	\$ -	\$ 56,320
Supply agreement	50,700	(11,154)	39,546
Other intangible assets	1,190	(574)	616
Intangible assets	\$ 108,210	\$ (11,728)	\$ 96,482

Acquired technology represents technology acquired in the SSP acquisition. The carrying value of this asset represents its original cost, plus amounts owed to the seller as deferred purchase price. In 2016, the Company determined that it is probable an additional \$3,794 will be due to the seller and has been recorded as additional purchase price. Of this additional purchase price, approximately \$1,287 was paid during 2016 and the remaining \$2,507 was accrued as of December 31, 2016. The Company has also determined that the proper period to begin the amortization of this intangible is January 1, 2017, which is the first period products using the SSP technology will be sold in a full commercial protocol. The Company considered the potential ranges of useful lives and believes a 20-year useful life for the intangible asset is appropriate. The Company's determination of the 20-year useful life of the intangible asset is based upon the period over which the asset is expected to contribute directly or indirectly to the future cash flows of the Company. As of December 31, 2016, the Company has determined the carrying value of the intangible does not exceed fair value. Based on future results of sales of products utilizing the technology, it is possible the fair value of this intangible asset could decline below its cost such that an impairment in carrying value exists.

The value of a supply agreement with FTSI is based on estimates of discounted future cash flows from sales under the agreement. Due to the failure to purchase minimum quantities in accordance with the agreement, a triggering event occurred for the FTSI intangible asset. Accordingly, an impairment test was completed which determined that, as of December 31, 2016, the fair value of the supply agreement exceeded its carrying value. Should FTSI undergo financial difficulties or not comply with the terms of this agreement, the fair value of this supply agreement could decline such that an impairment in carrying value exists. The supply agreement was previously amortized ratably over the life of the agreement, which was 10 years. However, in May 2015, the supply agreement was amended, extending the maturity date from September 2023 to December 2024. The supply agreement is now being amortized over the amended life.

Estimated future amortization expense related to intangible assets at December 31, 2016 is as follows:

	Amortization	
2017	\$	7,463
2018		7,411
2019		7,400
2020		7,400
2021		7,400
Thereafter		58,267
Total	\$	95,341

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9. Long-Term Debt

At December 31, 2016 and 2015, long-term debt consisted of the following:

	December 31, 2016	December 31, 2015
Term B-1 Loans	\$ -	\$ 156,134
Term B-2 Loans	719,632	902,402
Extended Term B-1 Loans	117,634	159,878
Industrial Revenue bond	10,000	10,000
Revolving credit facility and other	88	101
Capital leases, net	3,634	9,301
Deferred financing costs, net	(7,975)	(14,710)
	843,013	1,223,106
Less: current portion	(10,707)	(17,385)
Long-term debt including leases	\$ 832,306	\$ 1,205,721

ASU 2015-03 dictates that debt issuance costs related to a recognized debt liability are presented in the balance sheet as a direct deduction from the carrying amount of that debt liability, consistent with debt discounts. The “Deferred financing costs, net” line in the table above is the application of this guidance. For December 31, 2016 and 2015, the Company’s Revolving Credit Facility does not have an outstanding balance and, accordingly, its related deferred financing costs are not included in this line.

On September 5, 2013, the Company entered into the Second Amended and Restated Credit Agreement (the “2013 Amended Credit Agreement”). The 2013 Amended Credit Agreement initially contained a revolving credit facility (“Revolving Credit Facility”) and two tranches of term loans, a term B-1 facility (“Term B-1 Loans”) and a term B-2 facility (“Term B-2 Loans”). The Revolving Credit Facility and the Term B-1 and B-2 Loans are secured by a first priority lien on substantially all of the Company’s domestic assets.

On September 30, 2015, the Company entered into an amendment to the 2013 Amended Credit Agreement that modified the Revolving Credit Facility. These modifications consisted primarily of (i) a reduction in the U.S. revolving commitments from \$124,000 to \$99,000 (while the aggregate Canadian revolving commitment remained at \$1,000) and (ii) changes in the financial covenant governing the availability of amounts under the Revolving Credit Facility if, and only if, the Company has drawn, including letters of credit, more than \$31,250 on the Revolving Credit Facility. Generally, if the Company’s leverage ratio is greater than 4.75:1.00 during the period from the third quarter of 2015 through the fourth quarter of 2016, so long as the stated quarterly adjusted EBITDA thresholds are exceeded, the amount available to borrow under the Revolving Credit Facility is increased from \$31,250 to \$40,000. Commencing with the end of the first quarter of 2017, the quarterly adjusted EBITDA thresholds are discontinued and the full amount of the revolving commitment (\$100,000) is available so long as the Company’s leverage ratio does not exceed a revised limit (6.50:1.00 for the first quarter of 2017 declining quarterly to 4.75:1.00 for the fourth quarter of 2017). The Revolving Credit Facility termination date is September 6, 2018.

On April 28, 2016, the Company entered into an amendment to the 2013 Amended Credit Agreement that extended the maturity of certain of the Term B-1 Loans to July 15, 2018 (the “2016 Extended Term Loans”). The Company made a prepayment of accrued interest of \$227 and principal of \$69,580 on April 28, 2016 to the lenders consenting to the amendment. Accrued interest on the extended remainder of the Term B-1 Loans was due at maturity on July 15, 2018. Accrued interest related to the \$16,723 principal payment due on March 17, 2017 was also due on the same date.

On October 17, 2016, the Company repurchased \$3,000 of the Extended Term B-1 Loans at 91.5% of par. On November 17, 2016, the Company fully prepaid the \$16,766 of the Term B-1 Loans due March 2017 as well as the \$69,580 of the 2016 Extended Term Loans. On November 29, 2016, the Company repurchased, at an average of 96.3% of par, \$37,867 of the Extended Term B-1 Loans and \$175,133 of the Term B-2 Loans. The related gain on the October 2016 debt repurchase and the November 2016 debt repurchase was recorded in operating expense.

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As of December 31, 2016, the Term B-2 Loans, Extended Term B-1 Loans, and the Revolving Credit Facility had interest rates of 4.5%, 4.5%, and 4.3%, respectively.

As of December 31, 2016, there was \$17,432 available capacity remaining on the Revolving Credit Facility and \$13,818 committed to outstanding letters of credit. As of December 31, 2016, the Company has not drawn on the Revolving Credit Facility.

The Company has a \$10,000 Industrial Revenue Bond outstanding related to the construction of manufacturing facility in Wisconsin. The bond bears interest, which is payable monthly, at a variable rate. The rate was 0.80% at December 31, 2016. The bond matures on September 1, 2027 and is collateralized by a letter of credit of \$10,000.

Maturities of long-term debt are as follows:

Year Ended:	Capital Lease Obligations			Other Long-Term Debt	Total Principal Payments
	Lease Payment	Less Interest	Present Value		
2017	\$ 2,866	\$ 82	\$ 2,784	\$ 8,006	\$ 10,790
2018	685	16	669	8,007	8,676
2019	183	2	181	821,303	821,484
2020	-	-	-	19	19
2021	-	-	-	19	19
Thereafter	-	-	-	10,000	10,000
	<u>\$ 3,734</u>	<u>\$ 100</u>	<u>\$ 3,634</u>	<u>\$ 847,354</u>	<u>\$ 850,988</u>

Information pertaining to assets and related accumulated depreciation in the balance sheet for capital lease items is as follows:

	December 31, 2016	December 31, 2015
Cost	\$ 18,350	\$ 22,684
Accumulated depreciation	(10,994)	(8,812)
Net book value	<u>\$ 7,356</u>	<u>\$ 13,872</u>

10. Earnings (Loss) per Share

The table below shows the computation of basic and diluted earnings per share for the years ended December 31, 2016, 2015, and 2014:

	Year Ended December 31,		
	2016	2015	2014
Numerator:			
Net income (loss) attributable to Fairmount Santrol Holdings Inc.	\$ (140,192)	\$ (92,135)	\$ 170,450
Denominator:			
Basic weighted average shares outstanding	179,429	161,297	157,950
Dilutive effect of employee stock options, RSUs, and PRSUs	-	-	8,327
Diluted weighted average shares outstanding	<u>179,429</u>	<u>161,297</u>	<u>166,277</u>
Earnings (loss) per common share - basic	\$ (0.78)	\$ (0.57)	\$ 1.08
Earnings (loss) per common share - diluted	\$ (0.78)	\$ (0.57)	\$ 1.03

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Because the Company experienced a loss in the years ended December 31, 2016 and 2015, the calculation of diluted weighted average shares outstanding is not appropriate because the effect of including these potential common shares would be antidilutive. The calculation of diluted weighted average shares outstanding for the year ended December 31, 2014 excludes 715,068 potential common shares because the effect of including these potential common shares would be antidilutive.

As of December 31, 2016, the amount of outstanding options, RSUs, and PRSUs are 13,598, 1,459, and 458, respectively.

11. Derivative Instruments

The Company enters into interest rate swap agreements as a means to partially hedge its variable interest rate risk on debt instruments. The current notional value of these swap agreements is \$525,225, which represents approximately 63% of term debt outstanding at December 31, 2016 and effectively fixes the variable rate in a range of 0.83% to 3.115% for the portion of the debt that is hedged. The interest rate swap agreements mature at various dates between March 15, 2017 and September 5, 2019.

The derivative instruments are recorded on the balance sheet at their fair values. Changes in the fair value of derivatives are recorded each period in current earnings or in other comprehensive income, depending on whether a derivative is designated as part of a hedging relationship and, if it is, depending on the type of hedging relationship. For cash flow hedges in which the Company is hedging the variability of cash flows related to a variable-rate liability, the effective portion of the gain or loss on the derivative instrument is reported in other comprehensive income in the periods during which earnings are impacted by the variability of the cash flows of the hedged item. The ineffective portion of all hedges is recognized in current period earnings. As interest expense is accrued on the debt obligation, amounts in accumulated other comprehensive income (loss) related to the interest rate swaps are reclassified into income to obtain a net cost on the debt obligation equal to the effective yield of the fixed rate of each swap. In the event that an interest rate swap is terminated prior to maturity, gains or losses in accumulated other comprehensive income (loss) remain deferred and are reclassified into earnings in the periods in which the hedged forecasted transaction affects earnings.

The Company formally designates and documents instruments at inception that qualify for hedge accounting of underlying exposures in accordance with GAAP. Both at inception and for each reporting period, the Company assesses whether the financial instruments used in hedging transactions are effective in offsetting changes in cash flows of the related underlying exposure.

The following table summarizes the fair values and the respective classification in the Consolidated Balance Sheets as of December 31, 2016 and 2015:

Interest Rate Swap Agreements	Balance Sheet Classification	Assets (Liabilities)	
		December 31, 2016	December 31, 2015
Designated as cash flow hedges	Other long-term liabilities	\$ (14,488)	\$ (12,107)
Designated as cash flow hedges	Other assets	39	118
		\$ (14,449)	\$ (11,989)

In order to represent the ineffective portion of interest rate swap agreements designated as hedges, the Company recognized in interest expense the following in the years ended December 31, 2016, 2015, and 2014, respectively:

Derivatives in ASC 815-20 Cash Flow Hedging Relationships	Location of Gain (Loss) Recognized in Income on Derivative (Ineffective Portion)	Year Ended December 31,		
		2016	2015	2014
Interest rate swap agreements	Interest expense (income)	\$ (7)	\$ (51)	\$ 21
		\$ (7)	\$ (51)	\$ 21

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The Company expects \$6,821 to be reclassified from accumulated other comprehensive income (loss) into interest expense within the next twelve months.

12. Fair Value Measurements

Financial instruments held by the Company include cash equivalents, accounts receivable, accounts payable, long-term debt (including the current portion thereof) and interest rate swaps. The Company is also liable for contingent consideration from the SSP acquisition that is subject to fair value measurement. Fair value is defined as the price that would be received to sell an asset, or paid to transfer a liability, in an orderly transaction between market participants at the measurement date. In determining fair value, the Company utilizes certain assumptions that market participants would use in pricing the asset or liability, including assumptions about risk and/or the risks inherent in the inputs to the valuation technique.

Based on the examination of the inputs used in the valuation techniques, the Company is required to provide the following information according to the fair value hierarchy. The fair value hierarchy ranks the quality and reliability of the information used to determine fair values. Financial assets and liabilities at fair value will be classified and disclosed in one of the following three categories:

- Level 1 Quoted market prices in active markets for identical assets or liabilities
- Level 2 Observable market based inputs or unobservable inputs that are corroborated by market data
- Level 3 Unobservable inputs that are not corroborated by market data

A financial instrument's categorization within the valuation hierarchy is based upon the lowest level of input that is significant to the fair value measurement.

