DARLING INGREDIENTS INC.
Form 10-K
February 27, 2019
UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, DC 20549

FORM 10-K

(Mark One)
/X/ ANNUAL REPORT PURSUANT TO SECTION 13 or 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934
For the fiscal year ended December 29, 2018
OR

/ / TRANSITION REPORT PURSUANT TO SECTION 13 or 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934
For the transition period from _______ to _______

Commission File Number 001-13323

DARLING INGREDIENTS INC.
(Exact name of registrant as specified in its charter)

| | |
|---|---|
| Delaware | 36-2495346 |
| (State or other jurisdiction of incorporation or organization) | (I.R.S. Employer Identification Number) |

| | |
|---|---|
| 251 O'Connor Ridge Blvd., Suite 300 | |
| Irving, Texas | 75038 |
| (Address of principal executive offices) | (Zip Code) |

Registrant's telephone number, including area code: (972) 717-0300

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

| Title of Each Class | Name of Exchange on Which Registered |
|---|---|
| Common Stock $0.01 par value per share | New York Stock Exchange (“NYSE”) |

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

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

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

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 X No ____

Indicate by check mark whether the Registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the Registrant was required to submit files). Yes X No ___

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

Indicate by check mark whether the Registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company, or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company," and "emerging growth company" in Rule 12b-2 of the Exchange Act.

| | | |
|---|---|---|
| Large accelerated filer | X | Accelerated filer |
| Non-accelerated filer | | Smaller reporting company |
| | | Emerging growth company |

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

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

As of the last day of the Registrant's most recently completed second fiscal quarter, the aggregate market value of the shares of common stock held by nonaffiliates of the Registrant was approximately $3,227,519,000 based upon the closing price of the common stock as reported on the NYSE on that day. (In determining the market value of the Registrant's common stock held by non-affiliates, shares of common stock beneficially owned by directors, officers and holders of more than 10% of the Registrant's common stock have been excluded. This determination of affiliate status is not necessarily a conclusive determination for other purposes.)

There were 164,661,675 shares of common stock, $0.01 par value, outstanding at February 20, 2019.

DOCUMENTS INCORPORATED BY REFERENCE

Selected designated portions of the Registrant's definitive Proxy Statement in connection with the Registrant's 2019 Annual Meeting of stockholders are incorporated by reference into Part III of this Annual Report.

DARLING INGREDIENTS INC. AND SUBSIDIARIES
FORM 10-K FOR THE FISCAL YEAR ENDED DECEMBER 29, 2018

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# PART I

## ITEM 1. BUSINESS

### GENERAL

Founded by the Swift meat packing interests and the Darling family in 1882, Darling Ingredients Inc. (“Darling”, and together with its subsidiaries, the “Company” or “we,” “us” or “our”) was incorporated in Delaware in 1962 under the name “Darling-Delaware Company, Inc.” Darling changed its name from “Darling-Delaware Company, Inc.” to “Darling International Inc.” on December 28, 1993, and from “Darling International Inc.” to “Darling Ingredients Inc.” on May 6, 2014. The address of Darling's principal executive office is 251 O'Connor Ridge Boulevard, Suite 300, Irving, Texas, 75038, and its telephone number at this address is (972) 717-0300.

### OVERVIEW

We are a global developer and producer of sustainable natural ingredients from edible and inedible bio-nutrients, creating a wide range of ingredients and customized specialty solutions for customers in the pharmaceutical, food, pet food, feed, industrial, fuel, bioenergy and fertilizer industries. With operations on five continents, the Company collects and transforms all aspects of animal by-product streams into useable and specialty ingredients, such as collagen, edible fats, feed-grade fats, animal proteins and meals, plasma, pet food ingredients, organic fertilizers, yellow grease, fuel feedstocks, green energy, natural casings and hides. The Company also recovers and converts recycled oils (used cooking oil and animal fats) into valuable feed and fuel ingredients, and collects and processes residual bakery products into feed ingredients. In addition, the Company provides environmental services, such as grease trap collection and disposal services to food service establishments. In fiscal 2018, the Company generated $3.4 billion in revenues and $101.5 million in net income attributable to Darling.

### North America

We are a leading provider of animal by-product processing, used cooking oil and bakery residual recycling and recovery solutions to the U.S. food industry. We operate over 135 processing and transfer facilities in the United States to produce finished products such as protein (primarily meat and bone meal (“MBM”) and poultry meal (“PM”)), meat products for the pet food industry, blood products (plasma and whole blood), collagen, fats (primarily bleachable fancy tallow (“BFT”), poultry grease (“PG”) and yellow grease (“YG”)), bakery by-products (“BBP”) and hides, as well as a range of branded and value-added products. Darling sells these products in North America and throughout the world, primarily to producers of animal feed, pet food, biodiesel, fertilizer and other consumer and industrial ingredients, including oleo-chemicals, soaps and leather goods, for use as ingredients in their products or for further processing. In the United States, Darling operates a biodiesel facility and is a partner with Valero Energy Corporation in Diamond Green Diesel, a renewable diesel facility, both of which convert used cooking oils into valuable biofuel products. In Canada, the Company operates under the name Rothsay, which is a leading recycler of animal by-products and producer of biodiesel. Rothsay processes raw materials into finished fat and protein products for use in animal feed, pet food, biodiesel, fertilizer and other ingredients and manufactures biodiesel for domestic and international markets. Rothsay has a network of five rendering plants in Manitoba, Ontario and Nova Scotia and a biodiesel operation in Quebec.

### Europe, China, Australia and South America

Darling Ingredients International, our subsidiary, is a worldwide leader in the development and production of specialty ingredients from animal by-products for applications in animal feed, pet food, fuel, bioenergy, fertilizer, food and pharmaceuticals. Darling Ingredients International operates a global network of 62 production facilities across five continents covering all aspects of animal by-product processing through five brands: Rendac (fuel), Sonac (proteins, fats, edible fats and blood products), Ecoson (bioenergy and fertilizer), Rousselot (collagen) and CTH (natural casings). Darling Ingredients International's specialized portfolio of over 320 products covers all animal origin raw material types and thereby offers a comprehensive, single source solution for suppliers. Darling Ingredients International’s rendering and specialties business has leading positions across Europe and China with European operations in the Netherlands, Belgium, Germany, Poland and Italy under the Ecoson, Rendac and Sonac brand names. Value-added products include edible fats, blood products, bone products, protein meals and fats. Rousselot is a global leading market provider of collagen for the food, pharmaceutical and technical industries with operations in Europe, the United States, South America and China. CTH is a leading natural casings company for the sausage industry with operations in Europe, China and the United States.

Operating Segments

The Company's business operates within three reportable operating segments: Feed Ingredients, Food Ingredients and Fuel Ingredients.

The Feed Ingredients operating segment includes the Company's global activities related to (i) the collection and processing of beef, poultry and pork animal by-products in North America and Europe into non-food grade oils and protein meals, (ii) the collection and processing of bakery residuals in North America into Cookie Meal®, which is predominantly used in poultry and swine rations, (iii) the collection and processing of used cooking oil in North America into non-food grade fats, (iv) the collection and processing of porcine and bovine blood in China, Europe, North America and Australia into blood plasma powder and hemoglobin, (v) the processing of selected portions of slaughtered animals into a variety of meat products for use in pet food, (vi) the processing of cattle hides and hog skins in North America, (vii) the production of organic fertilizers using protein produced from the Company’s animal by-products processing activities in North America and Europe, and (viii) the provision of grease trap services to food service establishments. Non-food grade oils and fats produced and marketed by the Company are principally sold to third parties to be used as ingredients in animal feed and pet food, as an ingredient for the production of biodiesel and renewable diesel, or to the oleo-chemical industry to be used as an ingredient in a wide variety of industrial applications. Protein meals, blood plasma powder and hemoglobin produced and marketed by the Company are sold to third parties to be used as ingredients in animal feed, pet food and aquaculture.

The Food Ingredients operating segment includes the Company's global activities related to (i) the purchase and processing of beef and pork bone chips, beef hides, pig skins, and fish skins into collagen in Europe, China, South America and North America, (ii) the collection and processing of porcine and bovine intestines into natural casings in Europe, China and North America, (iii) the extraction and processing of porcine mucosa into crude heparin in Europe, (iv) the collection and refining of animal fat into food grade fat in Europe, and (v) the processing of bones to bone chips for the collagen industry and bone ash. Collagens and collagens produced and marketed by the Company are sold to third parties to be used as ingredients in the pharmaceutical, nutriceutical, food, pet food, and technical (e.g., photographic) industries. Natural casings produced and marketed by the Company are sold to third parties to be used as an ingredient in the production of sausages and other similar food products.

The Fuel Ingredients operating segment includes the Company's global activities related to (i) the Company’s share of the results of its equity investment in Diamond Green Diesel Holdings LLC, a joint venture with Valero Energy Corporation (“Valero”) to convert animal fats, recycled greases, used cooking oil, inedible corn oil, soybean oil, or other feedstocks that become economically and commercially viable into renewable diesel (the “DGD Joint Venture”) as described in Note 2 to the Company's Consolidated Financial Statements for the period ended December 29, 2018 included herein, (ii) the conversion of animal fats and recycled greases into biodiesel in North America, (iii) the conversion of organic sludge and food waste into biogas in Europe, (iv) the collection and conversion of fallen stock and certain animal by-products pursuant to applicable E.U. regulations into low-grade energy sources to be used in industrial applications, and (v) the processing of manure into natural bio-phosphate in Europe.

For financial information about our operating segments and geographic areas, refer to Note 21 and Note 22 to the Company's Consolidated Financial Statements for the period ended December 29, 2018 included herein.

Fiscal 2018 Net External Sales

Darling’s net external sales from fiscal 2018 continuing operations by operating segment were as follows (in thousands):

| | Fiscal 2018 | Fiscal 2017 | Fiscal 2016 |
|---|---|---|---|

| | | | | | | |
|---|---|---|---|---|---|---|
| Net sales: | | | | | | |
| Feed Ingredients | $1,952,555 | 57.7 % | $2,239,492 | 61.1 % | $2,089,145 | 61.6 % |
| Food Ingredients | 1,139,126 | 33.6 | 1,156,976 | 31.6 | 1,055,725 | 31.1 |
| Fuel Ingredients | 296,045 | 8.7 | 265,783 | 7.3 | 247,058 | 7.3 |
| Total | $3,387,726 | 100.0 % | $3,662,251 | 100.0 % | $3,391,928 | 100.0 % |

OPERATIONS

Feed Ingredients Segment

Our Feed Ingredients segment consists principally of (i) our U.S. ingredients business, including our fats and proteins, used cooking oil, and trap grease collection business, the Rothsay ingredients business, and the ingredients and specialty products businesses conducted by Darling Ingredients International under the Sonac name (proteins, fats and plasma products) and (ii) our bakery residuals business.

Animal By-Products

North American Operations

Raw materials: The Company's North American animal by-products operations collect beef, poultry and pork by-products, which are collected primarily from slaughterhouses, grocery stores, butcher shops and food service establishments. These raw materials are collected in one of two manners. Certain large suppliers, such as large slaughterhouses, are furnished with bulk containers in which the raw material is loaded. We provide the remaining suppliers, primarily grocery stores and butcher shops, with containers in which to deposit the raw material. The containers are picked up by, or emptied into, the Company’s trucks on a periodic basis. The type and frequency of service is determined by individual supplier requirements, the volume of raw material generated by the supplier, supplier location and weather, among other factors. The raw materials we collect are transported either directly to a processing plant or to a transfer station where materials from several collection routes are loaded into trailers and transported to a processing plant. These raw materials are delivered to plants for processing usually within 24 hours of collection to deter spoilage.

In North America, we also collect used cooking oil from and service grease traps at restaurants, food service establishments and grocery stores. Used cooking oil is heated, settled, and purified for use as an animal feed additive or is further processed into biodiesel. Products derived from used cooking oil include YG, biodiesel, and Fat for Fuel®, which uses grease as a fuel source for industrial boilers and dryers. Many of our customers operate stores that are part of national chains. Used cooking oil from food service establishments is placed in various sizes and types of containers that we supply. In some instances, these containers are unloaded directly onto our trucks, while in other instances used cooking oil is pumped through a vacuum hose into the truck. We provide several types of containers, for used cooking oil collection to food service establishments, which are proprietary self-contained collection systems that are housed either inside or outside the establishment, with the used cooking oil pumped directly into collection vehicles via an outside valve. The frequency of all forms of used cooking oil collection is determined by the volume of oil generated by the food service establishment. We collect and transport trap grease to waste treatment centers. We provide our customers with a comprehensive set of solutions to their trap grease disposal needs, including manifests for regulatory compliance, computerized routing for consistent cleaning and comprehensive trap cleaning.

Processing operations: We produce finished products primarily through the grinding, cooking, separating, drying, and blending of various raw materials. The process starts with the collection of animal by-products, including fat, bones, feathers, offal and other animal by-products. The animal by-products are ground and heated to evaporate water and separate fats from animal tissue, as well as to sterilize and make the material suitable as an ingredient for animal feed. The separated fats, tallows and greases are then centrifuged and/or refined for purity. The remaining solid product is pressed to remove additional oils to create protein meals. The protein meal is then sifted through screens and ground further if necessary to produce an appropriately sized protein meal. The primary finished products derived from the processing of animal by-products are MBM, PM (both feed grade and pet food), PG, tallow, feather meal and blood meal. In addition, at certain of our facilities, we are able to operate multiple process lines simultaneously, which provides us with the flexibility and capacity to manufacture a line of premium and value-added products in addition to our principal finished products. Because of these processing controls, we are able to produce premium products that typically have higher protein and energy content and lower moisture than standard finished products, and such products command premium prices.

International Operations

Darling Ingredients International's ingredients and specialty products businesses are operated under the Sonac name by our Sonac C3 and Sonac Blood business activities. The Sonac ingredients and specialty products businesses of Darling Ingredients International operate similarly to our North American ingredients division. However, the Sonac businesses, with the exception of Sonac C3, further separate raw material streams to add additional value to each stream.

- Sonac C3 processes animal by-products collected primarily from slaughterhouses, into proteins and fats for applications used in the pet food, feed, technical, biofuels and oleo-chemical markets. Oleo-chemical producers use fats to produce specialty ingredients used in paint, rubber, paper, concrete, plastics and a variety of other consumer and industrial products.

- Sonac Blood processes bovine, porcine and ovine blood by separating blood into plasma and hemoglobin and produces specialized end products for application in the feed and pet food markets. Sonac Blood's end products include plasma, fibrimex, globin and hemin.

Bakery Residuals

The Company is a leading processor of bakery residuals in the United States. The bakery residuals division, which operates solely in the United States, collects bakery residual materials and processes the raw materials into BBP, including Cookie Meal®, an animal feed ingredient primarily used in poultry and swine rations.

Raw materials: Bakery residuals are collected from large commercial bakeries that produce a variety of products, including cookies, crackers, cereal, bread, dough, potato chips, pretzels, sweet goods and biscuits. The Company collects these materials by bulk loading onsite at the bakeries utilizing proprietary equipment, the majority of which is designed, engineered, manufactured and installed by us. All of the bakery residual that the Company collects is bulk loaded, which we believe represents a significant advantage over competitors that receive a large percentage of raw materials from less efficient, manual methods. The receipt of bulk-loaded bakery residual allows us to significantly streamline our bakery recycling process, reduce personnel costs, and maximize freight savings by hauling more tons per load.

Processing operations: The highly automated bakery residuals production process involves sorting and separating raw material, mixing it to produce the appropriate nutritional content, drying it to reduce excess moisture, and grinding it to the consistency of animal feed. During the bakery residual process, packaging materials are removed. The packaging material is fed into a combustion chamber along with sawdust, and heat is produced. This heat is used in the dryers to remove moisture from the raw materials that have been partially ground. Finally, the dried meal is ground to the specified granularity. The finished product, which is continually tested to ensure that the caloric and nutrient contents meet specifications, is a nutritious additive used in animal feed.