The carrying value of cash equivalents, accounts receivable and accounts payable are considered to be representative of their fair values because of their short maturities. The carrying value of the Company's long-term debt (including the current portion thereof) is recognized at amortized cost. The fair value of the Extended Term B-1 Loans and the Term B-2 Loans differs from amortized costs and is valued at prices obtained from a readily-available source for trading non-public debt, which represent quoted prices for identical or similar assets in markets that are not active, and therefore is considered Level 2. The following table presents the fair value as of December 31, 2016 and 2015, respectively, for the Company's long-term debt:

Long-Term Debt Fair Value Measurements	Quoted Prices in Active Markets (Level 1)	Other Observable Inputs (Level 2)	Unobservable Inputs (Level 3)	Total
December 31, 2016				
Term B-2 Loans	-	699,683	-	699,683
Extended Term B-1 Loans	-	114,308	-	114,308
	<u>\$ -</u>	<u>\$ 813,991</u>	<u>\$ -</u>	<u>\$ 813,991</u>
December 31, 2015				
Term B-1 Loans	\$ -	\$ 106,360	\$ -	\$ 106,360
Term B-2 Loans	-	443,580	-	443,580
Extended Term B-1 Loans	-	76,922	-	76,922
	<u>\$ -</u>	<u>\$ 626,862</u>	<u>\$ -</u>	<u>\$ 626,862</u>

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The following table presents the amounts carried at fair value as of December 31, 2016 and 2015 for the Company's other financial instruments. Fair value of interest rate swap agreements is based on the present value of the expected future cash flows, considering the risks involved, and using discount rates appropriate for the maturity date. These are determined using Level 2 inputs.

Recurring Fair Value Measurements	Quoted Prices in Active Markets (Level 1)	Other Observable Inputs (Level 2)	Unobservable Inputs (Level 3)	Total
December 31, 2016				
Interest rate swap agreements	\$ -	\$ (14,449)	\$ -	\$ (14,449)
	<u>\$ -</u>	<u>\$ (14,449)</u>	<u>\$ -</u>	<u>\$ (14,449)</u>
December 31, 2015				
Interest rate swap agreements	\$ -	\$ (11,989)	\$ -	\$ (11,989)
	<u>\$ -</u>	<u>\$ (11,989)</u>	<u>\$ -</u>	<u>\$ (11,989)</u>

13. Income Taxes

Income (loss) before provision (benefit) for income taxes includes the following components:

	2016	2015	2014
United States	\$ (237,486)	\$ (94,746)	\$ 238,332
Foreign	(2,080)	877	9,704
Total	<u>\$ (239,566)</u>	<u>\$ (93,869)</u>	<u>\$ 248,036</u>

The components of the provision (benefit) for income taxes are as follows:

	2016	2015	2014
Federal	\$ (19,056)	\$ (23,515)	\$ 30,656
State and local	674	359	3,754
Foreign	907	1,396	5,193
Subtotal	<u>(17,475)</u>	<u>(21,760)</u>	<u>39,603</u>
Change in deferred taxes	(81,966)	19,821	37,810
Total	<u>\$ (99,441)</u>	<u>\$ (1,939)</u>	<u>\$ 77,413</u>

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The effective tax rate for 2014 was a provision on income, while 2016 and 2015 were provisions on losses. A reconciliation of the statutory federal income tax rate to the Company's effective tax rate is as follows:

	<u>2016</u>	<u>2015</u>	<u>2014</u>
U.S. statutory rate	35.0%	35.0%	35.0%
Increase (decrease) resulting from:			
State income taxes, net	1.5	0.2	1.2
Foreign tax rate differential and adjustment	(0.1)	0.1	0.6
U.S. statutory depletion	3.7	9.7	(5.8)
Manufacturers' deduction	(0.1)	(4.0)	(0.9)
Unremitted foreign earnings	0.2	(4.1)	0.0
Goodwill impairment	0.0	(6.2)	0.0
Valuation allowance	(4.4)	(27.6)	0.5
Loss carryback	6.6	0.0	0.0
Other items, net	(0.9)	(1.0)	0.6
Effective rate	<u>41.5%</u>	<u>2.1%</u>	<u>31.2%</u>

The difference between the statutory U.S. tax rate and the Company's effective tax rate in 2016 is principally due to the benefit from a loss carryback; an increase in the valuation allowance primarily related to federal and state net operating loss carryforwards; and tax depletion. The difference between the statutory U.S. tax rate and the Company's effective tax rate in 2015 is due to the accrual of deferred taxes on the cumulative amount of foreign undistributed earnings resulting from a change in the Company's indefinite reinvestment assertion; an increase in the valuation allowance primarily related to U.S. alternative minimum tax credits and U.S. research credits; a goodwill impairment charge for which the Company could not record an income tax benefit; tax depletion; and the manufacturers' deduction. The difference between the statutory U.S. tax rate and the Company's effective tax rate in 2014 is primarily due to tax depletion and nondeductible expenses.

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Significant components of deferred tax assets and liabilities as of December 31, 2016 and 2015 are as follows:

	2016	2015
Deferred tax assets		
Accrued liabilities	\$ 2,771	\$ 1,088
Inventory	775	3,168
Stock compensation	18,784	19,213
Deferred compensation	1,039	1,161
Interest rate derivatives	5,189	4,373
Pension	3,210	3,425
Intangibles	11,401	13,791
Foreign tax credit carryforwards	1,662	1,196
Alternative minimum tax credit carryforwards	6,509	24,463
Research and experimentation tax credit carryforwards	540	971
Net operating loss carryforwards	72,901	965
Other assets	1,985	2,027
Total deferred tax assets before valuation allowance	126,766	75,841
Valuation allowance	(21,959)	(27,230)
Total deferred tax assets after valuation allowance	104,807	48,611
Deferred tax liabilities		
Property, plant, and equipment	(107,089)	(131,278)
Unremitted foreign earnings	(905)	(2,553)
Other liabilities	(2,626)	(3,515)
Total deferred tax liabilities	(110,620)	(137,346)
Net deferred tax assets (liabilities)	\$ (5,813)	\$ (88,735)

Total deferred assets before valuation allowance in the table above does not include a deferred tax asset of \$4,249 relating to unrealized stock compensation deductions.

As of December 31, 2016 and 2015, the Company had deferred tax assets relating to U.S. alternative minimum tax credit carryforwards of \$6,509 and \$24,463, respectively, foreign tax credit carryforwards of \$1,662 and \$1,196, respectively, research and experimentation tax credit carryforwards of \$540 and \$971, respectively, federal net operating loss carryforwards of \$72,119 and \$0, respectively, state net operating loss carryforwards of \$4,468 and \$965, respectively, and foreign net operating loss carryforwards \$921 and \$0, respectively. The U.S. alternative minimum tax credit carryforwards have an indefinite carryforward period. The foreign tax credit carryforwards will expire in 2024. The research and development tax credit carryforwards and federal net operating loss carryforwards expire between 2034 and 2036. A majority of the state net operating loss carryforwards expire between 2028 and 2036, while the foreign net operating loss carryforwards expire between 2021 and 2036. The Company has provided a valuation allowance to reduce the carrying value of certain of these deferred tax assets, as management has concluded that, based on available evidence, it is more likely than not that the deferred tax assets will not be fully realized.

In 2015, as a result of the economic downturn and the Company's upcoming debt service requirements, the Company withdrew its indefinite reinvestment assertion for foreign subsidiaries' unremitted earnings. In 2016 and 2015, the Company provided deferred taxes of \$905 and \$2,553, respectively, representing the amount of the expected residual U.S. tax that will be payable upon repatriation of unremitted foreign earnings.

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The Company or its subsidiaries file income tax returns in the United States, Canada, China, Mexico, and Denmark. The Company is subject to income tax examinations for its U.S. Federal income taxes for the preceding three fiscal years and, in general, is subject to state and local income tax examinations for the same periods. The Company is currently under examination by the Internal Revenue Service for the periods related to 2013 and 2015. The Company has tax years that remain open and subject to examination by tax authorities in the following major taxing jurisdictions: Canada for years after 2011, Mexico for years after 2010, and China and Denmark for years after 2012.

A reconciliation of the beginning and ending amount of unrecognized tax benefits is as follows:

	<u>2016</u>	<u>2015</u>	<u>2014</u>
Unrecognized tax benefits balance - January 1	\$ 5,200	\$ 5,327	\$ 3,038
Increases (decreases) for tax positions in prior years	(2,685)	(222)	2,201
Increases (decreases) for tax positions in current year	503	95	88
Unrecognized tax benefits balance - December 31	<u>\$ 3,018</u>	<u>\$ 5,200</u>	<u>\$ 5,327</u>

Interest and penalty amounts previously included in the reconciliation have been removed.

At December 31, 2016 and 2015, the Company had \$3,018 and \$5,200, respectively, of unrecognized tax benefits. If the \$3,018 were recognized, \$1,708 would affect the effective tax rate. Interest and penalties are recorded in provision for income taxes. At December 31, 2016 and 2015, the Company had \$1,827 and \$1,752, respectively, of accrued interest and penalties related to unrecognized tax benefits recorded.

14. Common Stock and Stock-Based Compensation

The Company has a single class of par value \$0.01 per share common stock. Each share of common stock has identical rights and privileges and is entitled to one vote per share. The Company has authorized, but not issued, a single class of par value \$0.01 per share preferred stock.

The Company has several stock plans that allow for granting of options to acquire common shares to employees and key non-employees. As of December 31, 2013, the plans consisted of the FML Holdings, Inc. Non-Qualified Stock Option Plan (the "1997 Plan"), the Long Term Incentive Compensation Plan (the "2006 Plan"), and the FML Holdings, Inc. Stock Option Plan (the "2010 Plan"). At December 31, 2014, the 1997 Plan, the 2006 Plan, and the 2010 Plan were still in existence, and a new plan, the FMSA Holdings Inc. 2014 Long Term Incentive Plan (the "LTIP") was added as of September 11, 2014. The LTIP authorized and issued both non-qualified stock options as well as restricted stock units ("RSUs") and performance restricted stock units ("PRSUs"). The Company modified the LTIP to allow retirement-eligible participants (defined as age 55, plus 10 years of service) to continue to vest in options following retirement, and also allow retired participant to exercise options for up to 10 years from grant date.

For all stock plans, the options are exercisable for a ten year period. Options are exercisable at times determined by the compensation committee of the Company and, as set forth in each individual option agreement. The options may become exercisable over a period of years or become exercisable only if performance or other goals set by the Board are attained, or may be a combination of both. Options may be exercised, in whole or in part, at any time after becoming exercisable, but not later than the date the option expires, which is typically 10 years from the grant date. Options granted after 2009 contain a 7-year vesting period that may be shortened to five years upon attainment of certain Company performance, except for stock issued under the LTIP Plan, which has a 5-year vesting period that may be shortened to three years upon attainment of certain Company performance goals as determined by the compensation committee. The stock plans also contain a change in control provision that provides for immediate vesting upon certain changes of ownership of the company. All options granted prior to 2010 are fully vested. RSUs granted under the LTIP in 2015 vest after a 6-year period and vesting can be accelerated to four years upon attainment of certain Company performance goals as determined by the compensation committee. Options granted under the LTIP in 2016 vest ratably over a 3-year period. RSUs granted under the LTIP in 2016 vest ratably over a

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4-year period. PRSUs granted under the LTIP in 2016 cliff vest after a 3-year period and can be accelerated upon attainment of certain Company performance goals as determined by the compensation committee.

The weighted-average fair value of RSUs granted during the years ended December 31, 2016 and 2015 was \$2.42 and \$8.80, respectively, based on the closing price of the underlying share as of the grant date. The weighted-average fair value of PRSUs granted during the year ended December 31, 2016 was \$2.27. The weighted-average fair value of options granted during the years ended December 31, 2016, 2015, and 2014 was \$2.24, \$8.79, and \$8.49, respectively, based on the Black-Scholes-Merton options-pricing model, with the following assumptions:

	2016	2015	2014
Dividend yield	0.00%	0.00%	0.00%
Expected volatility	97.47%	45.61%	48.72%
Risk-free interest rate	1.26 - 1.47%	1.65 - 2.03%	1.94 - 2.03%
Expected option life	6.0 years	6.5 years	6.5 years

The Company has no current plans to declare a dividend that would require a dividend yield assumption other than zero. For the years ended December 31, 2015 and 2014, expected volatility was based on the volatilities of various comparable companies' common stock. Although the Company has been publicly traded since October 3, 2014, the Company previously did not believe the expected volatility of options could be computed based solely on the price of the Company's common stock. The comparable companies were selected by analyzing public companies in the industry based on various factors including, but not limited to, company size, financial data availability, active trading volume, and capital structure. For the year ended December 31, 2016, the Company concluded two full years of public trading of its common stock and, therefore, expected volatility is based on the price of its common stock. The risk-free interest rate is an interpolated rate from the U.S. constant maturity treasury rate for a term corresponding to the expected option life. However, because the Company has little recent historical data to provide a reasonable basis to estimate the expected life of the options, the Company uses the simplified method, which assumes the expected life is the mid-point between the vesting date and the end of the contractual term.

In determining the underlying value of the Company's stock prior to the commencement of public trading on October 3, 2014, the company used a combination of the guideline company approach and a discounted cash flow analysis. The key assumptions in this estimate include management's projections of future cash flows, the Company-specific cost of capital used as a discount rate, lack of marketability discount, and qualitative factors to compare the Company to comparable guideline companies. Following the Company's IPO on October 3, 2014, the shares were valued at the closing price as of the date of issuance.

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The Company recorded \$8,870, \$4,525, and \$16,571 of stock compensation expense related to these options, RSUs, and PRSUs for the years ended December 31, 2016, 2015, and 2014, respectively. The 2016 stock compensation expense includes approximately \$2,135 related to the modification of the retirement provisions of the LTIP. Stock compensation expense is included in selling, general, and administrative expenses on the Consolidated Statements of Income (Loss) and in additional paid-in capital on the Consolidated Balance Sheets.

Option activity during 2016 is as follows:

	Options	Weighted	Restricted Stock Units	Weighted	Performance	Weighted
		Average Exercise Price, Options		Average Price at RSU Issue Date	Restricted Stock Units	Average Price at PRSU Issue Date
Outstanding at December 31, 2015	16,277	\$ 6.28	579	\$ 10.45	-	\$ -
Granted	1,740	2.24	1,025	2.42	481	2.27
Exercised	(3,071)	2.10	(14)	8.83	-	-
Forfeited	(633)	8.61	(113)	6.82	(23)	2.04
Expired	(715)	8.81	(18)	6.82	-	-
Outstanding at December 31, 2016	13,598	\$ 6.45	1,459	\$ 5.10	458	\$ 2.28
Exercisable at December 31, 2016	7,133	\$ 5.03	-	\$ -	-	\$ -

Options outstanding as of December 31, 2016 and 2015, respectively, have an aggregate intrinsic value of \$80,510 and \$4,129 and a weighted average remaining contractual life of 5.6 years and 5.7 years. Options that are exercisable as of December 31, 2016 and 2015, respectively, have an aggregate intrinsic value of \$50,492 and \$4,129 and a weighted average remaining contractual life of 4.0 years and 4.6 years. The aggregate intrinsic value represents the difference between the fair value of the Company's shares of \$11.79 and \$2.35 per share at December 31, 2016 and 2015, respectively, and the exercise price of the dilutive options, multiplied by the number of dilutive options outstanding at that date.

The aggregate intrinsic value of stock options exercised during the years ended December 31, 2016, 2015, and 2014 was \$17,992, \$1,839, and \$51,410, respectively.

Net cash proceeds from the exercise of stock options were \$6,438, \$1,767, and \$6,540 in the years ended December 31, 2016, 2015, and 2014, respectively.

There was \$6,423, \$656, and \$16,143 of income tax benefits realized from stock option exercises in the years ended December 31, 2016, 2015, and 2014, respectively.

At December 31, 2016, options to purchase 13,598 common shares were outstanding at a range of exercise prices of \$1.43 to \$20.52 per share. At December 31, 2015, options to purchase 16,277 common shares were outstanding at a range of exercise prices of \$1.43 to \$20.52 per share. As of December 31, 2016, \$16,735 of unrecognized compensation cost related to non-vested stock options, RSUs, and PRSUs is expected to be recognized over a weighted-average period of approximately 3.2, 3.4, and 2.2 remaining years, respectively. As of December 31, 2015, \$17,272 of unrecognized compensation cost related to non-vested stock options and RSUs is expected to be recognized over a weighted-average period of approximately 4.2 remaining years.

On July 26, 2016, the Company completed a public offering of 25,000 shares of its common stock. In addition, the underwriters completed their exercise of an overallotment option on July 28, 2016 to sell an additional 3,750 shares (collectively, the "July 2016 offering"). Cash proceeds received by the Company for the 28,750 shares sold were approximately \$161,000, net of underwriting commissions and offering expenses. On October 25, 2016, the Company completed a public offering of 30,250 shares of its common stock (the "October 2016 offering"). Cash proceeds received by the Company for the shares sold were approximately \$277,000, net of underwriting commissions and offering expenses.

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The Company used a substantial portion of the proceeds from these offerings to pay down or repurchase its Term Loans and the balance will be used for general corporate purposes, which include, but are not limited to, working capital, further repayment, redemption or refinancing of debt and leases, capital expenditures, investments in or loans to subsidiaries and joint ventures, and satisfaction of other obligations. See Note 9 for further detail.

15. Defined Benefit Plans

The Company maintains two defined benefit pension plans, the Wedron pension plan and the Troy Grove pension plan, covering union employees at certain facilities that provide benefits based upon years of service or a combination of employee earnings and length of service.

The following assumptions were used to determine the Company's obligations under the plans:

	<u>Wedron Pension</u>		<u>Troy Grove Pension</u>	
	<u>2016</u>	<u>2015</u>	<u>2016</u>	<u>2015</u>
Discount rate	4.00%	3.75%	4.25%	4.00%
Long-term rate of return on plan assets	7.40%	7.50%	7.40%	7.50%

The difference in the discount rates used for the Wedron Pension and the Troy Grove Pension is due to the differing characteristics of the two plans, including employee characteristics and plan size. The Company uses a cash flow matching approach to determine its discount rate using each plan's projected cash flows and the BPS&M yield curve.

The long term rate of return on assets is based on management's estimate of future long term rates of return on similar assets and is consistent with historical returns on such assets.

The written investment policy for the pension plans includes a target allocation of about 70% in equities and 30% in fixed income investments. Only high-quality diversified securities similar to stocks and bonds are used. Higher-risk securities or strategies (such as derivatives) are not currently used but could be used incidentally by mutual funds held by the plan. The pension plans' obligations are long-term in nature and the investment policy is therefore focused on the long-term. Goals include achieving gross returns at least equal to relevant indices. Management and the plans' investment advisor regularly review and discuss investment performance, adherence to the written investment policy, and the investment policy itself.

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Benefits under the Wedron plan were frozen effective December 31, 2012. Benefit under the Troy Grove plan were frozen effective December 31, 2016. During 2016, the Troy Grove plan was amended to allow unreduced retirement benefits for certain plan participants. The \$181 impact of this amendment is recognized in expense in 2016. The plans were underfunded by \$2,096 and \$2,199 as of December 31, 2016 and 2015, respectively, as shown below:

	2016	2015
Change in benefit obligation		
Benefit obligation at beginning of year	\$ 8,812	\$ 9,146
Service cost	84	108
Interest cost	348	340
Actuarial (gain) loss	(82)	(525)
Benefit payments	(276)	(257)
Plan amendments	181	-
Benefit obligation at end of year	\$ 9,067	\$ 8,812
Change in plan assets		
Fair value of plan assets at beginning of year	\$ 6,613	\$ 6,897
Actual return on plan assets	558	(90)
Employer contributions	76	63
Benefit payments	(276)	(257)
Fair value of plan assets at end of year	\$ 6,971	\$ 6,613
Accrued benefit cost	\$ (2,096)	\$ (2,199)

The accrued benefit cost is included in the Consolidated Balance Sheets in other long-term liabilities.

The following relates to the defined benefit plans for the years ended December 31, 2016, 2015, and 2014, respectively:

	Year Ended December 31,		
	2016	2015	2014
Components of net periodic benefit cost			
Service cost	\$ 84	\$ 108	\$ 74
Interest cost	348	340	332
Expected return on plan assets	(480)	(508)	(585)
Amortization of prior service cost	-	16	19
Amortization of net actuarial loss	265	280	159
Curtailment	182	-	-
Net periodic benefit cost	\$ 399	\$ 236	\$ (1)
Changes in other comprehensive income (loss)			
Net actuarial gain (loss)	\$ 158	\$ (75)	\$ (1,699)
Amortization of prior service cost	-	16	16
Amortization of net actuarial loss	265	280	164
Curtailment	182	-	-
Deferred tax asset	(180)	(124)	569
Other comprehensive income (loss)	\$ 425	\$ 97	\$ (950)

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Pension expense for such plans totaled \$399 and \$236 for the years ended December 31, 2016 and 2015, respectively. Pension income for such plans totaled \$1 for the year ended December 31, 2014.

Expected contributions into the plans for the year ended December 31, 2017 are \$69.

The net actuarial loss and prior service cost that the Company expects will be amortized from accumulated other comprehensive loss into periodic benefit cost in the year ending December 31, 2016 are \$237 and \$0, respectively.

Benefits expected to be paid out over the next ten years:

<u>Year Ending</u>	<u>Benefit Payment</u>
2017	\$ 356
2018	395
2019	426
2020	458
2021	481
2022-2026	2,653

Fair value measurements for assets held in the benefit plans as of December 31, 2016 are as follows:

	<u>Quoted Prices in Active Markets (Level 1)</u>	<u>Other Observable Inputs (Level 2)</u>	<u>Unobservable Inputs (Level 3)</u>	<u>Balance at December 31, 2016</u>
Cash	\$ 60	\$ -	\$ -	\$ 60
Fixed income	1,860	-	-	1,860
Mutual funds	5,051	-	-	5,051
	<u>\$ 6,971</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ 6,971</u>

16. Other Benefit Plans

The Company previously participated in a multiemployer defined benefit pension plan. The Company withdrew from the plan in October 2015 and has recorded a liability of \$9,283 as of December 31, 2016, which is payable in annual installments until November 2035.

The Company has a defined contribution plan (401(k) Plan) covering substantially all employees. Under the provisions of the 401(k) Plan, the Company matches 50% of the first 5% of each employee's contribution into the 401(k) Plan. Company match contributions were \$1,231, \$1,191, and \$1,179, for the years ended December 31, 2016, 2015, and 2014, respectively. Included in these contributions are Company contributions to the 401(k) Plan for Wedron Silica union members, which were \$365, \$352, and \$315 for the years ended December 31, 2016, 2015, and 2014 respectively.

The Company may, at its discretion, make additional contributions, which are determined in part based on the Company's return on investable assets, to the Plan. There were no discretionary contributions accrued at December 31, 2016. Participant accounts in the 401(k) Plan held 5,947 of common stock shares of the Company as of December 31, 2016. Discretionary contributions accrued at December 31, 2015 were \$1,223. Participant accounts in the 401(k) Plan held 6,434 of common stock shares of the Company as of December 31, 2015.

Effective January 1, 1999, the Company adopted a Supplemental Executive Retirement Plan (SERP) for certain employees who participate in the Company's 401(k) Plan and/or the Employee Stock Bonus Plan (ESBP). The purpose of the SERP is to provide an opportunity for the participants of the SERP to defer compensation and to receive their pro rata share of former ESBP contributions. Due to income restrictions imposed by the IRS code, such contributions were formerly made to the ESBP but, in some instances, were forfeited by these employees to the

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remaining ESBP participant accounts. Accrued Company contributions to the SERP were \$0 and \$60 for the years ended December 31, 2016 and 2015, respectively.

The Company has deferred compensation agreements with various management employees that provide for supplemental payments upon retirement. These amounts are being accrued for over the estimated employment periods of these individuals.

17. Self-Insured Plans

Certain subsidiaries, located in Illinois and Michigan, are self-insured for workers' compensation up to \$1,000 per occurrence and \$3,000 in the aggregate. In July 2016, the Company moved the Michigan self-insured plan over to the Company's group captive insurance company. The Company has an accrued liability of \$180 and \$463 as of December 31, 2016 and 2015, respectively, for anticipated future payments on claims incurred to date. Management believes these amounts are adequate to cover all required payments.

The Company is also self-insured for medical benefits. The Company has an accrued liability of \$3,055 and \$4,048 as of December 31, 2016 and 2015, respectively, for anticipated future payments on claims incurred to date. Management believes this amount is adequate to cover all required payments.

18. Commitments and Contingencies

The Company has entered into numerous mineral rights agreements, in which payments under the agreements are expensed as incurred. Certain agreements require annual payments while other agreements require payments based upon annual tons mined and others a combination thereof. Total royalty expense associated with these agreements was \$1,429, \$1,899, and \$3,786 for the years ended December 31, 2016, 2015, and 2014, respectively.

The Company leases certain machinery, equipment (including railcars), buildings, and office space under operating lease arrangements. Total rent expense associated with these leases was \$63,997, \$67,745, and \$56,247 for the years ended December 31, 2016, 2015, and 2014, respectively.

Minimum lease payments, primarily for railcars, equipment, and office leases, due under the long-term operating lease obligations are shown below. The table below includes railcar leases, which comprise substantially all of the Company's equipment lease obligations, as well as purchase commitments for guaranteed minimum payments for certain third party terminal operators:

	<u>Equipment</u>	<u>Real Estate</u>	<u>Total</u>
2017	\$ 38,943	\$ 10,018	\$ 48,961
2018	37,113	8,049	45,162
2019	35,674	7,250	42,924
2020	28,395	6,706	35,101
2021	28,249	4,810	33,059
Thereafter	88,183	7,014	95,197
Total	\$ 256,557	\$ 43,847	\$ 300,404

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The Company is subject to a contingent consideration arrangement related to the purchase of Self-Suspending Proppant LLC (“SSP”), which was accounted for as an acquisition of a group of assets. The contingent consideration is based on a fixed percentage of the cumulative product margin, less certain adjustments, generated by sales of Propel SSP and other products incorporating SSP technology for the five years commencing on October 1, 2015. The Company entered into an amendment to this agreement on December 17, 2015. This amendment (a) extends the period during which the aggregate earnout payments must equal or exceed \$45,000 from the two-year period ending October 1, 2017 until the three-year period ending October 1, 2018; and (b) provides that the aggregate earnout payments during the two-year period ending October 1, 2017 must equal or exceed \$15,000 and granted the Seller a security interest in 51% of the equity interests in the Company to secure such \$15,000. The amendment does not alter the final threshold earnout amount, which continues to be \$195,000 (inclusive of the \$45,000 payment, if any) by October 1, 2020. The contingent consideration is accrued and capitalized as part of the cost of the SSP assets at the time a payment is probable and reasonably estimable. Accordingly, the Company accrued and capitalized \$3,794 in the year ended December 31, 2016.