Other Products

Our Feed Ingredients segment also includes the Company's hides businesses and the organic fertilizer business conducted under the Nature Safe® name.

- Our hides operations process hides and skins from beef and hog processors, respectively, into outputs used in commercial applications, such as the leather industry. We sell treated hides and skins to external customers, the majority of which are tanneries. Fresh and salted hides and fresh skins are sold to tanneries, automotive companies, leather processors and to the shoe and furniture industries in Italy, Germany and China.

- Our fertilizer operations utilize finished products from our animal by-products division to manufacture organic fertilizers from ingredients approved by the U.S. Department of Agriculture ("USDA") to be used in organic farming which contain no waste by-products (i.e., sludge or sewage waste). The Company's North American fertilizer products are predominantly sold to golf courses, sports facilities, organic farms and landscaping companies.

Food Ingredients Segment

Our Food Ingredients segment consists principally of (i) the collagen business conducted by Darling Ingredients International under the Rousselot name, (ii) the natural casings and meat by-products business conducted by Darling Ingredients International under the CTH name and (iii) certain specialty products businesses conducted by Darling Ingredients International under the Sonac name.

Collagen

Rousselot is a global leading market provider of collagen for the food, nutritional pharmaceutical and technical (e.g., photographic) industries with operations in Europe, China, South America and the United States. Rousselot has a network of 11 production plants and 7 sales locations, covering sales into more than 75 countries. With the Rousselot collagen business, the Company is part of the growing global collagen market. Collagen is a functional ingredient, which means that it has a role in the end product by adding a critical property to it that is largely non-substitutable. Collagen is used in a large variety of end products, but only small amounts are used in most products. Currently, available substitutes are limited and do not have the broad functionality required for most usages. Rousselot collagen products have higher sales prices relative to the Company’s other end products, but comprise a minimal portion of the cost of final products in many segments, for example the pharmaceutical end markets. We believe many end customers focus on collagen quality and consistency, supply reliability, application know-how and regulatory support and are therefore relatively less price sensitive to collagen products. Rousselot’s profitability is mainly driven by its ability to timely transfer increases in net raw materials costs to its customers in order to realize a relatively stable added value per kilogram of collagen, in combination with a strong focus on operations excellence and product quality. Rousselot is involved in all four types of collagen (pigskin, hide, bone and fish). Raw material prices are mainly driven by the availability and quality of raw material, and sales prices are mainly driven by market demand and the expected availability of collagen supply. As such, securing sufficient raw material positions is key to the business. Rousselot enters into formal arrangements related to raw material purchases that differ by raw material type, by duration and by regional area. Rousselot markets its hydrolyzed collagen under the “Peptan” brand; this fast-growing specialty ingredient is positioned specifically towards nutritional supplement customers focusing on improved bone, joint and skin health.

Natural Casings and Meat By-Products

The CTH business of Darling Ingredients International is a leading natural casings company for the sausage business with operations in Europe, China and the United States. The activities of this business are divided into two categories:

- CTH Casings harvests, sorts and sells hog and sheep casings for worldwide food markets, particularly sausage manufacturers, and harvests, processes and sells hog and beef bowel package items for global pharmaceutical, food and feed market segments. CTH holds a leading position in the highly fragmented global casings market.

- CTH Meat By-Products harvests, purchases and processes hog, sheep and beef meat for customers in the global food and European pet food industries. In the meat by-products market, CTH is a major player with established sales networks in Europe and Asia.

Other Specialty Products

In addition, our Food Ingredients segment includes the Sonac bone, heparin and edible fat businesses currently operated by Darling Ingredients International under the Sonac name:

- Sonac Fat primarily melts, refines and packages animal fat into food grade fat for the food markets.

- Sonac Bone processes porcine bones into fat, bone protein, glue, bone ash and bone chips for the feed, pet food, food and collagen industries.

- Sonac Heparin extracts crude heparin from hydrolyzed mucosa for application in the pharmaceutical industry.

Fuel Ingredients Segment

Our Fuel Ingredients segment consists of (i) our investment in the DGD Joint Venture, (ii) our biofuel business conducted under the Dar Pro® and Rothsay names and (iii) the bioenergy business conducted by Darling Ingredients International under the Ecoson and Rendac names.

Diamond Green Diesel

The DGD Joint Venture commenced operations in June 2013. The DGD Joint Venture operates a renewable diesel plant (the “DGD Facility”) located in Norco, Louisiana capable of processing approximately 20,000 barrels per day of input feedstock to produce renewable diesel fuel and certain other co-products. We account for the DGD Joint Venture as an “investment in unconsolidated subsidiary.” The DGD Joint Venture operates the DGD Facility, which converts animal fats and used cooking oils, which are supplied in part by us, and other feedstocks that become economically and commercially viable, such as inedible corn oil and soybean oil, into renewable diesel. The DGD Facility uses an advanced hydroprocessing-isomerization process licensed from UOP LLC, known as the Ecofining™ Process, and a pretreatment process developed by the Desmet Ballestra Group designed to convert approximately 2.3 billion pounds per year of feedstocks into renewable diesel and certain other co-products. The Diamond Green Diesel renewable diesel product is sold to refiners under the Diamond Green Diesel® name to be blended with diesel fuel and is interchangeable with diesel produced from petroleum. For 2017, 2016 and 2015, biodiesel blenders registered with the Internal Revenue Service were eligible for a tax incentive in the amount of $1.00 per gallon of renewable diesel blended with petroleum diesel to produce a mixture containing 0.1% diesel fuel. As a blender, the DGD Joint Venture has recorded approximately $160.4 million (received retroactively in fiscal 2018) and $160.6 million of blenders tax credits for fiscal 2017 and 2016, respectively, with Darling's portion equaling 50%. Although the blenders tax credits expired on December 31, 2016, in February 2018 they were retroactively reinstated for calendar year 2017. However, to date the blenders tax credits have not been extended and are therefore at risk for calendar year 2018 and into the future. In August 2018, the DGD Joint Venture completed an expansion project that increased the DGD Facility's annual production capacity from 160 million gallons of renewable diesel to 275 million gallons and expanded outbound logistics for servicing the many developing low carbon fuel markets around North

America and worldwide. In November 2018, the joint venture partners approved the DGD Joint Venture moving forward with another expansion project, which is expected to grow the facility's annual production capacity by an additional 400 million gallons from the current capacity of 275 million gallons of renewable diesel to 675 million gallons of renewable diesel and provide the capability to separate naphtha for sale into low carbon fuel markets. This expansion project is expected to be funded by the DGD Joint Venture cash flow. The DGD Joint Venture estimates completion and startup in the fourth quarter of 2021. The expansion will be in the form of a parallel facility located next to the current facility. The planned expansion will also include expanded inbound and outbound logistics for servicing the many developing low carbon fuel markets around North America and worldwide. The total cost of the expansion project, including the naphtha production and improved logistics capability, is estimated to be approximately $1.1 billion.

Biofuel

We produce biodiesel at our facilities in the United States and Canada. In the United States, we use a portion of our rendered animal fats and recycled cooking oils, as well as third-party additives, to produce Bio G-3000™ Premium Diesel Fuel. We have the annual capacity to produce approximately two million gallons of Bio G-3000™ at our facility in Butler, Kentucky. Our facility in Sainte-Catherine, Quebec also processes tallow and recycled cooking oils produced by us into biodiesel. The Rothsay Quebec facility has a current annual capacity to produce approximately 14 million gallons a year. Our biodiesel product is sold to our internal divisions, as well as to commercial biodiesel blenders in the United States and Canada, to be used as biodiesel fuel, a clean burning additive for diesel fuel, or as a biodegradable solvent or cleaning agent.

Bioenergy

In Europe, Ecoson produces green power from biogas production out of organic sludge and food waste for combined heat plant installations.  Ecoson is the largest industrial digestion operation in the Netherlands, with an output matching the annual use of energy needs of approximately 10,300 households. In addition, Ecoson's fat refinery produces refined fats and fatty acids. In fiscal 2014, Ecoson commenced the processing of manure into natural biophosphate for use as fertilizer and green gas.

Rendac collects fallen stock and animal waste, also referred to as Category 1 and Category 2 material under applicable E.U. regulations, from farmers and slaughterhouses, and processes these materials into fats and meals, which can only be used as a low grade source of energy or fuel for boilers and cement kilns. With a specialized collection fleet of approximately 300 trucks, Rendac collects raw materials in the Netherlands, Germany, Luxembourg and Belgium. This business is a market leader in the countries of Belgium, Netherlands and Luxembourg (the "Benelux region") and certain parts of Germany, a predominantly regulated market with spare capacity requirements and long-term contracts with local governments. The market for the collection and processing of fallen stock in these regions is regulated, and government contracts provide for exclusivity of the service to the contracted partner.

Raw materials pricing and supply contracts

We have two primary pricing arrangements-formula and non-formula arrangements-with our suppliers of poultry, beef, pork, bakery residuals and used cooking oil.  Under a “formula” arrangement, the charge or credit for raw materials is tied to published finished product prices for a competing ingredient after deducting a fixed processing fee.  We also acquire raw material under “non-formula” arrangements whereby suppliers are either paid a fixed price, are not paid, or are charged a collection fee, depending on various economic and competitive factors.  The credit received or amount charged for raw materials under both formula and non-formula arrangements is based on various factors, including the type of raw materials, demand for the raw materials, the expected value of the finished product to be produced, the anticipated yields, the volume of material generated by the supplier and processing and transportation costs. Formula prices are generally adjusted on a weekly, monthly or quarterly basis, while non-formula prices or charges are adjusted as needed to respond to changes in finished product prices or related operating costs. Since most of our raw materials are residual by-products of meat processing and other food production, we are not able to contract with our suppliers to increase supply if demand for our products increases.

A majority of our U.S. North American volume of rendering raw materials, including all of our significant poultry accounts, and substantially all of our bakery feed raw materials are acquired on a “formula basis,” which in most cases is set forth in contracts with our suppliers, generally with multi-year terms. These “formulas” allow us to manage the risk associated with decreases in commodity prices by adjusting our costs of materials based on changes in the price of our finished products, while also permitting us, in certain cases, to benefit from increases in commodity prices. The formulas provided in these contracts are reviewed and modified both during the term of, and in connection with the renewal of, the contracts to maintain an acceptable level of sharing between us and our suppliers of the costs and benefits from movements in commodity prices. A majority of Rothsay’s North American volume of rendering raw materials are acquired based on prices fixed on a quarterly basis with suppliers, with the remaining portion acquired on a “formula basis.” Darling Ingredients International (including North American operations) acquires a majority of its volume of rendering raw materials at spot or quarterly fixed prices. Although Darling Ingredients International, in general, has no long term contracts with its key suppliers, it has procured a series of three-year supply agreements with VION's foods division ("VION Food") that became effective in fiscal 2018. In fiscal 2018 VION Food provided approximately 11% of Darling Ingredients International's raw material supply (based on raw materials procured in fiscal 2018). Approximately 83% of Darling's U.S. North American volume of raw materials in fiscal 2018 was acquired on a "formula" basis.

Certain of the Company's geographic regions facilities are highly dependent on one or a few suppliers. During the 2018 fiscal year, the Company's 10 largest raw materials suppliers in North America accounted for approximately 30% of the total raw material processed by the Company in North America, with one single supplier accounting for approximately 6% of the total raw material processed in North America. In Europe, the Company's 10 largest raw material suppliers accounted for approximately 33% of the total raw material processed by the Company in Europe, with one single supplier accounting for approximately 13% of the total raw material processed in Europe. In China, the Company's 10 largest raw material suppliers accounted for approximately 32% of the total raw material processed by the Company in China, with one single supplier accounting for approximately 11% of the total raw material processed in China. In South America, the Company's 10 largest raw material suppliers accounted for approximately 71% of the total raw material processed by the Company in South America, with one single supplier accounting for approximately 16% of the total raw material processed in South America. See "Risk Factors - A significant percentage of our revenue is attributable to a limited number of suppliers and customers." Should any of these suppliers choose alternate methods of disposal, cease or materially decrease their operations, have their operations interrupted by casualty, or otherwise cease using, or reduce the use of, the Company's collection services, any operating facilities dependent on such suppliers could be materially and adversely affected. (See "Risk Factors-Certain of our operating facilities are highly dependent upon a single or a few suppliers.") For a discussion of the Company's competition for raw materials, see "Competition."

MARKETING, SALES AND DISTRIBUTION OF FINISHED PRODUCTS

The Company sells its finished products worldwide. Finished product sales are primarily managed through our commodity trading departments. With respect to our North American operations, we have trading departments located at our corporate headquarters in Irving, Texas and at our regional office in Cold Spring, Kentucky. Darling Ingredients International's finished product sales are managed primarily through trading departments that are located in Son en Breugel, the Netherlands, and through various offices located in Europe, Asia, South America and North America. Where appropriate, we coordinate international sales of common products in order to market them more efficiently. Our sales force is in contact with customers daily and coordinates the sale, and assists in the distribution of, most finished products produced at our processing plants. The Company also sells its finished products internationally directly to customers or, in some cases, through commodities brokers and agents. We market certain of our finished products under our Dar Pro Ingredients brand, certain specialty products under the Sonac name, collagen products under the Rousselot name and natural casings and meat by-products under the CTH name. See Note 22 of Notes to Consolidated Financial Statements for a breakdown of the Company's sales by geographic regions.

The Company sells finished products in North America and throughout the world, primarily to producers of animal feed, pet food, biodiesel, fertilizer and other consumer and industrial products, including oleo-chemicals, soaps and leather goods, for use as ingredients in their products or for further processing. Certain of our finished products are ingredients that compete with alternatives, such as corn, soybean oil, inedible corn oil, palm oils, soybean meal and heating oil, based on nutritional and functional values; therefore, the actual pricing for those finished products, as well as competing products, can be quite volatile. While the Company's principal finished products are generally sold at prices prevailing at the time of sale, the Company's ability to deliver large quantities of finished products from multiple locations and to coordinate sales from a central location enables us to sell into the market with the highest return. The Company's premium, value-added and branded products command significantly higher pricing relative to the Company's principal finished product lines due to their enhanced nutritional content, which is a function of the

Company's specialized processing techniques. Customers for our premium, value-added and branded products include feed mills, pet food manufacturers, integrated poultry producers, the dairy industry and golf courses. Feed mills purchase meals, fats, blood products, and Cookie Meal® for use as feed ingredients. Pet food manufacturers require stringent feed safety certifications and consistently demand premium additives that are high in protein and nutritional content. As a result, pet food manufacturers typically purchase only premium or value-added products under supply contracts with us. Oleo-chemical producers use fats as feedstocks to produce specialty ingredients used in paint, rubber, paper, concrete, plastics and a variety of other consumer and industrial products. Darling Ingredients International's premium, value-added and branded products also command higher pricing, including with respect to collagen, natural casings, meat by-products, edible fat, heparin and specialty plasma products.

We obtain payment protection for most of our global export sales by requiring payment before shipment, either through bank letters of credit or cash against documents at the origin of the sale or guarantees of payment from government agencies. For U.S. sales, we are ordinarily paid for products in U.S. dollars and have not experienced any material currency translation losses or any material foreign exchange control difficulties. Darling Ingredients International's product sales are generally denominated in the local currency. However, in certain markets (such as South America), some product sales are denominated in non-functional currencies, such as U.S. dollars and euros. Darling Ingredients International hedges a portionnon-functional currency product sales.

Our management monitors market conditions and prices for our finished products on a daily basis. If market conditions or prices were to significantly change, our management would evaluate and implement any measures that it may deem necessary to respond to the change in market conditions. For larger formula-based pricing suppliers, the indexing of raw material cost to finished product prices effectively establishes the gross margin on finished product sales at a stable level, providing us some protection from finished product price declines.