Certain subsidiaries are defendants in lawsuits in which the alleged injuries are claimed to be silicosis-related and to have resulted, in whole or in part, from exposure to silica-containing products, allegedly including those sold by certain subsidiaries. In the majority of cases, there are numerous other defendants. In accordance with its insurance obligations, the defense of these actions has been tendered to and the cases are being defended by the subsidiaries’ insurance carriers. Management believes that the Company’s substantial level of existing and available insurance coverage combined with various open indemnities is more than sufficient to cover any exposure to silicosis-related expenses. An estimate of the possible loss, if any, cannot be made at this time.

In December 2015, the Company was notified by the Securities and Exchange Commission (the “SEC”) that it was being investigated for possible violations of the Foreign Corrupt Practices Act (the “FCPA”) and other securities laws relating to matters concerning certain of the Company’s international operations. The Company had previously retained outside legal counsel to investigate the subject matter of the SEC’s investigation, and at that time, the Company determined that no further action was necessary. On November 3, 2016, the Company was notified by the SEC that the SEC staff completed this investigation and that the SEC does not intend to pursue enforcement action against the Company.

19. Transactions with Related Parties

The Company had purchases from an affiliated entity for freight, logistic services and consulting services related to its operations in China of \$576, \$288, and \$2,902 in the years ended December 31, 2016, 2015, and 2014, respectively. The Company had purchases from an affiliated entity for material purchases related to its operations in China of \$0, \$62, and \$44 in the years ended December 31, 2016, 2015, and 2014, respectively.

The Company paid management fees of \$825 in the year ended December 31, 2014. Concurrent with the Company’s initial public offering on October 3, 2014, the Company no longer pays a management fee to American Securities LLC (“American Securities”). However, the Company pays American Securities, in accordance with its policy, for Board of Directors fees and Company-related expenses, including travel and lodging, market research, and other miscellaneous expenses. Fees and expenses paid to American Securities were \$323, \$374, and \$97 in the years ended December 31, 2016, 2015, and 2014, respectively.

20. Segment Reporting

The Company organizes its business into two reportable segments, Proppant Solutions and Industrial & Recreational Products. The reportable segments are consistent with how management views the markets served by the Company and the financial information reviewed by the chief operating decision maker in deciding how to allocate resources and assess performance.

Previously, the segment results were reported based on segment contribution margin, which included selling, general, and administrative expenses directly allocable to an operating segment and excluded certain corporate costs

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not associated with the operations of the segment. These corporate costs were separately stated and included costs related to functional areas such as operations management, corporate purchasing, accounting, treasury, information technology, legal and human resources

After evaluation of the Company's comparability to industry peers and practices, the chief operating decision maker changed the method to evaluate the Company's operating segments' performance based on segment gross profit, which does not include any selling, general, and administrative costs or corporate costs. The change to using segment gross profit results in an increase in segment profitability compared to segment contribution margin as allocable selling, general, and administrative costs were charged against segment contribution margin. This change was effective beginning in the three months ended September 30, 2016. All periods presented have been restated accordingly.

	Year Ended December 31,		
	2016	2015	2014
Revenues			
Proppant Solutions	\$ 416,144	\$ 710,083	\$ 1,232,232
Industrial & Recreational Products	118,869	118,626	124,226
Total revenues	535,013	828,709	1,356,458
Segment gross profit			
Proppant Solutions	26,501	175,226	463,426
Industrial & Recreational Products	48,798	44,638	41,578
Total segment gross profit	75,299	219,864	505,004
Operating expenses excluded from segment gross profit			
Selling, general, and administrative	79,140	85,191	130,798
Depreciation, depletion, and amortization	72,276	66,754	59,379
Goodwill and other asset impairments	93,148	87,476	-
Restructuring charges	1,155	9,221	-
Other operating expense	8,899	1,357	3,163
Interest expense, net	65,367	62,242	60,842
Gain on repurchase of debt, net	(5,110)	-	-
Other non-operating expense (income)	(10)	1,492	2,786
Income (loss) before provision for income taxes	\$ (239,566)	\$ (93,869)	\$ 248,036

Total assets reported in the Proppant Solutions segment were \$477,777, \$1,152,110, and \$1,271,700 as of December 31, 2016, 2015, and 2014, respectively. Total assets reported in the I&R segment were \$57,029, \$116,825, and \$63,270 as of December 31, 2016, 2015, and 2014, respectively.

The Company's two largest customers, Halliburton and FTSI, accounted for 30% and 12%, 25% and 18%, and 19% and 16% of consolidated net sales in the years ended December 31, 2016, 2015, and 2014, respectively. These customers are part of the Company's Proppant Solutions segment.

21. Restructuring and Other Charges

As a result of challenging conditions in the energy market, the Company began taking actions in early 2015 to adjust its overall operational footprint and reduce costs. The Company's continuing restructuring program primarily consists of workforce reductions and costs to idle or exit facilities. The Company has largely completed these activities, however, a return to a continued sustained downturn in the oil and gas market could reinitiate this

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restructuring process . A summary of the restructuring and other costs recognized for the years ended December 31, 2016, 2015, and 2014, respectively, is as follows:

	Year Ended December 31,		
	2016	2015	2014
Restructuring charges			
Workforce reduction costs, including one-time severance payments	\$ 1,155	\$ 1,682	\$ -
Other exit costs, including multiemployer pension plan withdrawal liability and additional cash costs to exit facilities	-	7,539	-
Total restructuring charges	\$ 1,155	\$ 9,221	\$ -

As a result of these actions, the Company determined that certain of the impacted facilities in the Proppant Solutions segment would not be necessary for ongoing operations and management made the decision to offer the facilities for sale. The assets and liabilities of these facilities are reclassified in the Consolidated Balance Sheets as assets held-for-sale as of December 31, 2015.

While these restructuring activities primarily were driven by the decline in proppant demand in 2015, certain plants supporting the Industrial & Recreational Products segment have been adversely impacted as well. A summary of the restructuring and other costs by operating segment for the years ended December 31, 2016, 2015, and 2014, respectively, is as follows:

	Year Ended December 31,		
	2016	2015	2014
Restructuring charges			
Proppant Solutions	\$ -	\$ 1,162	\$ -
Industrial & Recreational Products	-	6,377	-
Corporate	1,155	1,682	-
Total restructuring charges	\$ 1,155	\$ 9,221	\$ -

As a result of challenging conditions in the proppant market, the Company has made the decision to sell some of its assets in the Proppant Solutions segment that it views as redundant to its current business requirements. These assets are classified as held-for-sale and have been marked down to their estimated fair values as of December 31, 2015. However, these assets are no longer classified as held-for-sale as of December 31, 2016.

22. Geographic Information

The following tables show total Company revenues and long-lived assets. Revenues are attributed to geographic regions based on the selling location. Long-lived assets are located in the respective geographic regions.

	Year Ended December 31,		
	2016	2015	2014
Revenues			
Domestic	\$ 522,870	\$ 798,750	\$ 1,254,071
International	12,143	29,959	102,387
Total revenues	\$ 535,013	\$ 828,709	\$ 1,356,458

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	December 31, 2016	December 31, 2015	December 31, 2014
Long-lived assets			
Domestic	\$ 725,280	\$ 867,352	\$ 832,280
International	2,455	3,645	8,994
Long-lived assets	\$ 727,735	\$ 870,997	\$ 841,274

23. Quarterly Financial Data (Unaudited)

The following tables set forth the Company's unaudited quarterly consolidated statements of operations for each of the last four quarters for the periods ended December 31, 2016 and 2015. This unaudited quarterly information has been prepared on the same basis as the Company's annual audited financial statements and includes all adjustments, consisting only of normal recurring adjustments that are necessary to present fairly the financial information for the fiscal quarters presented.

	First Quarter	Second Quarter	Third Quarter	Fourth Quarter
2016:				
Revenues	\$ 145,458	\$ 114,249	\$ 134,775	\$ 140,531
Cost of goods sold	118,464	114,129	114,873	112,248
Operating expenses	37,270	134,403	44,363	38,582
Interest expense, net	17,262	16,606	16,175	15,324
Gain on repurchase of debt, net	-	-	-	(5,110)
Other non-operating income	(5)	-	-	(5)
Benefit for income taxes	(15,754)	(63,019)	(20,013)	(655)
Net loss	(11,779)	(87,870)	(20,623)	(19,853)
Less: Net income (loss) attributable to the non-controlling interest	(3)	16	2	52
Net loss attributable to Fairmount Santrol Holdings Inc.	(11,776)	(87,886)	(20,625)	(19,905)
Loss per share, basic	\$ (0.07)	\$ (0.54)	\$ (0.11)	\$ (0.09)
Loss per share, diluted	\$ (0.07)	\$ (0.54)	\$ (0.11)	\$ (0.09)
Weighted average number of shares outstanding, basic	161,446	161,647	183,620	212,609
Weighted average number of shares outstanding, diluted	161,446	161,647	183,620	212,609

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	First Quarter	Second Quarter	Third Quarter	Fourth Quarter
2015:				
Revenues	\$ 301,490	\$ 221,323	\$ 170,950	\$ 134,946
Cost of goods sold	202,548	165,130	131,679	109,488
Operating expenses	41,813	53,835	39,828	114,199
Interest expense, net	15,308	14,894	15,963	16,077
Other non-operating expense	324	-	1,492	-
Provision (benefit) for income taxes	10,617	(26,677)	28,117	(13,996)
Net income (loss)	30,880	14,141	(46,129)	(90,822)
Less: Net income attributable to the non-controlling interest	121	4	71	9
Net income (loss) attributable to Fairmount Santrol Holdings Inc.	30,759	14,137	(46,200)	(90,831)
Earnings (loss) per share, basic	\$ 0.19	\$ 0.09	\$ (0.29)	\$ (0.56)
Earnings (loss) per share, diluted	\$ 0.18	\$ 0.08	\$ (0.29)	\$ (0.56)
Weighted average number of shares outstanding, basic	160,949	161,368	161,413	161,433
Weighted average number of shares outstanding, diluted	166,331	166,867	161,413	161,433

Operating expenses include restructuring charges of \$1,155 for the three months ended June 30, 2016. Also included in operating expenses is other asset impairments of \$76, \$90,579, \$0, and \$2,494 for the three months ended March 31, June 30, September 30, and December 31, 2016, respectively.

Operating expenses include restructuring charges of \$324, \$8,350, \$284, and \$263 for the three months ended March 31, June 30, September 30, and December 31, 2015, respectively. Also included in operating expenses is goodwill and other asset impairments of \$0, \$6,474, \$4,169, and \$76,833 for the three months ended March 31, June 30, September 30, and December 31, 2015, respectively.

ITEM 9. CHANGES IN AND DISAGREEMENTS WITH ACCOUNTANTS ON ACCOUNTING AND FINANCIAL DISCLOSURE

None.

ITEM 9A. CONTROLS AND PROCEDURES**Evaluation of Disclosure of Controls and Procedures**

Our management, with the participation of our Chief Executive Officer and Chief Financial Officer, evaluated the effectiveness of our disclosure controls and procedures (as defined in Rules 13a-15(e) and 15d-15(e) under the Exchange Act of 1934, as amended). Based on such evaluation, our Chief Executive Officer and Chief Financial Officer have concluded that our disclosure controls and procedures were effective as of December 31, 2016.

Management's Report on Internal Control over Financial Reporting

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 the Chief Executive Officer and the Chief Financial Officer, we conducted an evaluation of the system of internal control over financial reporting based on criteria specified in *Internal Control – Integrated Framework* (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission ("COSO"). Based upon the evaluation under the COSO framework, management concluded that our internal control over financial reporting was effective as of December 31, 2016.

The effectiveness of our internal control over financial reporting has been audited by PricewaterhouseCoopers LLP, an independent registered public accounting firm, as stated in their report which appears herein.

Changes in Internal Control over Financial Reporting

There have been no changes in internal control over financial reporting during the quarter ended December 31, 2016 that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

ITEM 9B. OTHER INFORMATION

None.

PART III

Except as set forth below, the information required by Items 10, 11, 12, 13 and 14 will appear in the Company's Proxy Statement for the Annual Meeting of Stockholders to be held on May 11, 2017, which will be filed on April 6, 2017 pursuant to Regulation 14A under the Securities Exchange Act of 1934 and is incorporated by reference in this Report pursuant to General Instruction G(3) of Form 10-K (other than the portions thereof not deemed to be "filed" for the purpose of Section 18 of the Securities Exchange Act of 1934).

The information set forth below is provided as required by Item 10 and the listing standards of the NYSE.

The following table sets forth information with respect to our current executive officers, including their ages, as of March 9, 2017. There are no family relationships between any of our executive officers.

<u>Name</u>	<u>Age</u>	<u>Position</u>
Jennifer D. Deckard	51	President and Chief Executive Officer
Michael F. Biehl	61	Executive Vice President, Chief Financial Officer
Gerald L. Clancey	47	Executive Vice President, Chief Commercial Officer
Brian J. Richardson	44	Executive Vice President, Chief People Officer
George W. Magaud	53	Executive Vice President, Chief Strategy & Innovation Officer
Robert B. Larson	45	Executive Vice President, Engineering and Supply Chain Operations
Daniel N. Gerber	64	Executive Vice President, Operations
David J. Crandall	50	Executive Vice President, General Counsel and Secretary
Mark E. Barrus	55	Vice President of Accounting and Controls

Executive Officers of the Registrant

Jennifer D. Deckard, age 51, has served as President, Chief Executive Officer and Director of Fairmount Santrol since 2013. Previously, Ms. Deckard served as President from January 2011 until May 2013, Vice President of Finance and Chief Financial Officer from 1999 until 2011, Corporate Controller from 1996 to 1999 and Accounting Manager from 1994 until 1996. Ms. Deckard joined the Board of RPM International Inc. (NYSE: RPM) in 2015 and serves as a member of RPM's Governance and Nominating Committee. In her local community, Ms. Deckard serves on the boards of The Cleveland Foundation, Edwin's Foundation, The First Tee of Cleveland, The Industrial Minerals Association – North America, and The National Industrial Sand Association. She also serves on the Case Western Reserve University's Weatherhead School of Management's Visiting Committee and the Board of Directors for the Fairmount Santrol Foundation. Ms. Deckard received a B.S. from the University of Tulsa, her C.P.A. certification from the State of Missouri, and an M.B.A. from Case Western Reserve University.

Michael F. Biehl, age 61, has served as Executive Vice President and Chief Financial Officer since 2016. Prior to joining Fairmount Santrol, Mr. Biehl served as Executive Vice President and Chief Financial Officer for publicly traded Chart Industries, Inc. for almost 15 years. Prior to that, he held management positions at the former Oglebay Norton Company and Ernst & Young LLP. Mr. Biehl received a B.B.A. from Ohio University and M.B.A. from Northwestern University's Kellogg School of Management. He continues to be a licensed C.P.A. in Ohio and is a member of both the OSCP and AICPA. Locally, Mr. Biehl is actively involved at St. Joseph Academy and currently serves as Chairman of its Board of Directors.

Gerald L. Clancey, age 47, has served as Executive Vice President, Chief Commercial Officer since 2015. In this role, he has responsibility for Domestic and International Sales into the Proppant and Industrial & Recreational (I&R) channels as well as leadership for Supply Chain and Logistics. Previously, Mr. Clancey served as Executive Vice President of Supply Chain and I&R since 2011, Vice President of Sales for I&R from 2002 to 2011 and General Sales Manager for the company's TechniSand resin-coated foundry division from 1998 to 2002. He was previously President of the Foundry Educational Foundation and served several terms on its Board of Directors. Mr. Clancey received a B.S. from Kent State University and M.B.A. from the University of Notre Dame.

Brian J. Richardson, age 44, has served as Executive Vice President, Chief People Officer since 2015. In this capacity he provides leadership for our Human Resources, Information Technology, Risk Management, Sustainable Development and Internal Communications functions. Prior to joining the company, Mr. Richardson was Sr. Vice

President of Human Resources for the Global Finishes Group of The Sherwin-Williams Company. Mr. Richardson serves on the National Board of Directors of the Alzheimer's Association, where he is a member of the Executive Committee and Chair of the Strategic Planning Committee. Locally, he serves on the Board of Directors for the United Way of Greater Cleveland, where he is a member of the Executive Committee and Chair of the Human Resources Committee. Mr. Richardson received a B.A. Finance from Baldwin-Wallace College and M.B.A. from The Ohio State University.

George W. Magaud, age 53, has served as Executive Vice President, Chief Strategy & Innovation Officer since 2015. In this role, he leads the company's Strategic Development efforts as well as the Marketing and R&D organizations. Prior to this, he served as Executive Vice President, Strategic Development since joining the company in 2014. Previously, Mr. Magaud worked for Lafarge where he held positions in Strategy and Business Development, Marketing and Product Development, as well as Operations in Europe and in the United States. Mr. Magaud received his undergraduate degree from Yale University and a business degree from Institut d'Etudes Politiques de Paris.

Robert B. Larson, age 45, has served as Executive Vice President, Engineering and Supply Chain Operations since April 2016. Previously, Mr. Larson served as Senior Vice President of Engineering, Process & Technology since 2015 and Vice President of Engineering from 2011 to 2015. He served as both a Manager and then Director of Engineering from 2003 until 2011. Mr. Larson currently serves as the Chairman of the Engineering and Technology committee for The Industrial Minerals Association of North America. He holds a B.S. in Electrical Engineering from the University of Illinois and M.B.A. from the University of Michigan's Ross School of Business.

Daniel N. Gerber, age 64, has served as Executive Vice President, Operations since 2016. Previously, Mr. Gerber served as Senior Vice President and Vice President of Operations from 2010 until 2016 and Director of Operations and Manager of Illinois Operations within the Industrial Sand Division, from 2004 until 2010. Prior to joining the company, Mr. Gerber was Vice President of Operations for Better Materials Corporation as well as the US Silica Corporation. He currently serves as the Vice Chairman of National Industrial Sand Association. Mr. Gerber received a B.S. in Mining Engineering from the University of Wisconsin-Platteville.

David J. Crandall, age 50, has served as Executive Vice President, General Counsel and Secretary since January 2017. Previously, Mr. Crandall served as Sr. Vice President, General Counsel and Secretary from January 2016 to December 2016 and Vice President, General Counsel and Secretary from January 2011 to December 2015. Prior to joining Fairmount Santrol, he was a Partner at Calfee, Halter & Griswold, L.L.P., where he practiced general corporate and merger and acquisition law. He graduated Phi Beta Kappa, Magna Cum Laude with a B.S. in Economics from Allegheny College and graduated Cum Laude from the Syracuse University College of Law.

Mark E. Barrus, age 55, served as Interim Chief Financial Officer from October 2015 to April 2016. In this role, he served as the Company's interim principal financial officer and interim principal accounting officer. Upon the hiring of Mr. Biehl, Mr. Barrus returned to the role he has held since joining the Company in 2014 as Vice President of Accounting and Controls. He is responsible for external reporting, internal controls, compliance, and taxation. Prior to joining the Company, he was Vice President, Controller, and Principal Accounting Officer at NACCO Industries from 2013 to 2014. Before joining NACCO, Mr. Barrus was with KPMG LLP, where he had been a partner since 2002. Mr. Barrus earned both his B.S. and M. Acc. degrees with honors from Case Western Reserve University. He is a Certified Public Accountant in the State of Ohio.

PART IV

ITEM 15. EXHIBITS AND FINANCIAL STATEMENT SCHEDULES

The following documents are filed as part of this Annual Report on Form 10-K:

- A) The consolidated financial statements of Fairmount Santrol Holdings Inc. and Subsidiaries contained in Part II, Item 8 of the Annual Report on Form 10-K:
 - Consolidated Statements of Income (Loss) for the years ended December 31, 2016, 2015, and 2014
 - Consolidated Statements of Comprehensive Income (Loss) for the years ended December 31, 2016, 2015, and 2014
 - Consolidated Balance Sheets as of December 31, 2016 and 2015
 - Consolidated Statements of Equity for the years ended December 31, 2016, 2015, and 2014
 - Consolidated Statements of Cash Flows for the years ended December 31, 2016, 2015, and 2014
- B) Schedule II – Valuation and Qualifying Accounts and Reserves for the years ended December 31, 2016, 2015, and 2014, contained on page 107 of this Annual Report on Form 10-K
- C) The exhibits listed in the Exhibit Index beginning on page 108 of this Annual Report on Form 10-K

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 on March 9, 2017.

FAIRMOUNT SANTROL HOLDINGS INC.

By: /s/ Jenniffer D. Deckard
Jenniffer D. Deckard
President, Chief Executive Officer

Pursuant to the requirements of the 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.

<u>Name</u>	<u>Title</u>	<u>Date</u>
<u>/s/ Jenniffer D. Deckard</u> Jenniffer D. Deckard	President, Chief Executive Officer, and Director (Principal Executive Officer)	March 9, 2017
<u>/s/ Michael F. Biehl</u> Michael F. Biehl	Executive Vice President and Chief Financial Officer (Principal Financial Officer and Principal Accounting Officer)	March 9, 2017
<u>/s/ William E. Conway</u> William E. Conway	Director	March 9, 2017
<u>/s/ Michael G. Fisch</u> Michael G. Fisch	Director	March 9, 2017
<u>/s/ Charles D. Fowler</u> Charles D. Fowler	Director	March 9, 2017
<u>/s/ Stephen J. Hadden</u> Stephen J. Hadden	Director	March 9, 2017
<u>/s/ Michael C. Kearney</u> Michael C. Kearney	Director	March 9, 2017
<u>/s/ William P. Kelly</u> William P. Kelly	Director	March 9, 2017
<u>/s/ Matthew F. LeBaron</u> Matthew F. LeBaron	Director	March 9, 2017
<u>/s/ Michael E. Sand</u> Michael E. Sand	Director	March 9, 2017
<u>/s/ Lawrence N. Schultz</u> Lawrence N. Schultz	Director	March 9, 2017

Fairmount Santrol Holdings Inc. and Subsidiaries
Schedule II – Valuation and Qualifying Accounts and Reserves
Years Ended December 31, 2016, 2015, and 2014
(in thousands)

	<u>Beginning Balance</u>	<u>Charged to Cost and Expenses</u>	<u>Charged to Other Accounts</u>	<u>Deductions</u>	<u>Ending Balance</u>
Allowance for Doubtful Accounts:					
Year ended December 31, 2016	\$ 2,470	\$ 1,851	\$ -	\$ (1,266)	\$ 3,055
Year ended December 31, 2015	4,255	1,968	-	(3,753)	2,470
Year ended December 31, 2014	796	3,605	-	(146)	4,255
Valuation Allowance for Net Deferred Tax Assets:					
Year ended December 31, 2016	\$ 27,230	\$ -	\$ -	\$ (5,271)	\$ 21,959
Year ended December 31, 2015	1,309	25,921	-	-	27,230
Year ended December 31, 2014	-	1,309	-	-	1,309

FAIRMOUNT SANTROL HOLDINGS INC.
EXHIBIT INDEX

The following Exhibits are filed with this Annual Report on Form 10-K or are incorporated by reference to a prior filing in accordance with Rule 12b-32 under the Securities and Exchange Act of 1934. All Exhibits not so designated are incorporated by reference to a prior filing as indicated.