Finished products produced by the Company are shipped primarily by truck or rail from our plants shortly following production. While there can be some temporary inventory accumulations at various North American and international locations, particularly port locations for export shipments, with the exception of collagen and natural casings, inventories rarely exceed three weeks' production and, therefore, we use limited working capital to carry those inventories. Our limited inventories also reduce our exposure to fluctuations in finished-product prices. With respect to collagen and natural casings, Darling Ingredients International, in contrast, has historically carried much larger inventories due to the manufacturing process and market dynamics related to those products, which requires a greater amount of working capital to carry these investments. Other factors that influence competition, markets and the prices that we receive for our finished products include the quality of our finished products, consumer health consciousness, worldwide credit conditions, currency fluctuations, tariffs, and government aid and regulations. From time to time, we enter into arrangements with our suppliers of raw materials pursuant to which these suppliers have the option to buy back our finished products at market prices.

The Company operates a fleet of trucks, trailers and railcars to transport raw materials from suppliers and finished products to customers or ports for transportation by ship. It also utilizes third party freight companies to cost-effectively transfer materials and augment our in-house logistics fleet. Within our bakery and international by-products division, except for Rendac, substantially all inbound and outbound freight is handled by third party logistics companies.

COMPETITION

We believe we are the only global ingredients company with products generated principally from animal-origin raw material types; however, we compete with a number of regional and local players in our various sub-segments and end markets.

The procurement of raw materials currently presents greater challenges to our business than the sale of finished products. In North America, consolidation within the meat processing industry has resulted in bigger and more efficient slaughtering operations, the majority of which utilize "captive" renderers (rendering operations integrated with the meat or poultry packing operation). At the same time, there has been limited to no growth in the number of small meat processors, which have historically been a dependable source of supply for non-captive renderers, such as us. In addition, the slaughter rates in the meat processing industry are subject to economic conditions and, as a result, during periods of economic decline, the availability, quantity and quality of raw materials available to the independent renderers decreases. These factors have been offset, in part, however, by increasing environmental consciousness. The need for food service establishments in the United States to comply with environmental regulations concerning the proper disposal of used restaurant cooking oil should continue to provide a growth area for this raw material source. The rendering industry is highly fragmented with a number of local slaughtering operations that provide us with raw materials. In North America, we compete with other rendering, restaurant services and bakery residual businesses, and alternative methods of disposal of animal processing by-products and used restaurant cooking oil provided by trash haulers, waste management companies, biodiesel companies, anaerobic digestion companies and others. In addition, U.S. food service establishments have increasingly experienced theft of used cooking oil. A number of our competitors for the procurement of raw material are experienced, well-capitalized companies that have significant operating experience and historic supplier relationships. Competition for available raw materials is based primarily on price and proximity to the supplier.

In marketing our finished products domestically and internationally, we face competition from other processors and from producers of other suitable ingredient alternatives. However, we differentiate ourselves through the scope and depth of our product portfolio and geographic footprint. While we compete with a number of well capitalized companies across our business, such as Cargill, Inc., Tyson Foods, Inc. and JBS & Company in the U.S. products business, and others in the global collagen, bone products, and blood products business, we do not have a single competitor that we compete with across all of our products or geographies.

SEASONALITY

Although the amount of raw materials made available to us in each of our segments by our suppliers is relatively stable on a weekly basis, it is impacted by seasonal factors, including holidays, during which the availability of raw materials declines because major meat and poultry processors are not operating, and cold and other severe weather, which can hinder the collection of raw materials.  Warm weather can also adversely affect the quality of raw materials processed and our yields on production because raw material deteriorates more rapidly in warm weather than in cooler weather.  Weather can vary significantly from one year to the next and may impact the comparability of our operating results between periods. The amount of bakery residuals we process generally increases during the summer from June to September.  Collagen sales generally decline in the summer.

INTELLECTUAL PROPERTY

The Company maintains valuable trademarks, service marks, copyrights, trade names, trade secrets, proprietary technologies and similar intellectual property, and considers our intellectual property to be of material value.  We have registered or applied for registration of certain of our intellectual property, including the tricolor triangle used in our signage and logos and the names “Darling,” “Darling Ingredients”, “Griffin Industries,” “Dar Pro Solutions,” “Dar Pro,” “Rousselot,” “Sonac,” “Ecoson,” “Rendac,” “Rothsay,” “Nature Safe,” “CleanStar,” “Peptan,” “Cookie Meal,” and “Bakery Fe
certain patents, both domestically and internationally, relating to the process for preparing nutritional supplements and the drying and processing of raw materials.

EMPLOYEES AND LABOR RELATIONS

As of December 29, 2018, the Company employed globally approximately 9,800 persons full-time. While we have no national or multi-plant union contracts, at December 29, 2018, approximately 22% of the Company's North American employees were covered by multiple collective bargaining agreements. In addition, approximately 39% of Darling Ingredients International's employees are covered by various collective bargaining agreements.  Management believes that our relations with our employees and their representatives are satisfactory.  There can be no assurance, however, that these satisfactory arrangements will continue, or that new agreements will be reached without union action or on terms satisfactory to us.

REGULATIONS

We are subject to the rules and regulations of various federal, state, local and foreign governmental agencies including, but not limited to, the following principal governmental agencies in the following countries:

United States

- The Food and Drug Administration (“FDA”), which regulates pharmaceutical products and food and feed safety. The FDA is responsible for enforcement of rules (21 C.F.R. 589.2000 and 589.2001, referred to herein as the “BSE Feed Rule”) to prevent the spread of bovine spongiform encephalopathy (“BSE”), which is commonly referred to as “mad cow” disease.   These regulations prohibit the use of mammalian proteins, with some exceptions, and tallow having more than 0.15% impurities in feeds for cattle, sheep and other ruminant animals. In addition, the BSE Feed Rule prohibits the use of brain and spinal cord material from cattle aged 30 months and older or the carcasses of such cattle, if the carcasses are not inspected and passed for human consumption and the brain and spinal cord are not removed, in the feed or food for all animals.   In addition, the FDA is responsible for implementing and enforcing the Food Safety Modernization Act, which was signed into law on January 4, 2011, and gave FDA a series of powers intended to better protect human and animal health by adopting a modern, preventive and risk-based approach to food safety regulation. The FDA finalized major rules affecting the production, importation and transport of human and animal food. Management believes we are in compliance with the provisions of these rules. See Item 1A “Risk Factors - Our business may be affected by the impact of animal related disease, such as BSE and other food safety issues," for more information regarding certain FDA rules that affect our business, including changes to the BSE Feed Rule and rules and regulations under the Food Safety Modernization Act.

- The United States Department of Agriculture ("USDA"), which has authority over meat, poultry, and egg products and inspects producers to ensure compliance with applicable laws and regulations. Within the USDA, two agencies exercise direct regulatory oversight of our activities:

- Animal and Plant Health Inspection Service ("APHIS") certifies facilities and claims made for exported materials to meet importing country requirements and establishes and enforces import requirements for live animals and animal by-products as well as plant products, and

- Food Safety and Inspection Service (“FSIS”) regulates sanitation and biosecurity of our facilities and our food safety programs at plants producing edible fats and meats, among other things.

On January 12, 2004, FSIS issued three interim final rules designed to enhance its BSE safeguards in order to minimize human exposure to BSE infective tissues and assure consumers of the safety of the meat supply. These regulations prohibited non-ambulatory animals from entering the food chain, required removal of specified risk materials (“SRM”) at slaughter and prohibited carcasses from cattle tested for BSE from entering the food chain until the animals tested negative for BSE, among other provisions. On July 13, 2007, FSIS published an affirmation of the interim final rules concerning prohibition of SRMs and non-ambulatory animals and the use of stunning devices, with several amendments.

On November 19, 2007, APHIS implemented revised import regulations to allow Canadian cattle 30 months of age and older and born on or after March 1, 1999, and bovine products derived from such cattle to be imported into the United States for any use, if such cattle and products complied with specific FDA and FSIS regulations. Imports of Canadian cattle younger than 30 months of age have been allowed since March 2005. Imports of SRMs from Canadian-born cattle slaughtered in Canada are not permitted. On March 4, 2014, APHIS implemented amended import regulations concerning cattle and bovine products. The final rule established a system for classifying regions as to BSE risk that is consistent with international standards set by the World Organization for Animal Health (“OIE”), and based importation requirements for cattle and beef products on: (i) the inherent risk of BSE infectivity in the commodity to be imported and (ii) the BSE risk status of the region from which the commodity originates.

- The U.S. Environmental Protection Agency (“EPA”), which regulates air and water discharges and hazardous and solid waste requirements among other environmental requirements, as well as local and state environmental agencies with jurisdiction over environmental matters affecting the Company's operations. The EPA also administers the National Renewable Fuel Standard Program (“RFS2”).

- The Association of American Feed Control Officials (“AAFCO”), which is a voluntary membership association of state, and federal agencies that regulate the sale and distribution of animal feeds and animal drug remedies. Although, AAFCO has no regulatory authority, it brings together stakeholders and works to develop and implement uniform and equitable laws, regulations, standards, definitions, and enforcement polices for regulating the manufacture, labeling, distribution and sale of animal feeds.

- State Departments of Agriculture, which regulate animal by-product collection and transportation procedures and animal feed quality.

- The United States Department of Transportation (“USDOT”), as well as local and state transportation agencies, which regulate the operation of our commercial vehicles.

- The U.S. Occupational Safety and Health Administration (“OSHA”), which is the main federal agency charged with the enforcement of worker safety and health legislation.

- The Securities and Exchange Commission (“SEC”), which regulates securities and information required in annual, quarterly and other reports filed by publicly traded companies.

European Union and E.U. Member States

- The European Commission, Directorate-General for Health and Food Safety, which is responsible for EU policy on food safety and health and for monitoring the implementation of related laws, including but not limited to food, feed, human and animal health, technical uses of animal by-products and packaging.

- The European Medicines Agency, which is responsible for the scientific evaluation, supervision and safety monitoring of human and veterinary pharmaceutical products in the EU and establishes guidance amongst others for bovine-containing human and veterinary pharmaceutical products, and maximum residue limits.

- The European Food Safety Authority, which advises the European Commission, the European Parliament and the EU Member States on food safety matters, including on animal feed, animal health and welfare, biological hazards and contaminants.

- The Council of Europe, European Directorate for the Quality of Medicine and Healthcare, which establishes quality standards for safe human and veterinary pharmaceutical products in Europe by developing guidance and standards in the areas of blood transfusion, organ, cell and tissue transportation and consumer health issues.

- The Council of Europe, European Pharmacopeia, which establishes requirements for the qualitative and quantitative composition of human and veterinary pharmaceutical products, the tests to be carried out on medicines and on substances and materials used in their production.

- The European Commission, Directorate-General for the Environment, which is responsible for EU policy on the environment and for monitoring the implementation of related laws, including but not limited to Directive 2010/75/EU on Industrial Emissions (Integrated Pollution Prevention and Control) and the Best Available Techniques Reference Document on the Slaughterhouses and Animal By-products Industries.

- The European Chemicals Agency, which is responsible for the implementation of the Regulation (EC) No 1907/2006 on the Registration, Evaluation, Authorisation and Restriction of Chemicals.

- EU Member States must ensure adequate enforcement, control and supervision of principles set forth in numerous EU Directives and Regulations, such as minimum safety and health requirements for the workplace and use of work equipment by workers. EU Member States may be allowed to maintain or establish more stringent measures in their own legislation. In general, each EU Member State's ministry of labor affairs is responsible for regulating health and safety at work and labor inspection services and is in charge of controlling compliance with applicable legislation and regulations.

- The Dutch Food and Consumer Product Safety Authority (Nederlandse Voedsel- en Warenautoriteit), which issues permits, approvals and registrations to establishments or plants engaged in certain activities related to the handling of animal by-products and food and feed production.

- The Belgian Federal Agency for the Safety of the Food Chain (FASFC) (Federal Agentschap voor de veiligheid van de voedselketen (FAVV) or Agence fédérale pour la sécurité de la chaîne alimentaire (AFSCA)), which issues permits, authorizations, approvals and registrations to establishments or plants engaged in certain activities related to the handling of animal by-products and food and feed production.

- In Belgium, the Public Waste Agency of Flanders (Openbare Vlaamse Afvalstoffenmaatschappij), the Soil and Waste Department of the Public Service of Wallonia (Département du Sol et des Déchets du Service Public de Wallonie) and Brussels Environment (Leefmilieu Brussel or Bruxelles Environnement), which issues permits, approvals and registrations to establishments or plants carrying out certain activities related to the handling of animal by-products and food and feed production.

- The German Competent Authorities at state (Länder) level, which issue permits, approvals and registrations to establishments or plants carrying out certain activities related to the handling of animal by-products and food and feed production.

- The United Kingdom's Health and Safety Executive is the government body responsible for enforcing health and safety at work legislation, such as the Health and Safety at Work Act 1974, and enforcing health and safety law in industrial workplaces, together with local authorities.

- The United Kingdom's Animal and Plant Health Agency issues permits, approvals and registrations to plants carrying out certain activities related to the handling of animal by-products. Feed businesses need to be approved or registered with their local authority trading standards office.

Canada

- The Canadian Food Inspection Agency (“CFIA”), which regulates animal health and the disposal of animals and their products or by-products.

- Canadian provincial ministries of agriculture and the environment, which regulate food safety and quality, air and water discharge requirements and the disposal of deadstock.

- The Canadian Department of the Environment (“Environment Canada”), which ensures compliance with Canadian federal air and water discharge and wildlife management requirements, and the various provincial and local environmental ministries and agencies.

- The Canadian Technical Standards and Safety Authority (“TSSA”), a non-profit organization that regulates the safety of fuels and pressure vessels and boilers.

China

- The General Administration of Quality Supervision, Inspection and Quarantine, which supervises the import and export of food and feed.
- The Ministry of Health of the People’s Republic of China, which establishes standards for food and pharmaceutical products.
- The Chinese Pharmacopeia, which establishes standards for pharmaceutical products.
- Ministry of Environmental Protection of the People's Republic of China, which regulates the environmental protection standards.
- Ministry of Labor and Social Security of the People's Republic of China, which establishes the regulations of labor, welfare and health insurance.
- State Administration of Work Safety, which establishes the work safety standards and regulations.

Brazil

- The Ministry of Agriculture, Cattle and Supply (Ministério da Agricultura, Pecuária e Abastecimento), which regulates the production of collagen.
- Ministry of Labor (Ministério do Trabalho), which regulates labor health and safety.
- National Water Agency (ANA), which regulates waste water discharge permits.
- State Government Agency CETESB, responsible for the control, supervision, monitoring and licensing process for pollution generating activities.

Australia

- The Australian Quarantine and Inspection Service, which regulates the import and export of agricultural products, including animal by-products.
- The Department of Agriculture, Fisheries and Forestry, which administers meat and animal by-product legislation.
- PrimeSafe, which is the principal regulator of meat and animal by-product businesses in the State of Victoria.
- The Australian Competition and Consumer Commission, which regulates Australia’s competition and consumer protection law.
- The Australian Securities and Investments Commission, which regulates Australia’s company and financial services laws.
- Worksafe Victoria, which is the regulator responsible for administering and enforcing occupational health and safety laws and regulations in the State of Victoria.

- Environment Protection Authority Victoria, which administers environmental protection laws in Victoria.
- Goulburn-Murray Rural Water Corporation, which manages allocation and use of water under local water laws in Victoria.

Rules and regulations promulgated by these and other agencies may influence our operating results at one or more facilities.

AVAILABLE INFORMATION

Under the Securities Exchange Act of 1934, the Company is required to file annual, quarterly and special reports, proxy statements and other information with the SEC. The SEC maintains a web site at http://www.sec.gov that contains reports, proxy and information statements, and other information regarding issuers that file electronically with the SEC. The Company files electronically with the SEC.

We make available, free of charge, through our investor relations web site, our reports on Forms 10-K, 10-Q and 8-K, and amendments to those reports, as well as all other filings with the SEC, as soon as reasonably practicable after such materials are electronically filed with, or furnished to, the SEC pursuant to Section 13(a) or 15(d) of the Exchange Act.

The Company's website is http://www.darlingii.com and the address for the Company's investor relations web site is http://ir.darlingii.com. Information contained on these websites is not and should not be deemed to be a part of this report or any filing filed with, or furnished to, the SEC by us.