(x) Filed herewith

(*) Management contract or compensatory plan or arrangement

<u>Exhibit No.</u>	<u>Description</u>
2.1	Interests Purchase Agreement, dated as of April 30, 2013, by and among Fairmount Minerals, Ltd., Soane Energy LLC and Self-Suspending Proppant LLC (incorporated by reference to Exhibit 2.1 on Form S-1, filed on September 18, 2014).
3.1	Form of Third Amended and Restated Certificate of Incorporation of FMSA Holdings Inc. (incorporated by reference to Exhibit 3.1 on Form S-1, filed on September 18, 2014).
3.2	Form of Fourth Amended and Restated Bylaws of FMSA Holdings Inc. (incorporated by reference to Exhibit 3.2 on Form S-1, filed on September 18, 2014).
3.3	Certificate of Amendment of the Third Amended and Restated Certificate of Incorporation of FMSA Holdings Inc., filed July 17, 2015 (incorporated by reference to Exhibit 3.1 on Form 8-K, filed July 21, 2015).
4.1	Specimen Common Stock Certificate (incorporated by reference to Exhibit 4.1 on Form S-1, filed on September 26, 2014).
10.1	Second Amended and Restated Credit and Guaranty Agreement dated as of September 5, 2013 by and among Fairmount Minerals, Ltd., Fairmount Minerals Holdings, Inc., certain subsidiaries of Fairmount Minerals, Ltd., Lake Shore Sand Company (Ontario) Ltd., the Lenders party thereto from time to time, Barclays Bank PLC, as Administrative Agent, as Collateral Agent and as Revolving Administrative Agent and the other agents referred to therein (incorporated by reference to Exhibit 10.1 on Form S-1, filed on August 22, 2014).
10.2	Amendment Agreement dated as of September 5, 2013 by and among Fairmount Minerals, Ltd., Fairmount Minerals Holdings, Inc., certain subsidiaries of Fairmount Minerals, Ltd., Lake Shore Sand Company (Ontario) Ltd., the Lenders party thereto from time to time, Barclays Bank PLC, as Administrative Agent and as Collateral Agent and the other agents referred to therein (incorporated by reference to Exhibit 10.2 on Form S-1, filed on August 22, 2014).
10.3	First Amendment to Second Amended and Restated Credit and Guaranty Agreement dated as of March 27, 2014 by and among Fairmount Minerals, Ltd., Fairmount Minerals Holdings, Inc., certain subsidiaries of Fairmount Minerals, Ltd., Lake Shore Sand Company (Ontario) Ltd., the Lenders party thereto from time to time, Barclays Bank PLC, as Administrative Agent, as Collateral Agent and as Revolving Administrative Agent and the other agents referred to therein (incorporated by reference to Exhibit 10.3 on Form S-1, filed on August 22, 2014).
10.4	Joinder Agreement, dated as of February 14, 2014 by and among Barclays Bank PLC, Fairmount Minerals, Ltd., as borrower representative and Barclays Bank PLC, as administrative agent (incorporated by reference to Exhibit 10.4 on Form S-1, filed on August 22, 2014).
10.5	Joinder Agreement, dated as of August 29, 2014 by and among Barclays Bank PLC, Morgan Stanley Bank, N.A., Wells Fargo Bank, National Association, Goldman Sachs Bank USA, Jefferies Finance LLC, Keybank National Association and Royal Bank of Canada (collectively, the "Incremental Revolving Loan Lenders"), Fairmount Santrol Inc., as borrower representative and Barclays Bank PLC, as administrative agent (incorporated by reference to Exhibit 10.5 on Form S-1, filed on September 15, 2014).

<u>Exhibit No.</u>	<u>Description</u>
10.6	Joinder Agreement, dated as of September 18, 2014 by and among JPMorgan Chase Bank, N.A. (the "Incremental Revolving Loan Lender"), Fairmount Santrol Inc., as borrower representative and Barclay's Bank PLC, as administrative agent (incorporated by reference to Exhibit 10.6 on Form S-1, filed on September 22, 2014).
10.7	Form of Fourth Amended and Restated Stockholders Agreement (incorporated by reference to Exhibit 10.7 on Form S-1, filed on September 18, 2014).
10.8*	Form of Indemnification Agreement (incorporated by reference to Exhibit 10.8 on Form S-1, filed on September 18, 2014).
10.9*	Form of FMSA Holdings Inc. Non-Qualified Stock Option Plan (incorporated by reference to Exhibit 10.9 on Form S-1, filed on September 18, 2014).
10.10*	Form of Stock Option Agreement for FMSA Holdings Inc. Non-Qualified Stock Option Plan (incorporated by reference to Exhibit 10.9 on Form S-1, filed on September 18, 2014).
10.11*	Amendment I to the FMSA Holdings Inc. Non-Qualified Stock Option Plan Stock Option Agreement (incorporated by reference to Exhibit 10.10 on Form S-1, filed on September 18, 2014).
10.12*	Form of FMSA Holdings Inc. Long Term Incentive Compensation Plan (incorporated by reference to Exhibit 10.11 on Form S-1, filed on September 18, 2014).
10.13*	Form of Stock Option Agreement for FMSA Holdings Inc. Long Term Incentive Compensation Plan (incorporated by reference to Exhibit 10.12 on Form S-1, filed on September 18, 2014).
10.14*	Amendment I to the FMSA Holdings Inc. Long Term Incentive Compensation Plan Stock Option Agreement (incorporated by reference to Exhibit 10.13 on Form S-1, filed on September 18, 2014).
10.15*	Form of FMSA Holdings Inc. Stock Option Plan (incorporated by reference to Exhibit 10.14 on Form S-1, filed on September 18, 2014).
10.16*	Form of Stock Option Agreement for FMSA Holdings Inc. Stock Option Plan (incorporated by reference to Exhibit 10.15 on Form S-1, filed on September 18, 2014).
10.17*	Amendment I to the FMSA Holdings Inc. Stock Option Agreement (incorporated by reference to Exhibit 10.16 on Form S-1, filed on September 18, 2014).
10.18*	Form of FMSA Holdings Inc. 2014 Long Term Incentive Plan (incorporated by reference to Exhibit 10.17 on Form S-1, filed on September 18, 2014).
10.19*	Form of Stock Option Agreement for FMSA Holdings Inc. 2014 Long Term Incentive Plan (incorporated by reference to Exhibit 10.18 on Form S-1, filed on September 18, 2014).
10.20*	Form of Notice of Grant of Stock Option for FMSA Holdings Inc. 2014 Long Term Incentive Plan (incorporated by reference to Exhibit 10.19 on Form S-1, filed on September 18, 2014).
10.21*	Form of Restricted Stock Unit Agreement for FMSA Holdings Inc. 2014 Long Term Incentive Plan (incorporated by reference to Exhibit 10.21 on Form S-1, filed on September 18, 2014).
10.22*	Form of Notice of Grant of Restricted Stock Unit for FMSA Holdings Inc. 2014 Long Term Incentive Plan (incorporated by reference to Exhibit 10.22 on Form S-1, filed on September 18, 2014).
10.23	Third Amendment to Second Amended and Restated Credit and Guaranty Agreement, dated as of April 30, 2015, among Fairmount Santrol Inc., the signatories thereto, and Barclays Bank plc, as administrative agent (incorporated by reference to Exhibit 10.1 on Form 8-K, filed on May 5, 2015).

<u>Exhibit No.</u>	<u>Description</u>
10.24	Fourth Amendment to the Second Amended and Restated Credit and Guaranty Agreement, dated as of May 15, 2015, among Fairmount Santrol Inc., the lenders party thereto, and Barclays Bank plc as administrative agent (incorporated by reference to Exhibit 10.1 on Form 8-K, filed on May 20, 2015).
10.25	Fifth Amendment to Second Amended and Restated Credit and Guaranty Agreement, dated as of September 30, 2015, among Fairmount Santrol Inc., the Revolving Lenders party hereto, and Barclays Bank plc, as administrative agent and revolving administrative agent (incorporated by reference to Exhibit 10.1 on Form 8-K, filed on October 1, 2015).
10.26*	Form of Executive Change in Control Severance Plan (incorporated by reference to Exhibit 10.1 on Form 8-K, filed on December 16, 2015).
10.27*	Omnibus Amendment to Outstanding Stock Option Agreements under the FMSA Holdings Inc. 2014 Long Term Incentive Plan (incorporated by reference to Exhibit 10.2 on Form 8-K, filed on December 16, 2015).
10.28*	Omnibus Amendment to Outstanding Restricted Stock Unit Agreements under the FMSA Holdings Inc. 2014 Long Term Incentive Plan (incorporated by reference to Exhibit 10.3 on Form 8-K, filed on December 16, 2015).
10.29	Amendment No. 1 to the Interests Purchase Agreement dated April 30, 2013, by and among Fairmount Minerals Ltd. (n/k/a Fairmount Santrol Inc.), Soane Energy LLC and Self-Suspending Proppant LLC, dated December 17, 2015 (incorporated by reference to Exhibit 10.1 on Form 8-K, filed on December 18, 2015).
10.30	Omnibus Amendment, dated May 20, 2016, to the Interests Purchase Agreement, dated April 30, 2013, by and among Fairmount Minerals, Ltd., Soane Energy LLC, and Self-Suspending Proppant LLC (incorporated by reference to Exhibit 10.3 on Form 10-Q, filed on August 4, 2016).
10.31(x)	Second Omnibus Amendment, dated September 9, 2016, to the Interests Purchase Agreement, dated April 30, 2013, by and among Fairmount Minerals, Ltd., Soane Energy LLC, and Self-Suspending Proppant LLC.
10.32*	Omnibus Amendment to Outstanding Stock Option Agreements under FMSA Holdings Inc. 2006 Long Term Incentive Compensatory Plan (incorporated by reference to Exhibit 10.1 on Form 10-Q, filed on November 3, 2016).
10.33*	Omnibus Amendment to Outstanding Stock Option Agreements under FMSA Holdings Inc. 2010 Stock Option Plan (incorporated by reference to Exhibit 10.2 on Form 10-Q, filed on November 3, 2016).
10.34*	Amended and Restated Omnibus Amendment to Outstanding Stock Option Agreements under FMSA Holdings Inc. 2014 Long Term Incentive Plan (incorporated by reference to Exhibit 10.3 on Form 10-Q, filed on November 3, 2016).
10.35*	Severance Agreement by and between Fairmount Santrol Holdings Inc. and Michael F. Biehl, dated May 6, 2016 (incorporated by reference to Exhibit 10.1 to Form 10-Q, filed on May 10, 2016).
10.36	Sixth Amendment to Second Amended and Restated Credit and Guaranty Agreement, dated as of April 28, 2016, among Fairmount Santrol Inc., the lenders party thereto, and Barclays Bank plc, as administrative agent (incorporated by reference to Exhibit 10.1 on Form 8-K, filed on May 2, 2016).
10.37(x)	Amendment No. 1 to the FMSA Holdings Inc. 2014 Long Term Incentive Plan, dated February 1, 2017, by Fairmount Santrol Holdings Inc.
21.1(x)	List of Subsidiaries of Fairmount Santrol Holdings Inc.
23.1(x)	Consent of Independent Registered Public Accounting Firm, PricewaterhouseCoopers LLP.
31.1(x)	Certification pursuant to Rule 13a-14(a) or 15d-14(a) of the Principal Executive Officer.

<u>Exhibit No.</u>	<u>Description</u>
31.2(x)	Certification pursuant to Rule 13a-14(a) or 15d-14(a) of the Principal Financial Officer.
32.1(x)	Statement Required by 18 U.S.C. Section 1350 by the Principal Executive Officer.
32.2(x)	Statement Required by 18 U.S.C. Section 1350 by the Principal Financial Officer.
95.1(x)	Mine Safety Disclosure Exhibit
99.1(x)	Consent of GZA GeoEnvironmental, Inc.
101.INS(x)	XBRL Instance Document
101.SCH(x)	XBRL Taxonomy Extension Schema Document
101.CAL(x)	XBRL Taxonomy Extension Calculation Linkbase Document
101.DEF(x)	XBRL Taxonomy Extension Definition Linkbase Document
101.LAB(x)	XBRL Taxonomy Extension Label Linkbase Document
101.PRE(x)	XBRL Taxonomy Extension Presentation Linkbase Document

SECOND OMNIBUS AMENDMENT

THIS SECOND OMNIBUS AMENDMENT (this “Amendment”) effective as of September 9, 2016, by and among SELF-SUSPENDING PROPPANT LLC, a Delaware limited liability company (the “Company”), FAIRMOUNT SANTROL INC. (f/k/a Fairmount Minerals, Ltd.), a Delaware corporation (“Buyer”), SOANE ENERGY LLC, a Delaware limited liability company (“Seller”), SOANE LABS LLC, a Delaware limited liability company (“Soane Labs”), and Dr. David Soane (“Soane”). The Company, Buyer, Seller, Soane Labs and Soane are sometimes herein referred to individually as a “Party” and collectively as the “Parties”.

RECITALS

WHEREAS, Seller, Buyer and the Company have entered into the Interests Purchase Agreement, dated April 30, 2013 (as amended and in effect, the “Purchase Agreement”);

WHEREAS, in connection with the Purchase Agreement and the transactions contemplated thereby, (a) the Company and Soane Labs have entered into the License Agreement, made and effective as of April 30, 2013 (as amended, the “Seller License Agreement”) and (b) Buyer, Seller, Soane Labs and Soane have entered into a letter agreement dated April 30, 2013 (the “Soane Side Letter”);

WHEREAS, Seller and the Company have entered into a Services Agreement pursuant to which Seller will provide certain services to the Company (as amended and in effect, the “New Services Agreement”), effective as of March 2, 2016;

WHEREAS, in connection with such New Services Agreement, Seller, Buyer, the Company, Soane Labs and Soane entered into an Omnibus Amendment, effective as of May 20, 2016 (the “Omnibus Amendment”), pursuant to which certain amendments were made to the Purchase Agreement, the Seller License Agreement and the Soane Side Letter; and

WHEREAS, the Parties desire to (i) further amend the Seller License Agreement, the Soane Side Letter and the Purchase Agreement to conform to the provisions in the New Services Agreement and the Omnibus Amendment and (ii) amend the term of the New Services Agreement.

NOW, THEREFORE, in consideration of the mutual covenants and obligations contained herein, the Parties hereby agree as follows:

1. Section 1.04 of the Seller License Agreement shall be amended and restated in its entirety to read as follows:

““Contributed Technology” means Technology included in the Contributed Assets as well as any Technology included in the Newly Developed IP (as defined in any of the Services Agreements) developed by Seller for Licensor under any of the Services Agreements.”