## ITEM 1A. RISK FACTORS

An investment in Darling involves substantial risks. In consultation with your financial, tax and legal advisors, you should carefully consider, among other matters, the following risks described in, as well as the other information contained in or incorporated by reference into, this report. If any of the events described in the following risk factors actually occur, our business, financial condition, prospects or results of operations could be materially adversely affected, the market price of our common stock could decline and you may lose all or part of your investment in the common stock. The risks and uncertainties described below are not the only risks we face. Additional risks and uncertainties that are not currently known or that are currently deemed to be immaterial may also materially and adversely affect our business operations and financial condition or the market price of our common stock. The risks described below also include forward-looking statements and our actual results may differ substantially from those discussed in these forward-looking statements. See the section entitled “Forward-Looking Statements” in this filing.

### Risks Related to the Company

The prices of many of our products are subject to significant volatility associated with commodities markets.

Our principal finished products include MBM, PM, BFT, YG, PG, BBP and hides, which are commodities. We also manufacture and sell a number of other products that are derived from animal by-products and many of which are commodities or compete with commodities. The prices of these commodities are quoted on, or derived from prices quoted on, established commodity markets. Accordingly, our results of operations will be affected by fluctuations in the prevailing market prices of these finished products or of other commodities that may be substituted for our products by our customers. Historically, market prices for commodity grains, fats and food stocks have fluctuated in response to a number of factors, including global changes in supply and demand resulting from changes in local and global economic conditions, changes in global government agriculture programs, changes in energy policies of U.S. and foreign governments, changes in international agricultural trading policies, impact of disease outbreaks on protein sources and the potential effect on supply and demand, as well as weather conditions during the growing and harvesting seasons. While we seek to mitigate the risks associated with price declines, including by diversifying our finished products offerings, through the use of formula pricing tied to commodity prices for a substantial portion of our raw materials (which may not protect our margins in periods of rapidly declining prices) and hedging, a significant decrease in the market price of any of our products or of other commodities that may be substituted for our products would have a material adverse effect on our results of operations and cash flow. Furthermore, rapid and material changes in finished goods prices, including competing agricultural-based alternative ingredients, generally have an immediate and, often times, material impact on the Company’s gross margin and profitability resulting from the brief lapse of time between the procurement of the raw materials and the sale of the finished goods.

The prices available for the Company’s Food Ingredients segment’s collagen, edible fats and natural casings products are influenced by other competing ingredients, including plant-based and synthetic hydrocolloids and artificial casings. In the collagen operation, in particular, the cost of the Company's animal-based raw material moves in relationship to the selling price of the finished goods. The processing time for the Food Ingredients segment's collagen and casings is generally 30 to 60 days, which is substantially longer than the Company's Feed Ingredients segment's animal by-products operations. Consequently, the Company’s gross margin and profitability in this segment can be influenced by the movement of finished goods prices from the time the raw materials were procured until the finished goods are sold.

The Company’s Fuel Ingredients segment, which converts fats into renewable diesel, organic sludge and food waste into biogas, and fallen stock into low-grade energy sources is impacted by world energy prices for oil, electricity and natural gas, as well as potential competition from the adoption of non-rendered feedstock in biodiesel markets.

In addition, increases in the market prices of raw materials would require us to raise prices for our premium, value-added and branded products to avoid margin deterioration. There can be no assurance as to whether we could implement future price increases in response to increases in the market prices of raw materials or how any such price increases would affect future sales volumes to our customers. Our results of operations could be materially and adversely affected in the future by this volatility.

Furthermore, an increased preference by meat processors for alternative feed ingredients, such as all vegetable diets in the case of poultry producers, could negatively impact the prices of certain of our finished products.

Our business is dependent on the procurement of raw materials, which is the most competitive aspect of our business.

Our management believes that the most competitive aspect of our business is the procurement of raw materials rather than the sale of finished products. Many of our raw materials are derived directly or indirectly from animal by-products, which results in the following challenges:

- In North America, consolidation within the meat processing industry has resulted in bigger and more efficient slaughtering operations, the majority of which utilize “captive” renderers (rendering operations integrated with the meat or poultry packing operation).
- Concurrently, recently there has been limited to no growth in the number of small U.S. meat processors, which have historically been a dependable source of supply for non-captive or independent U.S. renderers, such as us.
- The slaughter rates in the United States and international meat processing industry are subject to decline during poor economic conditions when consumers generally reduce their consumption of protein, and as a result, during such periods of decline, the availability, quantity and quality of raw materials available to independent renderers, such as us, decreases.
- In addition, the Company has seen an increase in the use of used cooking oil in the production of biodiesel, which has increased competition for the collection of used cooking oil from restaurants and other food service establishments and contributed to an increase in the frequency and magnitude of theft of used cooking oil in the United States.
- Furthermore, a decline in the general performance of the global economy (including a decline in consumer confidence) and an inability of consumers and companies to obtain credit in the financial markets could have a negative impact on our raw material volume, such as through the forced closure of any of our raw material suppliers. A significant decrease in available raw materials or a closure of a significant number of raw material suppliers could materially and adversely affect our business, results of operations and financial condition, including the carrying value of certain of our assets.

The rendering industry is highly fragmented and both the rendering and bakery residual industries are very competitive. We compete with other rendering businesses and alternative methods of disposal of animal by-products, bakery residue and used cooking oil provided by trash haulers, waste management companies and biodiesel companies, as well as the alternative of illegal disposal. See Item 1. “Competition.” In addition, U.S. restaurants experience theft of used cooking oil, the frequency and magnitude of which increases with the rise in value of used cooking oil. Depending on market conditions, we either charge a collection fee to offset a portion of the cost incurred in collecting raw material, collect on a no pay/no charge basis or will pay for the raw material. To the extent suppliers of raw materials look to alternate methods of disposal, whether as a result of our collection fees being deemed too expensive, the payments we offer being deemed too low or otherwise, our raw material supply will decrease and our collection fee revenues will decrease, which could materially and adversely affect our business, results of operations and financial condition. In addition, the amount of raw material acquired, which has a direct impact on the amount of finished goods produced, can also have a material effect on our gross margin reported, as the Company has a substantial amount of fixed operating costs. In addition, we utilize an extensive vehicle fleet to collect and transport raw material, for which we compete with other industries for qualified drivers. The U.S. has been experiencing a growing shortage of truck drivers. Our failure to hire and retain a sufficient number of truck drivers to operate our fleet could negatively impact our ability to collect and transport raw material in an efficient and cost-effective manner.

A majority of the Company's U.S. volume of animal by-product raw materials, including all of its significant U.S. poultry accounts, and substantially all of the Company's U.S. bakery feed raw materials, are acquired on a “formula basis,” which in most cases is set forth in contracts with our suppliers, generally with multi-year terms. These “formulas” allow us to mitigate the risks associated with decreases in commodity prices by adjusting our costs of materials based on changes in the price of our finished products, while also permitting us, in certain cases, to benefit from increases in commodity prices. The formulas provided in these contracts are reviewed and modified both during the term of, and in connection with the renewal of, the contracts to maintain an acceptable level of sharing between us and our suppliers of the costs and benefits from movements in commodity prices. Changes to these formulas or the inability to renew such contracts could have a material adverse effect on our business, results of operations and financial condition. A majority of Rothsay's animal by-product raw materials are acquired based on prices fixed on a quarterly basis with suppliers, with the remaining portion acquired on a "formula basis." A majority of Darling Ingredients International's volume of animal by-product raw materials are acquired at spot or quarterly fixed prices.

Our business may be adversely impacted by fluctuations in exchange rates, which could affect our ability to comply with our financial covenants.

We carry out transactions in a number of foreign currencies, principally the euro, the Canadian dollar, the Chinese renminbi, the Brazilian real, the British pound, the Japanese yen, the Australian dollar and the Polish zloty. To the extent possible, we attempt to match revenues and expenses in each of the currencies in which we operate. However, we will still be exposed to currency fluctuations when we translate the results of our overseas operations into U.S. dollars, our reporting currency, in the preparation of our consolidated financial statements. The exchange rates between these currencies and the U.S. dollar may fluctuate and these fluctuations may affect our U.S. dollar-denominated results of operations and financial condition even if our underlying operations and financial condition, in local currency terms, remain unchanged. While we have entered into and may from time to time enter into the use of currency hedging instruments to provide us with protection from adverse fluctuations in currency exchange rates, there can be no assurance that such instruments will successfully protect us from more pronounced swings in such exchange rates. Further, by utilizing these instruments we potentially forego the benefits that might result from favorable fluctuations in currency exchange rates.

We also face risks arising from the possible future imposition of exchange controls and currency devaluations. Exchange controls may limit our ability to convert foreign currencies into U.S. dollars or to remit dividends and other payments by our foreign subsidiaries located in, or business conducted within, a country imposing such controls. Currency devaluations would result in a diminished value of funds denominated in the currency of the country instituting the devaluation.

Any fluctuations in exchange rates or the imposition of exchange controls or currency devaluation may adversely impact our ability to comply with the financial and other covenants under the documents governing our indebtedness, which could affect our ability to incur indebtedness, pay dividends, make investments or take other actions that might be in our best interest. Should our international operations continue to expand, they will represent a larger part of our business and such exchange rate fluctuations may have a greater impact on our business, financial condition and results of operations.

We are highly dependent on natural gas, diesel fuel and electricity, the price of which can be volatile, and such dependency could materially adversely affect our business.

Our operations are highly dependent on the use of natural gas, diesel fuel and electricity. We consume significant volumes of natural gas to operate boilers in our plants, which generate steam to heat raw materials. Natural gas prices represent a significant cost of facility operations included in cost of sales. We also consume significant volumes of diesel fuel to operate our fleet of tractors and trucks used to collect raw materials. Diesel fuel prices represent a significant component of cost of collection expenses included in cost of sales. Prices for both natural gas and diesel fuel can be volatile and therefore represent an ongoing challenge to our operating results. Although we continually manage these costs and hedge our exposure to changes in fuel prices through our formula pricing, and from time to time, derivatives, a material increase in prices for natural gas and/or diesel fuel over a sustained period of time could materially adversely affect our business, results of operations and financial condition. We also require a significant amount of electricity in operating certain of our facilities, a disruption of which or a significant increase in the cost of which could have a material adverse effect on the business and results of operations of the affected facility.

A significant percentage of our revenue is attributable to a limited number of suppliers and customers.

In fiscal 2018, the Company's top ten customers for finished products accounted for approximately 21% of product sales. In addition, the Company's top ten raw material suppliers accounted for approximately 23% of its raw material supply in the same period. VION Food, Darling Ingredients International’s largest raw materials supplier, accounted for approximately 11% of Darling Ingredients International’s raw materials supply in fiscal 2018. Darling Ingredients International has entered into supply agreements with VION Food pursuant to which VION Food supplies Darling Ingredients International with by-products generated by VION Food’s operations. MFI, Rothsay’s largest raw materials supplier, accounted for approximately 20% of Rothsay’s raw materials supply in fiscal 2018. In connection with the acquisition of Rothsay, we entered into a seven-year supply agreement with MFI that runs through October 27, 2020 to supply us with substantially all of the MFI raw materials processed by Rothsay prior to the sale.

Disruptions or modifications to, or termination of, our relationships with any of our significant suppliers or customers, or financial difficulties experienced by any of our suppliers or customers that lead to curtailment or termination of their operations, could cause our businesses to suffer significant financial losses and could have a material adverse effect on our business, earnings, financial condition and/or cash flows.

Certain of our operating facilities are highly dependent upon a single or a few suppliers.

Certain of our operating facilities are highly dependent on one or a few suppliers. Should any of these suppliers choose alternate methods of disposal, cease their operations, have their operations interrupted by casualty, curtail their operations or otherwise cease using our collection services, these operating facilities may be materially and adversely affected, which could materially and adversely affect our business, results of operations and financial condition.

We face risks associated with our international activities, which could negatively affect our sales to customers in foreign countries and our operations and assets in such countries.

We conduct foreign operations in Europe, Canada, Asia, South America and Australia. While we expect that our geographical diversity reduces our exposure to risks in any one country or part of the world, it also subjects us to the various risks and uncertainties relating to international sales and operations, including:

- imposition of tariffs, quotas, trade barriers and other trade protection measures imposed by foreign countries regarding the importation of poultry, beef and pork products, in addition to operating, import or export licensing requirements imposed by various foreign countries;
- imposition of tariffs, quotas, trade barriers and other trade protection measures imposed by the U.S. against foreign countries;
- imposition of border restrictions by foreign countries with respect to the import of poultry, beef and pork products due to animal disease or other perceived health or safety issues;
- change in existing trade agreements, such as the North American Free Trade Agreement (NAFTA), which could negatively impact our business;
- impact of currency exchange rate fluctuations between the U.S. dollar and foreign currencies, particularly the euro, the Canadian dollar, the Chinese renminbi, the Brazilian real, the British pound, the Japanese yen, the Australian dollar and the Polish zloty, which may reduce the U.S. dollar value of the revenues, profits and cash flows we receive from non-U.S. markets or of our assets in non-U.S. countries or increase our supply costs, as measured in U.S. dollars in those markets;
- exchange controls and other limits on our ability to import raw materials, import or export finished products or to repatriate earnings from overseas, such as exchange controls in effect in China, that may limit our ability to repatriate earnings from those countries;
- different regulatory structures (including creditor rights that may be different than in the United States) and unexpected changes in regulatory environments (including, without limitation, in China), including changes resulting in potentially adverse tax consequences or imposition of onerous trade restrictions, price controls, industry controls, animal and human food safety controls, employee welfare schemes or other government controls;
- political or economic instability, social or labor unrest or changing macroeconomic conditions or other changes in political, economic or social conditions in the respective jurisdictions;
- changes in our effective tax rate, including tax rates that may exceed those in the United States, earnings that may be subject to withholding requirements and incremental taxes upon repatriation, changes in the mix of our business from

year to year and from country to country, changes in rules related to accounting for income taxes, changes in tax laws in any of the jurisdictions in which we operate and adverse outcomes from tax audits;

- compliance with and enforcement of a wide variety of complex U.S. and non-U.S. laws, treaties and regulations, including, without limitation, anti-bribery laws such as the U.S. Foreign Corrupt Practices Act (the “FCPA”), the U.K. Bribery Act 2010, the Brazilian corporate anti-corruption law and similar anti-corruption legislation in many jurisdictions in which we operate, as well as economic and trade sanctions enforced by the U.S.

Department of the Treasury's Office of Foreign Assets Control ("OFAC"), the European Union ("EU") and other governmental entities; and

- distribution costs, disruptions in shipping or reduced availability or increased costs of freight transportation.

These risks and uncertainties could jeopardize or limit our ability to transact business in one or more of our international markets or in other developing markets and may have a material adverse effect on our business, results of operations, cash flows and financial condition.

The DGD Joint Venture subjects us to a number of risks.

In January 2011, our wholly-owned subsidiary entered into a limited liability company agreement with a wholly-owned subsidiary of Valero to form the DGD Joint Venture, which was formed to design, engineer, construct and operate the DGD Facility, which as a result of the expansion project completed in August 2018 is now capable of processing approximately 20,000 barrels per day of input feedstock to produce renewable diesel fuel and certain other co-products. The DGD Facility, which is located adjacent to Valero's refinery in Norco, Louisiana, reached mechanical completion and began production of renewable diesel in June 2013. As of December 29, 2018, under the equity method of accounting, we had an investment in the DGD Joint Venture of approximately $368.7 million included on the consolidated balance sheet. There is no assurance that the DGD Joint Venture will continue to be profitable or allow us to continue to make a return on our investment.