2. Section 1.09 of the Seller License Agreement shall be amended and restated in its entirety to read as follows:

““ Licensed Copyrights ” means any and all Copyrights in any and all Technology and other Know-How included in the (i) Contributed Assets or (ii) Newly Developed IP under any of the Services Agreements.”

3. Section 1.11 of the Seller License Agreement shall be amended and restated in its entirety to read as follows:

““ Licensed Know-How ” means any and all Technology and other Know-How included in the (i) Contributed Assets or (ii) Newly Developed IP under any of the Services Agreements.”

4. Section 1.12 of the Seller License Agreement shall be amended and restated in its entirety to read as follows:

““ Licensed Patents ” means any and all (i) Patents included in the Contributed Assets, and (ii) other than any Licensor Assigned Patents, Licensee Assigned Patents or Licensor Assumed Patents, Patents that are filed by or issued to Licensor after the Effective Date and that (a) issue from or claim priority to any of the Patents included in the Contributed Assets, (b) claim any Intellectual Property, including the Newly Developed IP under any of the Services Agreements arising from Seller’s performance of its obligations under any of the Services Agreements, and/or (c) claim any of the Licensed Know-How.”

5. Section 1.17 of the Seller License Agreement shall be amended and restated in its entirety to read as follows:

““ Proppant ” means a substrate of sand, resin-coated sand, ceramic, or any other particulate material having a density of 2 gm/cc or more, carrying a hydrogel or non-hydrogel coating embodying a self-suspending attribute, for use as a proppant in fracturing applications in the oil and gas industry.”

6. Section 4.01 of the Seller License Agreement shall be amended and restated in its entirety to read as follows:

““ Confidential Information . In performing the obligations and permitted activities under this Agreement, each Party (“ Disclosing Party ”) may disclose or make available to the other Party (“ Receiving Party ”) certain confidential or proprietary information of Disclosing Party. For purposes of this License Agreement, “ Confidential Information ” means, subject to the exceptions set forth in Section 4.03 hereof, any Know-How which relates to the Technology, any of the Contributed Assets or any Newly Developed IP developed under any of the Services Agreements and other information and data, whether in written, oral, graphical, machine-readable or other form, disclosed or made available under, or in connection with, this Agreement to the Receiving Party by the Disclosing Party, any of its Affiliates or any Third Party on behalf of Disclosing Party, that the Disclosing Party has either marked as confidential or proprietary, or has identified in writing as confidential or proprietary within thirty (30) days of disclosure, or which by its

nature should reasonably be considered to be confidential; provided, however, that, for the avoidance of doubt, reports and/or information related to or regarding Disclosing Party's business plans, strategies, technology and research and development will be deemed Confidential Information of the Disclosing Party even if not so marked or identified. Without limiting the foregoing, the Licensed Know-How will be considered Confidential Information of Licensor."

7. The first sentence of Section 8.4(b) of the Purchase Agreement shall be amended and restated in its entirety to read as follows:

"In further consideration of the consummation of the transactions contemplated herein, Seller covenants and agrees that as of the Closing and until the earlier of (x) the last day of the Earn-Out Period; or (y) the occurrence of the Interim Transfer Date or the Final Transfer Date (the "Restriction Period"), Seller will not, anywhere in the world, either directly or indirectly, whether or not for consideration: (i) practice any invention, publish any work of authorship or use any mark included within the Seller IP Assets or the Newly Developed IP (as defined in any of the Services Agreements) in the Restricted Field (except in the performance of the services pursuant to the Services Agreement); (ii) prevent or otherwise restrict Buyer from developing and commercializing in the Restricted Field the Technology or the Products, utilizing the Seller IP Assets or the Newly Developed IP (as defined in any of the Services Agreements) in the Restricted Field, or obtaining patents, trademarks or other intellectual property protection in the Restricted Field on any portion of the Seller IP Assets or the Newly Developed IP (as defined in any of the Services Agreements); or (iii) operate, develop, or perform any business activity or service in the Restricted Field, either financially or as an employee, officer, director, partner, independent contractor, joint developer, consultant, licensor, owner (other than the passive-ownership of less than two percent (2%) of the equity securities of a publicly traded company or through the passive ownership through investments made by Phoenix Venture Partners in which Dr. Soane (x) has recused himself from the investment decision and (y) was not and is not involved directly or indirectly in the management, oversight or operation of, or provision of services to, such investment), or in any other capacity perform services related to or in competition with the Technology in or for, any business in the Restricted Field.

8. Definition of "Proppant" in Article 10 of the Purchase Agreement shall be amended and restated in its entirety to read as follows:

"Proppant" means a substrate of sand, resin-coated sand, ceramic, or any other particulate material having a density of 2 gm/cc or more, carrying a hydrogel or non-hydrogel coating embodying a self-suspending attribute, for use as a proppant in fracturing applications in the oil and gas industry."

9. Article 10 of the Purchase Agreement shall be amended by inserting the following definition in alphabetical order:

"Services Agreements" means (a) the Services Agreement and (b) the New Services (each as amended and in effect)."

10. Section 1.17 of Exhibit E to the Purchase Agreement (Buyer License Agreement) shall be amended and restated in its entirety to read as follows:

““ Proppant ” means a substrate of sand, resin-coated sand, ceramic, or any other particulate material having a density of 2 gm/cc or more, carrying a hydrogel or non-hydrogel coating embodying a self-suspending attribute, for use as a proppant in fracturing applications in the oil and gas industry.”

11. Section 1.11 of Exhibit E to the Purchase Agreement (Buyer License Agreement) shall be amended and restated in its entirety to read as follows:

““ Licensed Patents ” means, other than any Licensor Assigned Patents, Licensor Assumed Patents or Licensee Assigned Patents (as such terms are defined in the Seller License Agreement), (i) the Patents identified on Appendix A attached hereto, and (ii) any and all other Patents that are filed by or issued to Licensor after the Effective Date and that (a) issue from or claim priority to any of the Patents identified on Appendix A with uses in the Field, (b) claim any Intellectual Property, including the Newly Developed IP under any of the Services Agreements arising from Soane Energy’s performance of its obligations under any of the Services Agreements, and/or (c) claim any of the Licensed Know-How.”

12. Section 1.19 of Exhibit E to the Purchase Agreement (Buyer License Agreement) shall be amended and restated in its entirety to read as follows:

““ Services Agreement ” means (a) the Services Agreement between Soane Energy and Licensor having an effective date of April 30, 2013 and (b) the New Services Agreement between Soane Energy and Licensor, effective as of March 2, 2016 (each as amended and in effect).”

13. The first sentence of Section 1(b) of the Soane Side Letter shall be amended and restated in its entirety to read as follows:

“In further consideration of the consummation of the transactions contemplated in the Purchase Agreement, the Soane Parties covenant and agree that as of the Closing and until the earlier of (x) the last day of the Earn-Out Period; or (y) the occurrence of the Interim Transfer Date or the Final Transfer Date (the “ Restriction Period ”), the Soane Parties will not, anywhere in the world, either directly or indirectly, whether or not for consideration: (i) practice any invention, publish any work of authorship or use any mark included within the Seller IP Assets or the Newly Developed IP (as defined in any of the Services Agreements) in the Restricted Field (except in the performance of the services pursuant to the Services Agreement); (ii) prevent or otherwise restrict Buyer from developing and commercializing in the Restricted Field the Technology or the Products, utilizing the Seller IP Assets or the Newly Developed IP (as defined in any of the Services Agreements) in the Restricted Field, or obtaining patents, trademarks or other intellectual property protection in the Restricted Field on any portion of the Seller IP Assets or the Newly Developed IP (as defined in any of the Services Agreements); or (iii) operate, develop, or perform any business activity or service in the Restricted Field, either financially or as an employee, officer, director, partner, independent contractor, joint

developer, consultant, licensor, owner (other than the passive-ownership of less than two percent (2%) of the equity securities of a publicly traded company or through the passive ownership through investments made by Phoenix Venture Partners in which Dr. Soane (x) has recused himself from the investment decision and (y) was not and is not involved directly or indirectly in the management, oversight or operation of, or provision of services to, such investment), or in any other capacity perform services related to or in competition with the Technology in or for, any business in the Restricted Field.”

14. Section 6.1 of the New Services Agreement shall be amended and restated in its entirety to read as follows:
“Term. Unless earlier terminated under Section 6.2 below, this Agreement shall remain in full force and effect from the Effective Date until October 31, 2016.”
15. For clarity, pursuant to the Omnibus Amendment, the Seller License Agreement was amended by deleting each reference to “the Services Agreement” set forth therein and substituting therefor “any of the Services Agreements”.
16. For clarity, pursuant to the Omnibus Amendment, the Seller License Agreement was amended by deleting the definition of “Services Agreement” set forth therein and substituting the following therefor:
““Services Agreements” means (a) the Services Agreement between Seller and Licensor dated as of April 30, 2013 and (b) the New Services Agreement between Seller and Licensor, effective as of March 2, 2016 (each as amended and in effect).”
17. Except as expressly amended or supplemented hereby, the Parties acknowledge that the Purchase Agreement, Seller License Agreement, New Services Agreement and Soane Side Letter remain in full force and effect in accordance with the provisions thereof.
18. This Amendment may be executed and delivered in multiple counterparts, each of which shall be deemed an original, and all of which together shall constitute one and the same instrument. A facsimile or other copy of a signature shall be deemed an original for purposes of this Amendment.
19. Sections 11.1 through 11.13 of the Purchase Agreement are incorporated herein by reference *mutadis mutandis* ; provided, that any amendment, waiver or modification to this Amendment that (a) relates to the terms of the Seller License Agreement shall only be effective if signed by Soane Labs and the Company or (b) relates to the terms of the Soane Side Letter shall only be effective if signed by all of the Parties.

[THE REMAINDER OF THIS PAGE IS INTENTIONALLY LEFT BLANK.]

IN WITNESS WHEREOF, the Parties have executed this Second Omnibus Amendment as of the date first written above.

SOANE LABS LLC

/s/ Martha Groves

Name: Martha Groves

Title: CFO

SOANE ENERGY LLC

/s/ Martha Groves

Name: Martha Groves

Title: CFO

DR. DAVID SOANE

/s/ David Soane

Signature Page to Second Omnibus Amendment

SELF-SUSPENDING PROPPANT LLC

/s/ David J. Crandall

Name: David J. Crandall

Title: SVP, General Counsel and Secretary

FAIRMOUNT SANTROL INC.

/s/ Jenniffer D. Deckard

Name: Jenniffer D. Deckard

Title: President and CEO

Signature Page to Second Omnibus Amendment

**AMENDMENT NO. 1 TO THE
FMSA HOLDINGS INC. 2014 LONG TERM INCENTIVE PLAN**

THIS AMENDMENT NO. 1 to the FMSA Holdings Inc. 2014 Long Term Incentive Plan is hereby adopted and made on this 1st day of February, 2017, by Fairmount Santrol Holdings Inc. (the “Company”).

WITNESSETH:

WHEREAS, the Board of Directors of the Company (the “Board”) adopted the FMSA Holdings Inc. 2014 Long Term Incentive Plan (the “Plan”) on September 11, 2014;

WHEREAS, Section 10(c) of the Plan provides that the Board may amend the Plan without the consent of stockholders unless required by law or the rules of the New York Stock Exchange; and

WHEREAS, the Board desires to amend the Plan to (i) change the name of the company to Fairmount Santrol Holdings Inc. and (ii) to prohibit expressly the Company from repricing the exercise price of any outstanding underwater option or SAR or exchanging such award with another award or cash without the approval of the Company’s stockholders.

NOW, THEREFORE, effective as of February 1, 2017, the Plan is amended as follows:

1. The first sentence of Section 1 of the Plan is hereby replaced in its entirety with the following:

“The purpose of the Fairmount Santrol Holdings Inc. 2014 Long Term Incentive Plan (the “Plan”) is to provide a means through which Fairmount Santrol Holdings Inc., a Delaware corporation (the “Company”), and its Subsidiaries may attract and retain able persons as employees, directors and consultants of the Company, and its Subsidiaries, and to provide a means whereby those persons upon whom the responsibilities of the successful administration and management of the Company, and its Subsidiaries, rest, and whose present and potential contributions to the welfare of the Company, and its Subsidiaries, are of importance, can acquire and maintain stock ownership, or awards the value of which is tied to the performance of the Company, thereby strengthening their concern for the welfare of the Company, and its Subsidiaries, and their desire to remain employed.”

2. The Plan is hereby amended by adding the following as a new Section 6(b)(iv):

“6(b)(iv) Prohibition on Repricing of Stock Options. Except as permitted under Sections 9(b) and (c) of the Plan, the terms of any outstanding Option

may not be amended without the approval of the Company's stockholders to reduce the exercise price of such outstanding Option or to cancel such outstanding Option in exchange for cash, other Awards, or an Option or SAR with an exercise price or base price that is less than the exercise price of the original Option."

3. The Plan is hereby amended by adding the following as a new Section 6(c)(v):

"6(c)(v) Prohibition on Repricing of SARs. Except as permitted under Sections 9(b) and (c) of the Plan, the terms of any outstanding SAR may not be amended without the approval of the Company's stockholders to reduce the base price of such outstanding SAR or to cancel such outstanding SAR in exchange for cash, other Awards, or an Option or SAR with an exercise price or base price that is less than the base price of the original SAR."

4. Any capitalized term not otherwise defined in this Amendment No. 1 shall have the meaning ascribed to such term in the Plan.

5. This Amendment No. 1 modifies or adds only the provisions of the Plan specified herein. All other provisions of the Plan remain in full force and effect.

FAIRMOUNT SANTROL HOLDINGS INC. AND SUBSIDIARIES
LIST OF SUBSIDIARIES AS OF DECEMBER 31, 2016

<u>Name of Subsidiary</u>	<u>Jurisdiction of Organization</u>
Fairmount Santrol Holdings Inc.	Delaware
FMSA Inc.	Delaware
Fairmount Santrol Inc.	Delaware
Fairmount Minerals Sales de Mexico, S. de R.L. de C.V.	Delaware
Santrol de Mexico, S. de R.L. de C.V.	Mexico
Santrol Australia Pty. Ltd.	Mexico
Best Sand Corporation	Australia
Best Sand of Pennsylvania, Inc.	Ohio
Cheyenne Sand Corp.	Ohio
Construction Aggregates Corporation of Michigan, Inc.	Michigan
Standard Sand Corporation	Michigan
Specialty Sands, Inc.	Michigan
Lake Shore Sand Company (Ontario) Ltd.	Michigan
Fairmount Water Solutions, LLC	Ohio
Mineral Visions Inc.	Ohio
Technisand, Inc.	Delaware
Technisand Canada Sales Ltd.	Canada
Santrol Europe ApS	Denmark
Wisconsin Industrial Sand Company, LLC	Delaware
Wisconsin Specialty Sands, Inc.	Texas
Alpha Resins, LLC	Ohio
Technimat LLC (90%)	Ohio
Santrol (Yixing) Proppant Co. Ltd (70%)	People's Republic of China
Wedron Silica Company	Ohio
Wexford Sand Co.	Michigan
Fairmount Minerals, LLC	Ohio
Black Lab, LLC	Ohio
Self-Suspending Proppant LLC	Delaware
Shakopee Sand LLC	Minnesota
FML Alabama Resin, Inc.	Ohio
FML Resin, LLC	Ohio
FML Sand, LLC	Ohio
FML Terminal Logistics, LLC	Ohio
Fairmount Logistics LLC	Texas

*** Percentages in parentheses indicate Fairmount Santrol Holdings Inc.'s ownership.

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We hereby consent to the incorporation by reference in the Registration Statement on Form S-3 (No. 333-214867) and Form S-8 (Nos. 333-199228 and 333-200355) of Fairmount Santrol Holdings Inc. of our report dated March 9, 2017, relating to the financial statements, financial statement schedule and the effectiveness of internal control over financial reporting, which appears in this Form 10-K.

/s/ PricewaterhouseCoopers LLP
Cleveland, Ohio
March 9, 2017

CERTIFICATION OF PRINCIPAL EXECUTIVE OFFICER
(Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002)

I, Jenniffer D. Deckard, certify that:

1. I have reviewed this Annual Report on Form 10-K for Fairmount Santrol Holdings Inc. for the year ended December 31, 2016;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act rules 13a-15(f) and 15d-15(f)) for the registrant and have:
 - a. Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - b. Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under or supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation for external purposes in accordance with generally accepted accounting principles;
 - c. Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - d. Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of registrant's board of directors (or persons performing the equivalent functions):
 - a. All significant deficiencies and material weaknesses in the design or operation of internal controls over financial reporting, which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - b. Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal controls over financial reporting.

Date: March 9, 2017

By: /s/ Jenniffer D. Deckard
Jenniffer D. Deckard
President and Chief Executive Officer
(Principal Executive Officer)

CERTIFICATION OF PRINCIPAL FINANCIAL OFFICER
(Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002)

I, Michael F. Biehl, certify that:

1. I have reviewed this Annual Report on Form 10-K for Fairmount Santrol Holdings Inc. for the year ended December 31, 2016;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act rules 13a-15(f) and 15d-15(f)) for the registrant and have:
 - a. Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - b. Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under or supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation for external purposes in accordance with generally accepted accounting principles;
 - c. Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - d. Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of registrant's board of directors (or persons performing the equivalent functions):
 - a. All significant deficiencies and material weaknesses in the design or operation of internal controls over financial reporting, which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - b. Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal controls over financial reporting.

Date: March 9, 2017

By: /s/ Michael F. Biehl
Michael F. Biehl
Executive Vice President and Chief Financial Officer
(Principal Financial and Accounting Officer)

**CERTIFICATION PURSUANT TO 18 U.S.C. SECTION 1350
(Pursuant to Section 906 of The Sarbanes-Oxley Act of 2002)**

In connection with the Annual Report on Form 10-K for the year ended December 31, 2016 of Fairmount Santrol Holdings Inc. (the "Company") as filed with the Securities and Exchange Commission on the date hereof (the "Report") and pursuant to 18. U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, I, Jenniffer D. Deckard, President and Chief Executive Officer of the Company, certify, that to my knowledge:

1. The Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended; and
2. The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Date: March 9, 2017

By: /s/ Jenniffer D. Deckard
Jenniffer D. Deckard
President and Chief Executive Officer
(Principal Executive Officer)

**CERTIFICATION PURSUANT TO 18 U.S.C. SECTION 1350
(Pursuant to Section 906 of The Sarbanes-Oxley Act of 2002)**

In connection with the Annual Report on Form 10-K for the year ended December 31, 2016 of Fairmount Santrol Holdings Inc. (the "Company") as filed with the Securities and Exchange Commission on the date hereof (the "Report") and pursuant to 18. U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, I, Michael F. Biehl, Executive Vice President and Chief Financial Officer of the Company, certify, that to my knowledge:

1. The Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended; and
2. The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Date: March 9, 2017

By: /s/ Michael F. Biehl
Michael F. Biehl
Executive Vice President and Chief Financial Officer
(Principal Financial and Accounting Officer)

MINE SAFETY DISCLOSURES

The following disclosures are provided pursuant to the Dodd-Frank Wall Street Reform and Consumer Protection Act (the “Act”) and Item 104 of Regulation S-K, which requires certain disclosures by companies required to file periodic reports under the Securities Exchange Act of 1934, as amended, that operate mines regulated under the Federal Mine Safety and Health Act of 1977 (the “Mine Act”).

Mine Safety Information . Whenever the Federal Mine Safety and Health Administration (“MSHA”) believes a violation of the Mine Act, any health or safety standard or any regulation has occurred, it may issue a citation which describes the alleged violation and fixes a time within which the U.S. mining operator must abate the alleged violation. In some situations, such as when MSHA believes that conditions pose a hazard to miners, MSHA may issue an order removing miners from the area of the mine affected by the condition until the alleged hazards are corrected. When MSHA issues a citation or order, it generally proposes a civil penalty, or fine, as a result of the alleged violation, that the operator is ordered to pay. Citations and orders can be contested and appealed, and as part of that process, are often reduced in severity and amount, and are sometimes dismissed. The number of citations, orders and proposed assessments vary depending on the size and type (underground or surface) of the mine as well as by the MSHA inspector(s) assigned.

The below table reflects citations and orders issued to FMSA by MSHA during the fiscal year from January 1, 2016 to December 31, 2016. The proposed assessments were obtained from the MSHA data retrieval system. The tables below do not include any orders or citations issued to independent contractors at our mines.

Mine (1)	Mine ID Number	Section	Section	Section	Section	Proposed	
		104 S&S Citations (2)	104(b) Orders (3)	104(d) Citations & Orders (4)	110(b)(2) Violations (5)	107(a) Orders (6)	Assessments (7) (\$, amounts in dollars)
Bay City	47-03519	-	-	-	-	-	1,007
Best Sand	33-00015	2	-	-	-	-	1,277
Best Southern	33-03877	2	-	-	-	-	1,609
Hager City	47-03520	-	-	-	-	-	-
Maiden Rock	47-03110	-	-	-	-	-	1,290
Menomonie	47-03512	4	-	-	-	-	1,758
Voca Sand	41-04746	16	-	2	-	-	15,102
Wedron Silica	11-01578	32	-	-	-	-	22,090
TOTALS		56	-	2	-	-	44,133

- (1) The definition of a mine under section 3 of the Mine Act includes the mine, as well as other items used in, or to be used in, or resulting from, the work of extracting minerals, such as land, structures, facilities, equipment, machines, tools, and minerals preparation facilities. Unless otherwise indicated, any of these other items associated with a single mine have been aggregated in the totals for that mine. MSHA assigns an identification number to each mine and may or may not assign separate identification numbers to related facilities such as preparation facilities. We are providing the information in the table by mine rather than MSHA identification number because that is how we manage and operate our mining business and we believe this presentation will be more useful to investors than providing information based on MSHA identification numbers.
- (2) Mine Act section 104 S&S citations shown above are for alleged violations of mandatory health or safety standards that could significantly and substantially contribute to a mine health and safety hazard. It should be noted that, for purposes of this table, S&S citations that are included in another column, such as Section 104(d) citations, are not also included as Section 104 S&S citations in this column.
- (3) Mine Act section 104(b) orders are for alleged failures to totally abate a citation within the time period specified in the citation.
- (4) Mine Act section 104(d) citations and orders are for an alleged unwarrantable failure (i.e., aggravated conduct constituting more than ordinary negligence) to comply with mandatory health or safety standards.
- (5) Mine Act section 110(b)(2) violations are for an alleged “flagrant” failure (i.e., reckless or repeated) to make reasonable efforts to eliminate a known violation of a mandatory safety or health standard that substantially and proximately caused, or reasonably could have been expected to cause, death or serious bodily injury.
- (6) Mine Act section 107(a) orders are for alleged conditions or practices which could reasonably be expected to cause death or serious physical harm before such condition or practice can be abated and result in orders of immediate withdrawal from the area of the mine affected by the condition.

(7) Represents the total dollar value of the proposed assessment from MSHA under the Mine Act including those citations and orders that are not required to be included within the above chart. Specific orders and/or citations for a Mine may not have had assessments posted to the MSHA data retrieval system or made available to the Company by MSHA.

Pattern or Potential Pattern of Violations . All received written notice from MSHA of (a) a pattern of violations of mandatory health or safety standards that are of such nature as could have significantly and substantially contributed to the cause and effect of mine health or safety hazards under section 104(e) of the Mine Act or (b) the potential to have such a pattern.

Pending Legal Actions . The number of legal actions pending before the Federal Mine Safety and Health Review Commission as of December 31, 2016 that fall into each of the following categories is as follows:

Mine	Mine ID Number	Mining Related Fatalities	Received Notice of Pattern of Violations under Section 104(e) (yes/no) (8)	Legal Actions Pending as of Last Day of Period	Legal Actions Initiated during Period	Legal Actions Resolved during Period
Bay City	47-03519	-	-	-	-	-
Best Sand	33-00015	-	-	-	-	-
Best Southern	33-03877	-	-	-	-	-
Hager City	47-03520	-	-	-	-	-
Maiden Rock	47-03110	-	-	-	-	1
Menomonie	47-03512	-	-	-	-	-
Voca Sand	41-04746	-	-	1	1	-
Wedron Silica	11-01578	-	-	-	-	2
TOTALS		-	-	1	1	3

(8) Mine Act section 104(e) written notices are for an alleged pattern of violations of mandatory health or safety standards that could significantly and substantially contribute to a mine safety or health hazard.

Mine	Mine ID Number	Contests of Citations & Orders	Contests of Proposed Penalties	Complaints for Compensation	Complaints of Discharge/ Discrimination/ Interference	Applications for Temporary Relief	Appeals of Judges Rulings
Bay City	47-03519	-	-	-	-	-	-
Best Sand	33-00015	-	-	-	-	-	-
Best Southern	33-03877	-	-	-	-	-	-
Hager City	47-03520	-	-	-	-	-	-
Maiden Rock	47-03110	-	-	-	-	-	-
Menomonie	47-03512	-	-	-	-	-	-
Voca Sand	41-04746	-	1	-	-	-	-
Wedron Silica	11-01578	-	-	-	-	-	-
TOTALS		-	1	-	-	-	-

March 9, 2017

CONSENT OF: GZA GeoEnvironmental, Inc.

The undersigned hereby consents to the references to our company's name in the form and context in which they appear in the 2016 Annual Report on Form 10-K of Fairmount Santrol Holdings Inc. ("FMSA"). We also hereby consent to the filing of this letter as an exhibit to the 2016 Annual Report on Form 10-K of FMSA.

We hereby further consent to the use in such Annual Report on Form 10-K of information contained in our reports setting forth the estimates of reserves of Fairmount Santrol Holdings Inc. as of December 31, 2016.

GZA GeoEnvironmental, Inc.

By: /s/ Mark J. Krumenacher
Name: Mark J. Krumenacher
Title: Principal, Senior Vice President