In August 2018, the DGD Joint Venture completed an expansion project that increased the DGD Facility's annual production capacity from 160 million gallons of renewable diesel to 275 million gallons and expanded outbound logistics for servicing the many developing low carbon fuel markets around North America and worldwide. In November 2018, the joint venture partners approved the DGD Joint Venture moving forward with another expansion project, which is expected to grow the facility's annual production capacity by an additional 400 million gallons from the current capacity of 275 million gallons of renewable diesel to 675 million gallons of renewable diesel and provide the capability to separate naphtha for sale into low carbon fuel markets. This expansion project is expected to be funded by DGD Joint Venture cash flow; provided, however, that in the event the DGD Joint Venture's cash flow is not sufficient to fund the project, the Company would be required to contribute to the DGD Joint Venture its proportionate share of the additional funds necessary to cover such shortfall, with such additional funding to be in the form of an equity contribution or, if agreed to by the joint venture partners, a loan. DGD estimates completion and startup of the expansion project in the fourth quarter of 2021. The expansion will be in the form of a parallel facility located next to the current facility. The planned expansion will also include expanded inbound and outbound logistics for servicing the many developing low carbon fuel markets around North America and worldwide. The total cost of the expansion project, including the naphtha production and improved logistics capability, is estimated to be approximately $1.1 billion. While construction on the expansion project is underway, there is no guarantee that unforeseen issues will not arise in connection with the completion or startup of the expansion project, and any unexpected significant changes to the scope of the project related thereto could require investment of additional financial resources by the DGD Joint Venture and/or the joint venture partners, including the Company, which could be significant.

The DGD Joint Venture is dependent on governmental energy policies and programs, such as the National Renewable Fuel Standard Program ("RFS2") and low carbon fuel standards (LCFS) (such as in the state of California), which positively impact the demand for and price of renewable diesel. Any changes to, a failure to enforce or a discontinuation of any of these programs could have a material adverse effect on the DGD Joint Venture. See the section entitled "Risk Factors-Risks Related to the Company-Our biofuels business may be affected by energy policies of U.S. and foreign governments." Similarly, the DGD Joint Venture is subject to the risk that new or changing technologies may be developed that could meet demand for renewable diesel under governmental mandates in a more efficient or less costly manner than the technologies used by the DGD Joint Venture, which could negatively affect the price of renewable diesel and have a material adverse effect on the DGD Joint Venture.

In addition, the operation of a joint venture such as this involves a number of risks that could harm our business and result in the DGD Joint Venture not performing as expected, such as:

- problems integrating or developing operations, personnel, technologies or products;
- the unanticipated breakdown or failure of equipment or processes, including any unforeseen issues that may arise in connection with the operation of the DGD Facility or completion and startup of the expansion project or the possibility of equipment failure as a result of materials degradation;
- the inaccuracy of our assumptions about prices for the renewable diesel that the DGD Joint Venture produces;

- unforeseen engineering or environmental issues, including new or more stringent environmental regulations affecting operations;

- the inaccuracy of our assumptions about the timing and amount of anticipated revenues and operating costs including feedstock prices;

- the diversion of management time and resources;

- difficulty in obtaining and maintaining permits and other regulatory issues, potential license revocation and changes in legal requirements;

- difficulties in establishing and maintaining relationships with suppliers and end user customers;

- the risk that one or more competitive new renewable diesel plants are constructed that use different technologies from the DGD Facility and result in the marketing of products that are more effective as a substitute for carbon-based fuels or less expensive than the products marketed by the DGD Joint Venture;

- performance below expected levels of output or efficiency;

- reliance on Valero and its adjacent refinery facility for many services and processes;

- if any of the risks described in connection with the DGD Joint Venture occur, possible impairment of the acquired assets, including intangible assets;

- possible third party claims of intellectual property infringement; and

- being forced to sell our equity interests in the DGD Joint Venture pursuant to buy/sell provisions in the DGD Joint Venture's operating agreement and failing to realize the benefits of the DGD Joint Venture.

If any of these risks described above were to materialize and the operations of the DGD Joint Venture were significantly disrupted, it could have a material adverse effect on our business, financial condition and results of operations.

Our biofuels business may be affected by energy policies of U.S. and foreign governments.

Pursuant to the requirements established by the Energy Independence and Security Act of 2007, the EPA finalized regulations for RFS2 in 2010. The regulation mandated the domestic use of biomass-based diesel (biodiesel or renewable diesel) of 1.0 billion gallons in 2012. Beyond 2012, the regulation requires a minimum of 1.0 billion gallons of biomass-based diesel for each year through 2022, which amount is subject to increase by the Administrator of the EPA. The volume mandates for 2018 were 2.1 billion gallons for biomass based diesel, 4.29 billion gallons for advanced biofuel and 19.29 billion gallons for renewable fuel. The EPA has also established a final volume mandate for biomass based diesel for 2019 of 2.1 billion gallons. In November 2018, the EPA finalized the volume mandates for 2019 advanced biofuel at 4.92 billion gallons and for renewable fuel at 19.92 billion gallons. In addition, the EPA affirmed the 2019 Biomass Based Diesel mandate of 2.10 billion gallons and established the 2020 Biomass Based Diesel mandate at 2.43 billion gallons. Biomass-based diesel qualifies to fulfill the biomass based diesel requirement, the non-specified portion of the advanced biofuel requirement and the total renewable fuel requirement. In order to qualify as a "renewable fuel" each type of fuel from each type of feedstock is required to lower greenhouse gas emissions ("GHG") by levels specified in the regulation. The EPA has determined that biofuels (either biodiesel or renewable diesel) produced from waste oils, fats and greases result in an 86% reduction in GHG emissions, exceeding the 50% requirement established by the regulation. Prices for our finished products may be impacted by worldwide government policies relating to renewable fuels and GHG. Programs like RFS2 and LCFS and tax credits for biofuels both in the United States and abroad may positively impact the demand for our finished products. As a blender, the DGD Joint Venture has recorded approximately $160.4 million and $160.6 million of blenders tax credits for fiscal 2017 and 2016, respectively, with Darling's portion equaling 50%. While in fiscal 2017, the amount of tax credits for biofuels impacting the Company was material, legal challenges or changes to, a failure to enforce, reductions in the mandated volumes under, or discontinuing any of these programs could have a negative impact on our business and results of operations. Although the blenders tax credits expired on December 31, 2016, in February 2018 they were retroactively reinstated for calendar year 2017. However, to date the blenders tax credits have not been extended and are therefore at risk for calendar year 2018 and into the future.

We may incur material costs and liabilities in complying with government regulations.

We are subject to the rules and regulations of various governmental agencies in the United States, the EU, Canada, China and the other countries in which Darling Ingredients International operates. These include rules and regulations administered by governmental agencies at the supranational, federal, state, provincial or local level. See Item 1. "Business - Regulations" for a listing of certain governmental agencies to which we are subject.

The applicable rules, regulations and guidance promulgated by these and other agencies, which are likely to change over time, affect our operations and may influence our operating results at one or more facilities. Furthermore, the loss of or failure to obtain necessary federal, state, provincial or local permits and registrations at one or more of our facilities could halt or curtail operations at impacted facilities, which could result in impairment charges related to the affected facility and otherwise adversely affect our operating results. In addition, our failure to comply with applicable rules, regulations and guidance, including obtaining or maintaining required operating certificates or permits, could subject us to: (i) administrative penalties and injunctive relief; (ii) civil remedies, including fines, injunctions and product recalls; and/or (iii) adverse publicity. There can be no assurance that we will not incur material costs and liabilities in connection with these rules, regulations and guidance.

Because of our international operations throughout much of the world, we could be adversely affected by violations of the FCPA and similar anti-bribery laws, as well as laws and regulations governing international transactions (such as the regulations administered by OFAC). The FCPA and similar anti-bribery laws generally prohibit companies and their intermediaries from making improper payments or providing anything of value to improperly influence government officials or other third parties for the purpose of obtaining or retaining business or obtaining an unfair business advantage. OFAC regulations and other economic sanctions laws and regulations generally prohibit U.S. persons from engaging in transactions or dealings with certain specified countries, territories, people or entities. Recent years have seen a substantial increase in the global enforcement of anti-corruption laws and economic sanctions laws and regulations. Our operations outside the United States, including in developing countries, could increase the risk of such violations. In addition, we may enter into joint ventures with joint venture partners who are domiciled in areas of the world with anti-bribery laws, regulations and business practices that differ from those in the United States. There is risk that our joint venture partners will violate the FCPA or other applicable anti-bribery laws and regulations. While our policies mandate compliance with the FCPA and other anti-bribery laws, as well as economic sanctions, we cannot provide assurance that our internal control policies and procedures will always protect us from violations committed by our employees, joint venture partners or agents. Violations of the FCPA or other anti-bribery laws, or of economic sanctions laws, or allegations of such violations, could result in lengthy investigations and possibly disrupt our business, lead to criminal and/or civil legal proceedings brought by governmental agencies and/or third parties, result in material fines and legal and other costs and have a material adverse effect on our reputation, business, results of operations, cash flows and financial condition.

Given the competitive nature of our industry, we could be adversely affected by violations of various countries' antitrust, competition and consumer protection laws. These laws generally prohibit companies and individuals from engaging in anticompetitive and unfair business practices. While our policies mandate compliance with these laws, we cannot provide assurance that our internal control policies and procedures will always protect us from violations or reckless or criminal acts committed by our employees, joint venture partners or agents.

Seasonal factors and weather, including the physical impacts of climate changes, can impact the availability, quality and volume of raw materials that we process and negatively affect our operations.

The quantity of raw materials available to us is impacted by seasonal factors, including holidays, when raw material volumes decline, and cold weather, which can impact the collection of raw materials. In addition, warm weather can adversely affect the quality of raw materials processed and our yield on production due to more rapidly degrading raw materials. In addition to seasonal impacts, depending upon the location of our facilities and those of our suppliers, our operations could be subject to weather impacts, including the physical impacts of climate changes, changes in rainfall patterns, water shortages, changing sea levels, changing storm patterns and intensities and changing temperature levels. Physical damage, flooding, excessive snowfall or drought resulting from changing climate patterns could adversely impact our costs and business operations, the availability and costs of our raw materials, and the supply and demand for our end products. These effects could be material to our results of operations, liquidity or capital resources. The quality and volume of the finished products that we are able to produce could be negatively impacted by unseasonable or severe weather or unexpected declines in the volume of raw materials available during holidays, which in turn could have a material adverse effect on our business, results of operations and financial condition. In addition, severe weather events may also impact our ability to collect or process raw materials or to transport finished products.

Downturns and volatility in global economies and commodity and credit markets could materially adversely affect our business, results of operations and financial condition.

Our results of operations are materially affected by the conditions of the global economies and the credit, commodities and stock markets. Among other things, we may be adversely impacted if our domestic and international customers and suppliers are not able to access sufficient capital to continue to operate their businesses or to operate them at prior levels. A decline in consumer confidence or changing patterns in the availability and use of disposable income by consumers can negatively affect both our suppliers and customers. Declining discretionary consumer spending or the loss or impairment of a meaningful number of our suppliers or customers could lead to declines in either raw material availability or customer demand. Any tightening in credit supply could negatively affect our customers' ability to pay for our products on a timely basis or at all and could result in a requirement for additional bad debt reserves. Although many of our customer contracts are formula-based, continued volatility in the commodities markets could negatively impact our revenues and overall profits. Counterparty risk on finished product sales can also impact revenue and operating profits when customers either are unable to obtain credit or refuse to take delivery of finished products due to market price declines.

Our substantial level of indebtedness could adversely affect our financial condition.

As of December 29, 2018, our total indebtedness, including trade debt, was approximately $1.7 billion and we had undrawn commitments available for additional borrowings under the revolving loan facility included as part of our senior secured credit facilities of up to approximately $929.8 million (after giving effect to approximately $23.1 million of outstanding letters of credit). Our high level of indebtedness could have important consequences, including the following:

- making it more difficult for us to satisfy our obligations to our financial lenders and our contractual and commercial commitments;
- limiting our ability to obtain additional financing to fund future working capital, capital expenditures, acquisitions or other general corporate requirements on commercially reasonable terms or at all;
- requiring us to use a substantial portion of our cash flows from operations to pay principal and interest on our indebtedness instead of other purposes, thereby reducing the amount of our cash flows from operations available for working capital, capital expenditures, acquisitions and other general corporate purposes;
- increasing our vulnerability to adverse economic, industry and business conditions;
- exposing us to the risk of increased interest rates as certain of our borrowings are at variable rates of interest;
- increasing our exposure to the impact on our debt level of changes in foreign exchange rate conversion to functional currency;
- limiting our flexibility in planning for, or reacting to, changes in our business and the industry in which we operate;
- placing us at a competitive disadvantage compared to other, less leveraged competitors; and
- increasing our cost of borrowing.

In addition, the indentures that govern our senior notes and the credit agreement governing our senior secured credit facilities contain restrictive covenants that limit our ability to engage in activities that may be in our long-term best interest. Our failure to comply with those covenants could result in an event of default which, if not cured or waived, could result in the acceleration of all our funded indebtedness. See Item 7. "Management Discussion and Analysis of Financial Condition and Results of Operations" - "Senior Secured Credit Facilities," "5.375% Senior Notes due 2022" and "3.625% Senior Notes due 2026."

Despite our existing level of indebtedness, we and our subsidiaries may still be able to incur substantially more indebtedness, which could further exacerbate the risks to our financial condition described above.

We and our subsidiaries may be able to incur substantial additional indebtedness in the future, including additional secured indebtedness under the senior secured credit facilities. Although the indentures that govern the senior notes and the credit agreement governing the senior secured credit facilities contain restrictions on our incurrence of additional indebtedness, these restrictions are subject to a number of significant qualifications and exceptions, and the additional indebtedness that could be incurred in compliance with these restrictions could be substantial. To the extent that we or our subsidiaries incur additional indebtedness, the risks associated with our indebtedness, including our possible inability to service our indebtedness, could intensify. See Item 7. "Management Discussion and Analysis of Financial Condition and Results of Operations" - "Senior Secured Credit Facilities," "5.375% Senior Notes due 2022" and "3.625% Senior Notes due 2026."

We may not be able to generate sufficient cash to service all of our indebtedness and may be forced to take other actions to satisfy our obligations under our indebtedness, which may not be successful.

Our ability to make scheduled payments on or to refinance our debt obligations depends on our financial condition and operating performance, which are subject to prevailing economic and competitive conditions and to certain financial, business, legislative, regulatory and other factors beyond our control. We may be unable to maintain a level of cash flows from operating activities sufficient to permit us to pay the principal, premium, if any, and interest on our indebtedness.

If our cash flows and capital resources are insufficient to fund our debt service obligations and to meet our other cash needs, we could be forced to reduce or delay investments and capital expenditures or to dispose of material assets or operations, seek additional debt or equity capital or restructure or refinance our indebtedness. We may not be able to effect any such alternative measures, if necessary, on commercially reasonable terms or at all and, even if successful, such alternative actions may not allow us to meet our scheduled debt service obligations and our other cash needs. The credit agreement governing our senior secured credit facilities and the indentures governing our senior notes restrict our ability to use the proceeds from the disposition of assets, debt incurrence or sales of equity to repay other indebtedness when it becomes due. We may not be able to consummate any such dispositions or to obtain debt or equity proceeds in amounts sufficient to meet any debt service obligations then due, and we may be restricted under the credit agreement governing our senior secured credit facilities or the indentures governing our senior notes from using any such amounts to service other debt obligations.

If we cannot make scheduled payments under any of the agreements governing our debt, we would be in default under such agreements, which could allow lenders under any credit facilities to terminate their commitments to loan money and could allow the applicable lenders or other debt holders to declare all outstanding principal and interest of such debt to be immediately due and payable, and, in the case of secured debt, to foreclose against the assets securing such debt and apply the proceeds from such foreclosure to repay amounts owed to them. Any of these events would likely in turn trigger cross-acceleration or cross-default provisions in our other debt instruments, which would allow the creditors under those instruments to exercise similar rights. If any of these actions are taken, we could be forced into restructuring, bankruptcy or liquidation.

Our ability to repay our indebtedness depends in part on the performance of our subsidiaries, including our non-guarantor subsidiaries, and their ability to make payments.

We conduct a significant portion of our operations through our subsidiaries, a number of which operate outside the United States. Accordingly, repayment of our indebtedness is dependent, to a significant extent, on the generation of cash flow by our subsidiaries and their ability to make such cash available to us. Unless they are guarantors of the indebtedness, our subsidiaries do not have any obligation to pay amounts due on the indebtedness or to make funds available for that purpose. Under certain circumstances, legal and contractual restrictions may limit our ability to obtain cash from our subsidiaries. For example, our subsidiaries that are organized under the laws of, and operate in, China, currently have substantial regulatory restrictions on their ability to make cash available to us. While the credit agreement governing the senior secured credit facilities, the indentures governing our senior notes and the agreements governing certain of our other indebtedness will limit the ability of certain of our subsidiaries to incur consensual restrictions on their ability to make other intercompany payments to us, these limitations are subject to certain significant qualifications and exceptions.

Our business may be negatively impacted by the occurrence of any disease correctly or incorrectly linked to animals.

The emergence of diseases such as swine influenza viruses (collectively known as “Swine Flu”) and highly pathogenic strains of avian influenza (collectively known as “Bird Flu”) and severe acute respiratory syndrome (“SARS”) that are in or associated with animals and have the potential to also threaten humans has created concern that such diseases could spread and cause a global pandemic. Swine Flu is quite common among pigs and is generally not fatal. However, Swine Flu strains are often transmitted to humans and have resulted in fatalities. Bird Flu generally refers to highly aggressive and fatal diseases of birds caused by flu viruses that, once established, can spread rapidly from flock to flock and have also been known to affect humans. To date, various strains of Bird Flu have been and continue to be reported in wild fowl and commercial poultry in Europe, North America, the Middle East and parts of Asia. Reports that these Bird Flu strains can be spread from person to person have been rare and have regarded potential transmission as inefficient and not sustained.

Other diseases that are highly contagious within a species, but do not affect other animals and are not transmissible to humans, such as porcine epidemic diarrhea ("PED") virus, may significantly impact production of the susceptible livestock or poultry species in a country or region. African Swine Fever ("ASF") is a viral and highly contagious disease affecting only pigs and wild boar, for which no cures or approved vaccines are available as of the date of this report. In early August 2018, ASF was reported in domestic pig herds located in Northeast China and has since become widespread, infecting 23 or more Chinese Provinces. Measures to control the disease include, amongst others, marketing only swine tested and certified negative for the virus, depopulating infected herds, biosecurity regimens, restricting the movement of pigs out of infected zones or regions and export bans of live pigs. The restrictions in transportation have created serious dislocations in pork supplies and resulted in strong reduction of slaughter numbers and thereby volumes of raw material supplied to our blood processing locations in China. Additionally, the perception, real or implied, that blood meal and dried plasma powder may contribute to the spread of ASF, has resulted in a temporary ban on the use of porcine plasma in pork feed which has negatively affected demand for our products as ingredients in porcine animal feed in China. ASF has also been reported in Eastern Europe since 2007, predominantly in wild boar and to a limited extent in domestic pigs. It has recently spread over long distance to Western Europe, where since September 13, 2018 ASF has been detected in approximately 50 wild boars in Belgium. As of the date of this report, this spread has been restricted to wild animals only. ASF does not infect humans and is not a food safety hazard. Any reports, proven or perceived, that implicate animal feed or feed ingredients, including but not limited to animal by-products, as contributing to the spread of a contagious animal disease could negatively affect demand for our products as ingredients in animal feeds in the affected country or region.

Although no global disease pandemic among humans has been linked to Bird Flu or other emerging diseases to date, governments may be pressured to address these concerns, including by executive action such as temporarily closing certain businesses, including meat and animal processing facilities, within their jurisdictions suspected of contributing to the spread of such diseases or by legislative or other policy action, such as prohibiting imports of animals, meat and animal by-products from countries or regions where the disease is detected or suspected. If any disease that is correctly or incorrectly linked to animals and has a negative impact on meat or poultry consumption or animal production occurs in any jurisdiction in which we operate, such occurrence could have a material negative impact on the volume of raw materials available to us or the demand for our finished products.

Our business may be affected by the impact of animal related disease, such as BSE and other food safety issues.

The FDA has put in place restrictions to prevent the spread of BSE, and certain foreign governments have also restricted exports of beef and beef products from the United States following the detection of BSE in the United States in December 2003. The sixth and most recent case of BSE was reported in a six-year-old mixed-breed beef cow on August 29, 2018. This was the second such case of BSE since the World Organization for Animal Health (the "OIE") characterized the United States' BSE status as one of "negligible risk" in 2013. This latest case and the previous four cases were the atypical or sporadic form of BSE, which is not spread via feed and, therefore, did not affect the "negligible BSE risk" status of the U.S. Continued concern about BSE in the United States, and other countries in which we operate now or in the future, may result in additional regulatory and market related challenges that may affect our operations or increase our operating costs.

With respect to human food, pet food and animal feed safety in the United States, the Food Safety Modernization Act ("FSMA") was enacted on January 4, 2011 and gave the FDA new authorities, which became effective immediately, and directed the FDA to promulgate new regulations pursuant to the FSMA. Included among these new authorities and regulations are:

- Mandatory recall authority for adulterated or misbranded foods where the use of or exposure to such foods is likely to cause serious adverse health consequences or death to humans or animals, if the responsible party fails to cease distribution and recall such adulterated or misbranded foods voluntarily. The FDA issued guidance on its mandatory recall authority in November 2018.

- Regulations that define the FDA’s administrative detention authority to include the authority to detain an article of food if there is reason to believe the food is adulterated or misbranded.

- Section 306 of the FSMA provides that the FDA must refuse admission of food into the United States if a foreign food establishment or foreign government refuses to permit entry for an inspection. In December 2017, FDA issued draft guidance on what actions constitute refusal of inspection.

- Section 102 of the FSMA amended facility registration requirements in the Federal Food, Drug and Cosmetic (“FD&C”) Act for domestic and foreign manufacturers, processors, packers or holders of food for human or animal consumption, to require that facility registrations be renewed during the fourth quarter of each even-numbered year, beginning October 1, 2012, and that additional information be included in such registrations. FSMA also provides that, if the FDA determines that food manufactured, processed, packed, received, or held by a registered facility has a reasonable probability of causing serious adverse health consequences or death to humans or animals, the FDA may suspend the registration of a facility that created, caused, or was otherwise responsible for such reasonable probability, or knew or had reason to know of such probability and packed, received, or held the food.

- The FDA issued final rules for preventive controls ("PCs") for human food and animal feed ("Human Food PC Rule" and "Animal Food PC Rule," respectively), which apply to registered FDA facilities that manufacture, process, pack and hold human or animal food and require these facilities to establish and implement written food safety plans, which include hazard analyses, PCs to ensure that significant hazards that are identified as needing to be controlled will be significantly reduced or prevented, monitoring of PCs, supply-chain controls if appropriate to control a significant hazard, recall plans, corrective action procedures, verification activities and record keeping standards. The Human Food PC Rule also updates existing Current Good Manufacturing Practices ("CGMPs"), and the Animal Food PC Rule establishes minimum CGMPs for the production, holding and distribution of the human or animal food. The FDA has issued draft guidance to help food facilities comply with requirements under these final rules.

- The FDA issued a regulation relating to Foreign Supplier Verification Programs ("FSVP Rule") requiring that importers of both human and animal food must develop, follow and maintain written procedures verifying that their foreign suppliers produce food in a manner that provides the same level of public health protection as the Human Food PC Rule, Animal Food PC Rule, or FDA's regulations established under FSMA regarding produce safety, as appropriate, and must ensure that the suppliers' food is not adulterated and is not misbranded with respect to allergen labeling of human food. The FDA has issued various guidance documents to assist importers in complying with the FSVP Rule.

- Pursuant to the Sanitary Food Transportation Act of 2005 and FSMA, the FDA requires that sanitary transportation practices be used to transport human and animal foods to prevent such food from being adulterated during transport and applies to shippers, loaders, carriers by motor vehicle or rail vehicle, and receivers engaged in the transportation of food.

- The FDA finalized a rule that requires registered human food facilities to conduct a vulnerability assessment and implement mitigation strategies, including a written food defense plan, to prevent or mitigate potential acts of intentional adulteration of food that could harm the public health. Most large businesses will be required to comply with the rule by July 26, 2019, and the FDA issued draft guidance in June 2018 to assist covered businesses with compliance.

We have followed regulations enacted under the FSMA throughout the rulemaking process and have implemented CGMPs, food safety plans and other procedures at our domestic facilities, which we believe will comply with the applicable final Human Food PC Rule or Animal Food PC Rule. Similar procedures have been implemented at our foreign facilities for compliance with the FSVP Rule. Such rulemaking and implementation of compliant procedures could, among other things, limit our ability to import necessary raw materials or finished products or require us to amend certain of our other operational policies and procedures. Unforeseen issues and requirements may arise as the FDA implements and enforces these and other final rules or promulgates other new regulations provided for by the FSMA.

The FDA has also established a Reportable Food Registry ("RFR") pursuant to the Food and Drug Administration Amendments Act of 2007 (the "FDAAA"). The guidance documents define a reportable food, which the manufacturer or distributor would be required to report in the RFR, to include materials used as ingredients in animal feeds and pet foods, if there is a reasonable probability that the use of, or exposure to, such materials will cause serious adverse health consequences or death to humans or animals. Finalization of the RFR guidance documents and potential additional requirements relating to the RFR may impose additional requirements on us.

In July 2013, the FDA released the "Compliance Policy Guide Sec. 690.800, Salmonella in Food for Animals" (the "CPG"). According to the CPG, any finished pet food contaminated with any species of Salmonella will be considered adulterated and the FDA believes regulatory action is warranted in cases involving such pet foods because of the heightened risk to humans given the high likelihood of direct human contact with the pet food. Finished animal feeds intended for pigs, poultry and other farmed animals, however, will be considered to be adulterated only if the feed is contaminated with a species of Salmonella that is considered to be pathogenic for the animal species for which the feed is intended. Any pathogen, such as Salmonella, that is correctly or incorrectly associated with our finished products could have a negative impact on the demand for our finished products and could have a material adverse effect on our business, reputation, results of operations or financial condition.

As a result of our international operations, we could be adversely affected by additional non-U.S. regulations regarding BSE and other food safety issues. For example, an enforceable ban on the feeding of restricted animal material to ruminant animals was introduced in Australia in 1996. This ban is part of a comprehensive national program to prevent the entry and establishment of the BSE agent in Australia. Inspections and audits are undertaken to ensure compliance. In addition, in the E.U., harmonized rules have been adopted for prevention, control and eradication of transmissible spongiform encephalopathies (“TSEs”), which includes BSE, in Regulation (EC) No 999/2001, as amended (“TSE Regulation”) and in other instruments such as Regulation (EC) No 1069/2009 on animal by-products, as amended (“Animal By-Products Regulation”) and food and other feed hygiene regulations. The TSE Regulation establishes a “feed ban,” which is the basic preventive measure against TSE and consists of a ban on the use of processed animal protein (“PAP”), such as MBM, in feed for farmed animals. Only certain animal proteins considered to be safe (such as fishmeal) can be used, but under very strict conditions. Other animal-derived products besides PAP, such as collagen derived from non-ruminants and hydrolyzed protein derived from parts of non-ruminants or from ruminant hides and skins, are not subject to the “feed ban.” In June 2013, the “feed ban” was lifted for the feeding of aquaculture animals, and the European Commission has been investigating the options to lift the ban for other non-ruminants, such as pigs and poultry. Although Darling Ingredients International may profit from the possible lifting of the ban for pigs and poultry, changes to the “feed ban” may adversely affect Darling Ingredients International, possibly restricting the allowed use of some of their products. The TSE Regulation applies to the production and placing on the market of live animals and products of animal origin on the E.U. market. For that purpose, the BSE status of E.U. Member States, non-E.U. members of the European Economic Area and other countries or regions (“Third Countries”) is to be determined by classification into one of three categories depending on the BSE risk involved: a negligible risk, a controlled risk or an undetermined risk. This classification is made by the OIE. The determination of BSE status is based on a risk assessment and the implementation of a surveillance program. For each risk category there are trade rules to provide the necessary guarantees for protecting public and animal health. Currently, the following E.U. Member States are classified as having a controlled BSE risk: France, Greece, Ireland and a zone within the United Kingdom (consisting of England and Wales). The other E.U. Member States, including two zones within the United Kingdom (consisting of Northern Ireland and Scotland), are classified as having a negligible BSE risk. A change in the BSE status of one or more E.U. Member States may have a negative impact on Darling Ingredients International. Under E.U. legislation, imported products from outside the E.U. must meet the same safety standards as products produced in E.U. Member States. Therefore, the TSE Regulation imposes strict import requirements related to TSEs for live animals and animal by-products, such as full traceability of imported animals and animal by-products, a ban on the use of MBM in feed for ruminants and the prohibition of the import of specified risk material or mechanically recovered meat. The detailed import requirements depend on the BSE status of Third Countries. The Animal By-Products Regulation establishes rules intended to prevent the outbreak of certain diseases such as BSE. The Animal By-Products Regulation imposes, for example, rules for the use and disposal of specified risk material and other high risk material. A BSE outbreak or other event viewed as hazardous to animal or human health could lead to the adoption of more stringent rules on the use and disposal of animal by-products, which could require Darling Ingredients International to change its production processes and could have a material adverse effect on our business, results of operations or financial condition.

If we or our customers are the subject of product liability or other claims or product recalls we may incur significant and unexpected costs and our business reputation could be adversely affected.

We and our customers for whom we manufacture products may be exposed to product liability or other claims, product recalls and adverse public relations if consumption or use of our products is alleged to cause injury or illness to humans or animals. In addition, we and our customers may be subject to product liability or other claims, product recalls, and adverse public relations resulting from developments relating to the discovery of unauthorized adulterations to food additives or other products or from allegations that our food ingredients or other products were mislabeled, were not produced in accordance with the customer’s specifications and/or have not performed adequately in the end product, even where food safety or other product safety is not a concern. In some cases, we indemnify our customers for product liability and other claims related to our products. Product recalls in one jurisdiction may result in product recalls in other jurisdictions, as is the case in the EU, where an EU Member State could recall a product in connection with the recall of such product in another EU Member State. Our insurance may not be adequate to cover all liabilities we incur in connection with product liability and/or other claims, whether or not legitimate, or product recalls, whether voluntary or mandatory. We may not be able to maintain our existing insurance or obtain comparable insurance at a reasonable cost for such matters. A judgment against us or against one of our customers for whom we manufacture or provide products on a product liability or other claim, or our or their agreement to settle a product liability or other claim, or a product recall, could also result in substantial and unexpected expenditures, which would reduce operating income and cash flow. In addition, even if product liability or other claims against us or our customers for whom we manufacture products are not successful or are not fully pursued, defending these claims would likely be costly and time-consuming and may require management to spend time defending the claims which takes time away from operating our business. Any such claim could also result in adverse publicity and negatively impact our reputation.

Product liability or other claims, product recalls or any other events that cause consumers to no longer associate our brands or those of our customers for whom we manufacture products with high quality and safety may harm the value of our and their brands and lead to decreased demand for our products. In addition, as a result of any such claims against us or product recalls, we may be exposed to claims by our customers for damage to their reputations and brands. Product liability or other claims and product recalls may also lead to increased scrutiny or investigations by federal, state and foreign regulatory agencies of our operations and could have a material adverse effect on our brands, business, results of operations and financial condition.

Changes in consumer preference could negatively impact our business.

The food and pet food industries in general are subject to changing consumer trends, demands and preferences. Trends within the food and pet food industries change often, and failure to identify and react to changes in these trends could lead to, among other things, reduced demand and price reductions for our products or those of our customers for whom we manufacture products, and could have an adverse effect on our financial results.

Our operations are subject to various laws, rules and regulations relating to the protection of the environment and to health and safety, and we could incur significant costs to comply with these requirements or be subject to sanctions or held liable for environmental damages.

Our operations subject us to various and increasingly stringent environmental, health and safety requirements in the various jurisdictions where we operate, including those governing air emissions, wastewater discharges, the management, storage and disposal of materials in connection with our facilities, occupational health and safety, product packaging and labeling and our handling of hazardous materials and wastes, such as gasoline and diesel fuel used by our trucking fleet and operations. Failure to comply with these requirements could have significant consequences, including recalls, penalties, injunctive relief, claims for personal injury and property and natural resource damages, other claims and negative publicity. Our operations require the control of air emissions and odor and the treatment and discharge of wastewater to municipal sewer systems and the environment. We operate boilers at many of our facilities and store wastewater in lagoons or, as permitted, discharge it to publicly owned wastewater treatment systems or surface waters, or through land application. We have incurred significant capital and operating expenditures to comply with environmental requirements, including for the upgrade of wastewater treatment facilities, and will continue to incur such costs in the future.

We could be responsible for the remediation of environmental contamination and may be subject to associated liabilities and claims for personal injury and property and natural resource damages. We own or operate numerous properties, have been in business for many years and have acquired and disposed of properties and businesses over that time. During that time, we or other owners or operators may have generated or disposed of wastes or stored or handled other materials that are or may be considered hazardous or may have polluted the soil, surface water or groundwater at or around our facilities. Under some environmental laws, such as the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 in the United States, also known as the Superfund law, responsibility for the cost of cleanup of a contaminated site can be imposed upon current or former site owners and operators, or upon any party that sent waste to the site, regardless of the lawfulness of the activities that led to the contamination. Similar laws outside the United States impose liability for environmental cleanup, often under the polluter pays theory of liability but also based upon ownership in some circumstances. There can be no assurance that we will not face extensive costs or penalties that would have a material adverse effect on our financial condition and results of operations. For example, we have received notice from the EPA relating to alleged river sediment contamination in the Lower Passaic River area of New Jersey. See Item 3. “Legal Proceedings.” In addition, future developments, such as more aggressive enforcement policies, new laws or discoveries of currently unknown contamination conditions, may also require expenditures that may have a material adverse effect on our business and financial condition.

In addition, increasing efforts to control emissions of GHG are likely to impact our operations. We operate in certain jurisdictions subject to the Kyoto Protocol and the Paris Agreement, which mandate reduced GHG emissions in certain participating countries, and the EPA’s rule establishing mandatory GHG reporting for certain activities may apply to some of our facilities if we exceed the applicable thresholds. The EPA has also announced a regulatory endangerment finding relating to GHG emissions that has led to further regulation of GHG emissions. Legislation to regulate GHG emissions has periodically been proposed in the U.S. Congress and a growing number of states and foreign countries are taking action to require reductions in GHG emissions. Future GHG emissions limits may require us to incur additional capital and operational expenditures. EPA regulations limiting exhaust emissions also have become more restrictive, and the National Highway Traffic Safety Administration and the EPA have adopted regulations that govern fuel efficiency and GHG emissions which began in 2014. Compliance with these and similar regulations could increase the cost of new fleet vehicles and increase our operating expenses. Compliance with future GHG regulations may require expenditures that could materially adversely affect our business, results of operations and financial condition.

We have approximately 9,800 employees world-wide and are subject to a wide range of local, provincial and national laws and regulations governing the health and safety of workers, including, for example, OSHA in the United States. We can be subject to potential fines and civil and, in egregious cases, criminal actions if we are found to be in violation of worker health and safety laws in any of these jurisdictions. Further, as such laws and regulations change, we may sometimes be required to commit to unplanned capital expenditures in order to continue to comply with workplace safety requirements at our facilities. In addition, we operate and maintain an extensive vehicle fleet to transport products to and from customer locations in all jurisdictions where we have facilities. Our fleets and drivers are subject to federal, state, local and foreign laws and licensing requirements applicable to commercial fleets, their cargo and their hours and methods of operation. Failure to comply with these laws and regulations in any location could materially adversely affect our business, results of operations, financial condition and reputation.

If we experience difficulties or a significant disruption in our information systems or if we fail to implement new systems and software successfully, our business could be materially adversely affected.

We depend on information systems throughout our business to collect and process data that is critical to our operations and accurate financial reporting. Among other things, these information systems process incoming customer orders and outgoing supplier orders, manage inventory, and allow us to efficiently collect raw materials and distribute products, process and bill shipments to and collect cash from our customers, respond to customer and supplier inquiries, contribute to our overall internal control processes, maintain records of our property, plant and equipment, and record and pay amounts due vendors and other creditors.

If we were to experience a disruption in our information systems that involve interactions with suppliers and customers, it could result in a loss of raw material supplies, sales and customers and/or increased costs, which could have a material adverse effect on our business, financial condition and results of operations. In addition, any such disruption could adversely affect our ability to meet our financial reporting obligations. We may also encounter difficulties in developing new systems or maintaining and upgrading existing systems and software. Such difficulties may lead to significant expenses or losses due to unexpected additional costs required to implement or maintain systems, disruption in business operations, loss of sales or profits, or cause us to incur significant costs to reimburse third parties for damages, and, as a result, may have a material adverse effect on our results of operations and financial condition. We could also experience impairment of our reputation if any of these events were to occur.

The Company is in the process of a multi-year project to replace our existing work management, financial and supply chain software applications with a new suite of systems, including an enterprise resource planning (“ERP”) system for North America. We currently are upgrading the system to the latest release of software being utilized by Darling Ingredients International, including at its North American facilities. The ERP system’s implementation process involves a number of risks that may adversely hinder our business operations and/or affect our financial condition and results of operations, if not implemented successfully. The ERP system’s implementation is a complex and time-consuming project that involves substantial expenditures for implementation consultants, system hardware, software and implementation activities, as well as the transformation of business and financial processes.

As with any large software project, there are many factors that may materially affect the schedule, cost, execution and implementation of this project. Those factors include: problems during the design, implementation and testing phases; system delays and/or malfunctions; the risk that suppliers and contractors will not perform as required under their contracts; the diversion of management’s attention from daily operations to the project; re-works due to changes in business processes or financial reporting standards; and other events, some of which are beyond our control. These types of issues could disrupt our business operations and/or our ability to timely and accurately process and report key components of our financial results and and/or complete important business processes such as the evaluation of our internal controls and attestation activities pursuant to Section 404 of the Sarbanes-Oxley Act of 2002. Accordingly, material deviations from the project plan or unsuccessful execution of the plan may adversely affect our business, results of operations and financial condition.

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

We rely upon our information systems and networks in connection with a variety of business activities, and we collect and store sensitive data. Increased security threats to information systems and more sophisticated computer crime pose a risk to the security of our systems and networks and the confidentiality, availability and integrity of our data. A failure of or breach in technology security could expose us and our customers and suppliers to risks of misuse of information or systems, the compromising of confidential information, manipulation and destruction of data, defective products, production downtimes and operating disruptions, which in turn could adversely affect our reputation, competitive position, business and results of operations. In addition, such breaches in security could result in litigation, regulatory action and potential liability and the costs and operational consequences of implementing further data protection measures.

Furthermore, we are subject to complex and evolving laws and regulations regarding privacy, know-your-customer requirements, data protection, including the General Data Protection Regulation ("GDPR") adopted in the EU, cross-border data movement and other matters. Principles concerning the appropriate scope of consumer and commercial privacy vary considerably in different jurisdictions, and regulatory and public expectations regarding the definition and scope of consumer and commercial privacy may remain fluid. It is possible that these laws may be interpreted and applied by various jurisdictions in a manner inconsistent with our current or future practices or inconsistent with one another. If personal, confidential or proprietary information of customers or employees in our possession is mishandled or misused, we may face regulatory, reputational and operational risks which could have an adverse effect on our financial condition and results of operations.

Our success is dependent on our key personnel.

Our success depends to a significant extent upon a number of key employees, including members of senior management. The loss of the services of one or more of these key employees could have a material adverse effect on our results of operations and prospects. We believe that our future success will depend in part on our ability to attract, motivate and retain skilled technical, managerial, marketing and sales personnel. Competition for these types of skilled personnel is intense and there can be no assurance that we will be successful in attracting, motivating and retaining key personnel. The failure to hire and retain such personnel could materially adversely affect our business, results of operations and financial condition.

In certain markets we are highly dependent upon a single operating facility and various events beyond our control could cause an interruption in the operation of our facilities, which could adversely affect our business in those markets.

Our facilities are subject to various federal, state, provincial and local environmental and other permitting requirements of the countries in which we operate, depending on the locations of those facilities. Periodically, these permits may be reviewed and subject to amendment or withdrawal. Applications for an extension or renewal of various permits may be subject to challenge by community and environmental groups and others. In the event of a casualty, condemnation, work stoppage, permitting withdrawal or delay, severe weather event, or other unscheduled shutdown involving one of our facilities, in a majority of our markets we would utilize a nearby operating facility to continue to serve our customers in the affected market. In certain markets, however, we do not have alternate operating facilities. In the event of a casualty, condemnation, work stoppage, permitting withdrawal or delay, severe weather event or other unscheduled shutdown in these markets, we may experience an interruption in our ability to service our customers and to procure raw materials, and potentially an impairment of the value of that facility. Any of these circumstances may materially and adversely affect our business and results of operations in those markets. In addition, after an operating facility affected by a casualty, condemnation, work stoppage, permitting withdrawal or delay or other unscheduled shutdown is restored, there could be no assurance that customers who in the interim choose to use alternative disposal services would return to use our services.

We could incur a material weakness in our internal control over financial reporting that would require remediation.

Any future failures to maintain the effectiveness of our disclosure controls and procedures, including our internal control over financial reporting, could subject us to a loss of public confidence in our internal control over financial reporting and in the integrity of our financial statements and our public filings with the SEC and other governmental agencies and could harm our operating results or cause us to fail to meet our regulatory reporting obligations in a timely manner.

Changes in our tax rates or exposure to additional income tax liabilities could impact our profitability.

We are subject to income taxes in the United States and in numerous other foreign jurisdictions. Due to economic and political conditions, tax rates in various jurisdictions, including the United States, may be subject to change. Our future effective tax rates could be adversely affected by changes in the mix of earnings by jurisdictions with differing statutory tax rates, changes in the valuation of deferred tax assets and liabilities and changes in tax laws or tax rates including recently enacted tax reform in the United States, the implementation of the E.U.'s Anti-Tax Avoidance Directive by E.U. members states, as well as proposed Dutch tax law changes. The changes included in the tax reform enacted in the United States in 2017 are broad and complex and, among other things, included changes to U.S. federal income tax rates, imposed significant additional limitations on the deductibility of business interest expense and net operating losses and put into effect a number of changes impacting operations outside the United States. Many aspects of the tax reform remain unclear and a number of U.S. states have not yet updated their laws to take into account the new legislation. As a result, there may be further impacts of the new law. It is possible that U.S. tax reform, or interpretations under it, could change and could have an adverse effect on us, and such effect could be material. In addition, the amount of income taxes we pay is subject to ongoing audits in various jurisdictions and a material assessment by governing tax authority could affect our profitability.

An impairment in the carrying value of our goodwill or other intangible assets may have a material adverse effect on our results of operations.

As of December 29, 2018, the Company had approximately $1.2 billion of goodwill. We are required to annually test goodwill to determine if impairment has occurred. Additionally, impairment of goodwill must be tested whenever events or changes in circumstances indicate that impairment may have occurred. If the testing performed indicates that impairment has occurred, we are required to record a non-cash impairment charge for the difference between the carrying value of the goodwill and the implied fair value of the goodwill in the period the determination is made. The testing of goodwill for impairment requires us to make significant estimates about our future performance and cash flows, as well as other assumptions. These estimates can be affected by numerous factors, including changes in economic, industry or market conditions, changes in business operations or regulation, or changes in competition. Changes in these factors, or changes in actual performance compared with estimates of our future performance, may affect the fair value of goodwill, which may result in an impairment charge. For example, a deterioration in demand for, or increases in costs for producing, a supplier’s principal products could lead to a reduction in the supplier’s output of raw materials, thus impacting the fair value of a plant processing that raw material. We cannot accurately predict the amount and timing of any impairment of assets. Should the value of goodwill become impaired, there may be a material adverse effect on our results of operations.

We may be subject to work stoppages at our operating facilities, which could cause interruptions in the manufacturing or distribution of our products.

While we currently have no international, national or multi-plant union contracts, as of December 29, 2018 approximately 22% of Darling’s North American employees, 27% of Rothsay’s employees and 39% of Darling Ingredients International’s employees were covered by various collective bargaining agreements. Furthermore, local laws and regulations in certain jurisdictions in which we operate provide for worker groups with prescribed powers and rights with regard to working conditions, wages and similar matters. In jurisdictions where such groups do not exist, labor organizing activities could result in additional employees becoming unionized and higher ongoing labor costs. Darling’s collective bargaining agreements expire at varying times over the next five years. In contrast, Darling Ingredients International’s collective bargaining agreements generally have one to two year terms. Rothsay agreements generally have terms up to three years. Some of our collective bargaining agreements have already expired and are in the process of being renegotiated. There can be no assurance that we will be able to negotiate the terms of any expiring or expired agreement in a manner acceptable to us. If our workers were to engage in a strike, work stoppage, slowdown or other collective action in the future in any of our locations, we could experience a significant disruption of our operations, which could have a material adverse effect on our business, results of operations and financial condition. We may also be subject to general country strikes or work stoppages unrelated to our business or collective bargaining agreements that could have a direct or indirect adverse effect on our business, results of operation or financial condition.

Litigation or regulatory proceedings may materially adversely affect our business, results of operations and financial condition.

We are a party to various lawsuits, claims and loss contingencies arising in the ordinary course of business, including insured worker's compensation, auto, and general liability claims, assertions by certain regulatory and governmental agencies related to permitting requirements and/or air, wastewater and storm water discharges from the Company’s processing facilities, litigation involving tort, contract, statutory, labor, employment, and other claims, and tax matters. The outcome of litigation, particularly class action lawsuits, and regulatory proceedings is difficult to assess or quantify. Plaintiffs (including governmental agencies) in these types of lawsuits and proceedings may seek recovery of very large or indeterminate amounts, and the magnitude of the potential loss relating to such lawsuits or proceedings may remain unknown for substantial periods of time. The costs of responding to or defending future litigation or regulatory proceedings may be significant and any future litigation or regulatory proceedings may divert the attention of management away from our strategic objectives. There may also be adverse publicity associated with litigation or regulatory proceedings that may decrease customer confidence in our business, regardless of whether the allegations are valid or whether we are ultimately found liable. As a result, litigation or regulatory proceedings may have a material adverse effect on our business, results of operations and financial condition. For more information related to our litigation and regulatory proceedings, see Item 3. "Legal Proceedings."

Certain U.S. multiemployer defined benefit pension plans to which we contribute are underfunded and these plans and our European pension funds may require minimum funding contributions.

We participate in various U.S. multiemployer pension plans which provide defined benefits to certain employees covered by labor contracts. These plans are not administered by us and contributions are determined in accordance with provisions of negotiated labor contracts to meet their pension benefit obligations to their participants. Based upon the most currently available information, certain of these multiemployer plans are underfunded due partially to a decline in the value of the assets supporting these plans, a reduction in the number of actively participating members for whom employer contributions are required and the level of benefits provided by the plans. In addition, the U.S. Pension Protection Act, which went into effect in January 2008, requires underfunded pension plans to improve their funding ratios within prescribed intervals based on the level of their underfunding. As a result, our required contributions to these plans may increase in the future. Furthermore, under current law, a termination of, our voluntary withdrawal from or a mass withdrawal of all contributing employers from any underfunded multiemployer defined benefit plan to which we contribute would require us to make payments to the plan for our proportionate share of such multiemployer plan’s unfunded vested liabilities. Also, if a multiemployer defined benefit plan fails to satisfy certain minimum funding requirements, the Internal Revenue Service (“IRS”) may impose a nondeductible excise tax of 5% on the amount of the accumulated funding deficiency for those employers not contributing their allocable share of the minimum funding to the plan. Requirements to pay increased contributions, withdrawal liability and excise taxes could negatively impact our liquidity and results of operations.

In the EU, pension funds are generally subject to the Institution for Occupational Retirement Provision Directive (Directive 2003/41/EC) (the “IORP Directive”) as implemented in the relevant EU Member States. The IORP Directive provides for certain general solvency requirements but allows EU Member States discretion to impose specific national requirements. As a result, the solvency of EU pension funds are mostly regulated on a national level. On December 23, 2016, the new IORP Directive (“IORP Directive II”) was published on the Official Journal of the European Union and entered into force on January 12, 2017. The final version of IORP Directive II does not make substantive changes to the solvency requirements under the current IORP Directive. The new IORP Directive recognizes in one of its recitals that changes in this area could potentially decrease the willingness of employers to provide occupational pension schemes. EU Member States now have until January 13, 2019 to implement IORP Directive II into national legislation. On 22 October 2018, two statutory instruments were made which will transpose certain provisions of IORP Directive II into UK law on January 13, 2019. The UK will continue to be bound by EU law until the end of the two-year Brexit negotiation period. However, much of EU law affecting occupational pension schemes has already been incorporated into UK legislation. The extent to which the IORP Directive II continues to apply to the UK at the end of the two-year negotiating period will depend on the framework negotiated for the UK's ongoing relationship with the EU.

The insurance coverage that we maintain may not fully cover all operational risks, and if the number or severity of claims for which we are self-insured increases, if we are required to accrue or pay additional amounts because the claims prove to be more severe than our recorded liabilities, if our insurance premiums increase or if we are unable to obtain insurance at acceptable rates or at all, our financial condition and results of operations may be materially adversely affected.

We maintain property, business interruption and casualty insurance but such insurance may not cover all of the risks associated with the hazards of our business and is subject to limitations, including deductibles and maximum liabilities covered. We may incur losses beyond the limits, or outside the coverage, of our insurance policies, including liabilities for environmental remediation. In the future, the types of insurance we obtain and the level of coverage we maintain may be inadequate or we may be unable to continue to maintain our existing insurance or obtain comparable insurance at a reasonable cost.

Our worker's compensation, auto and general liability policies contain significant deductibles or self-insured retentions. We develop bi-yearly and record quarterly an estimate of our projected insurance-related liabilities. We estimate the liabilities associated with the risks retained by us, in part, by considering historical claims experience, demographic and severity factors and other actuarial assumptions. Any actuarial projection of losses is subject to a degree of variability. If the number or severity of claims for which we are self-insured increases, or we are required to accrue or pay additional amounts because the claims prove to be more severe than our original assessments, our financial condition and results of operations may be materially adversely affected. In addition, in the future, our insurance premiums may increase and we may not be able to obtain similar levels of insurance on reasonable terms or at all. Any such inadequacy of, or inability to obtain, insurance coverage could have a material adverse effect on our business, financial condition and results of operations.

We may not successfully identify and complete acquisitions on favorable terms or achieve anticipated synergies relating to any acquisitions, and such acquisitions could result in unknown liabilities, unforeseen operating difficulties and expenditures and require significant management resources.

We regularly review potential acquisitions of complementary businesses, services or products. However, we may be unable to identify suitable acquisition candidates in the future. Even if we identify appropriate acquisition candidates, we may be unable to complete or finance such acquisitions on favorable terms, if at all. In addition, the process of integrating an acquired business, service or product into our existing business and operations may result in unforeseen operating difficulties and expenditures. Integration of an acquired company also may require significant management resources that otherwise would be available for ongoing development of our business. Moreover, we may not realize the anticipated benefits of any acquisition or strategic alliance and such transactions may not generate anticipated financial results. Future acquisitions could also require us to incur debt, assume contingent liabilities or amortize expenses related to intangible assets, any of which could harm our business. Finally, acquisitions may be structured in such a manner that would result in the assumption of unknown liabilities not disclosed by the seller or uncovered during pre-acquisition due diligence.

We may divest of certain of our brands or businesses from time to time, which could adversely affect us.

We evaluate our business regularly and, from time to time, we may decide to divest ourselves of brands or businesses that do not meet our strategic objectives or do not meet our growth or profitability targets. No assurance can be given that we will be able to divest of a brand or business on favorable terms or without significant costs or that we will be able to achieve the anticipated benefits or cost savings from the divestitures. Any such divestitures may adversely affect our results of operations if we are unable to offset the dilutive impacts from the loss of revenue associated with the divested brands or businesses, or otherwise achieve the anticipated benefits or cost savings from the divestitures. Moreover, we may incur asset impairment charges related to divestitures that reduce our profitability.

Media campaigns related to feed and food ingredient production present risks.

Individuals or organizations can use social media platforms to publicize inappropriate or inaccurate stories or perceptions about the feed and food ingredient production industries or our company. Such practices could cause damage to the reputations of our company and/or the feed and food ingredient production industries in general. This damage could adversely affect our financial results.

Terrorist attacks or acts of war may cause damage or disruption to us and our employees, facilities, information systems, security systems, suppliers and customers, which could materially and adversely affect our net sales, costs and expenses and financial condition.

Terrorist attacks, such as those that occurred on September 11, 2001, have contributed to economic instability in the United States and in certain other countries, and further acts of terrorism, bioterrorism, cyberterrorism, violence or war could affect the markets in which we operate, our business operations, our expectations and other forward-looking statements contained in this report. The potential for future terrorist attacks, the U.S. and international responses to terrorist attacks and other acts of war or hostility, including the ongoing conflicts in the Middle East, North Korea and Ukraine, may cause economic and political uncertainties and cause our business to suffer in ways that cannot currently be predicted. Events such as those referred to above could cause or contribute to a general decline in investment valuations. In addition, terrorist attacks, particularly acts of bioterrorism, that directly impact our facilities or those of our suppliers or customers could have an impact on our sales, supply chain, production capability and costs and our ability to deliver our finished products.

We may be unable to protect our intellectual property rights.

We maintain valuable patents, trademarks, service marks, copyrights, trade names, trade secrets, proprietary technologies and similar intellectual property, and consider our intellectual property to be of material value. Our efforts to protect our intellectual property and proprietary rights may not be sufficient. Patents may not be issued for any pending or future patent applications owned by or licensed to us, and the claims allowed under any issued patents may not be sufficiently broad to protect our technology. Any issued patents owned by or licensed to us may be challenged, invalidated or circumvented, and the rights under these patents may not provide us with competitive advantages. In addition, competitors may design around our technology or develop competing technologies. Intellectual property rights may also be unavailable or limited in some foreign countries, which could make it easier for competitors to capture market position in such countries by utilizing technologies that are similar to those developed or licensed by us. If we do not obtain sufficient protection for our intellectual property, or if we are unable to effectively protect our intellectual property rights, our competitiveness could be impaired, which would limit our growth and future revenue. Any litigation to enforce our intellectual property rights, protect our trade secrets or determine the validity and scope of the proprietary rights of others could result in substantial costs and diversion of resources, with no assurance of success.

Our products, processes, methods, and equipment may infringe upon the intellectual property rights of others, which may cause us to incur unexpected costs or prevent us from selling our products.

We have in the past and may in the future be subject to legal proceedings and claims in the ordinary course of our business, including claims of alleged infringement of patents, trademarks and other intellectual property rights of third parties by us or our customers. Any such claims, whether or not meritorious, could result in costly litigation and divert the efforts of our management. Moreover, should we be found liable for infringement, we may be required to enter into licensing agreements (which may not be available on acceptable terms or at all) or to pay damages and cease making or selling certain products. Any of the foregoing could cause us to incur significant costs and prevent us from manufacturing or selling our products and thereby materially adversely affect our business, results of operations and financial condition.

The healthcare reform legislation in the United States and its implementing regulations could impact the healthcare benefits we are required to provide our employees in the United States and cause our compensation costs to increase, potentially reducing our net income and adversely affecting our cash flows.

In March 2010, the Patient Protection and Affordable Care Act, as amended by the Health Care and Education Affordability Reconciliation Act (the “ACA”), were signed into law in the United States. This healthcare reform legislation and its applicable implementing regulations contain provisions that could materially impact our future healthcare costs, including the contributions we are required to make to our benefit plans. In particular, the requirement that we either offer our full-time employees healthcare coverage that satisfies the ACA's affordability and minimum value standards or potentially be subject to an excise tax penalty became effective in calendar year 2015. In addition, beginning in 2016, we had to file information returns with the IRS regarding the health insurance coverage offered to our full-time employees in the prior calendar year and furnish to employees a statement that includes the same information provided to the IRS. While we have timely filed such returns and provided our employees with the required statements to date, failure to do so in the future could expose us to reporting penalties under applicable sections of the Internal Revenue Code. These provisions could reduce our net income and adversely affect our cash flows.

Legislative changes to, or regulatory changes under, all or certain portions of the ACA remain possible and appear likely under the Trump administration. President Trump has signed two executive orders and other directives designed to delay the implementation of certain provisions of the ACA or otherwise circumvent some of the requirements for health insurance mandated by the ACA. Concurrently, members of U.S. Congress have proposed legislation that would repeal or repeal and replace all or part of the ACA. While Congress has not passed comprehensive repeal legislation, two bills affecting the implementation of certain taxes under the ACA have been signed into law. The Tax Act, passed in December 2017, includes a provision repealing, effective January 1, 2019, the tax-based shared responsibility payment imposed by the ACA on certain individuals who fail to maintain qualifying health coverage for all or part of a year that is commonly referred to as the “individual mandate.” Additionally, President Trump signed a continuing resolution on appropriations for fiscal year 2018 that delayed the implementation of certain ACA-mandated fees, including the so-called “Cadillac” tax on certain high cost employer-sponsored insurance plans, the annual fee imposed on certain health insurance providers based on market share, and the medical device excise tax on non-exempt medical devices. Further, the Bipartisan Budget Act of 2018, or the BBA, among other things, amended the ACA, effective January 1, 2019, to close the coverage gap in most Medicare drug plans, commonly referred to as the “donut hole”. There is uncertainty with respect to the impact that the reform proposals from the President’s administration and U.S. Congress may have, if any, including whether legislative reform will be enacted and whether any proposals will encompass or potentially alter the full-time employee healthcare coverage requirements and reporting obligations imposed on large employers like us. Any changes may likely take time to unfold, and we cannot predict the ultimate content, timing, or effect of any healthcare reform legislation or the impact of potential legislation or related proposals and policies on us. We cannot assure that the ACA, as currently enacted or as amended in the future, will not adversely affect our business and financial results and we cannot predict how future federal or state legislative or administrative changes relating to healthcare reform will affect our business.

Because of our prior acquisitions and future acquisitions we may engage in, our historical operating results may be of limited use in evaluating our historical performance and predicting our future results.

Darling has acquired a number of businesses in recent years, including Rothsay and VION Ingredients, and we expect that we will engage in acquisitions of other businesses from time to time in the future. The operating results of the acquired businesses are included in our financial statements from the date of the completion of such acquisitions. All of Darling's acquisitions have been accounted for using the acquisition method of accounting. Use of this method has resulted in a new valuation of the assets and liabilities of the acquired companies. We expect a substantial increase in our depreciation and amortization and reduction in our operating and net income commensurate with such increase. As a result of these acquisitions and any future acquisitions, our historical operating results may be of limited use in evaluating our historical performance and predicting our future results.

We may incur significant charges in the event we close or divest all or part of a manufacturing plant or facility.

We periodically assess our manufacturing operations in order to manufacture and distribute our products in the most efficient manner. Based on our assessments, we may make capital improvements to modernize certain units, move manufacturing or distribution capabilities from one plant or facility to another plant or facility, discontinue manufacturing or distributing certain products or close or divest all or part of a manufacturing plant or facility. The closure or divestiture of all or part of a manufacturing plant or facility could result in future charges that could be significant to our business, results of operations and financial condition.

The vote by the United Kingdom mandating its withdrawal from the EU could have an adverse effect on our business, investments and future operations in Europe.

The vote on June 23, 2016 by the United Kingdom (the “UK”) to exit the EU, or Brexit, has created uncertainty in the global financial markets, but the eventual effects of the UK’s withdrawal from the EU on our business or our investment portfolios are uncertain at this time. On March 29, 2017, the Prime Minister of the UK notified the European Council in accordance with Article 50 of the Treaty on European Union of the United Kingdom’s intention to withdraw from the EU, triggering a two-year period for the negotiation of the UK’s withdrawal from the EU. The effect of Brexit on our business and investments is uncertain as negotiations commence to determine the future terms of the UK relationship with the EU. The effects of the UK’s withdrawal from the EU will depend on agreements the UK makes to retain access to EU markets either during a transitional period or more permanently. Brexit could impair the ability of Darling Ingredients International to transact business in the future in the UK, including by restricting the free travel of employees from and to the UK and through legal uncertainty and potentially divergent national laws and regulations as the UK determines which EU laws to replace or replicate. Furthermore, Brexit is likely to continue to adversely affect European and worldwide economic conditions and could contribute to greater instability in the global financial markets before and after the terms of the UK’s future relationship with the EU are settled. These effects could have an adverse effect on our business, investments and future operations in Europe. A vote on the Brexit deal took place in the House of Commons on January 15, 2019. The deal was rejected by 202 votes to 432. The government survived a subsequent vote of confidence and will continue to work on a deal that can achieve the necessary parliamentary support. If a deal is eventually approved by Parliament and the necessary legislation passed in time, the current intention is for a transition period to run from March 29, 2019 to December 31, 2020 during which businesses and the UK government can prepare for new arrangements after Brexit. If a deal cannot be approved before March 29, 2019 there are a number of possible scenarios, including a delay of Article 50, renegotiation of the deal with the EU, a second vote of confidence, a general election, a second referendum or leaving with no deal. In the no-deal scenario, due to the loss of the single-market and in the absence of transitional arrangements with the EU, there is a greater risk that trade between UK and EU businesses will be adversely affected, particularly in relation to highly regulated products such as pharmaceuticals and products of animal-origin, due to the additional regulatory burdens that are likely to be imposed on exporters/ importers which may affect the availability of these products.

Risks Related to our Common Stock

The market price of our common stock has been and may continue to be volatile, which could cause the value of your investment to decline.

The market price of our common stock has been subject to volatility and, in the future, the market price of our common stock could fluctuate widely in response to numerous factors, many of which are beyond our control. Numerous factors, including many over which we have no control, may have a significant impact on the market price of our common stock. In addition to the risk factors discussed in this report, the price and volume volatility of our common stock may be affected by:

- actual or anticipated fluctuations in ingredient prices;
- actual or anticipated variations in our operating results;
- our earnings releases and financial performance;
- changes in financial estimates or buy/sell recommendations by securities analysts;
- our ability to repay our debt;
- our access to financial and capital markets to refinance our debt;

- performance of our joint venture investments, including the DGD Joint Venture;
- our dividend policy;
- market conditions in the industry and the general state of the securities markets;
- investor perceptions of us and the industry and markets in which we operate;
- governmental legislation or regulation;
- currency and exchange rate fluctuations that impact our earnings and balance sheet; and
- general economic and market conditions, such as U.S. or global reactions to economic developments, including regional recessions, currency devaluations or political unrest.

Future sales of our common stock or the issuance of other equity may adversely affect the market price of our common stock.

We are not restricted from issuing additional common stock, including securities that are convertible into or exchangeable for, or that represent the right to receive, common stock. The issuance of additional shares of our common stock or convertible securities, including our outstanding options, or otherwise, will dilute the ownership interest of our common stockholders.

Sales of a substantial number of shares of our common stock or other equity-related securities in the public market could depress the market price of our common stock and impair our ability to raise capital through the sale of additional equity securities. We cannot predict the effect that future sales of our common stock or other equity-related securities would have on the market price of our common stock.

Our common stock is an equity security and is subordinate to our existing and future indebtedness.

Shares of our common stock are equity interests and do not constitute indebtedness. As such, the shares of common stock will rank junior to all of our indebtedness, including our trade debt, and to other non-equity claims on us and our assets available to satisfy claims on us, including claims in a bankruptcy, liquidation or similar proceedings. Our existing indebtedness restricts, and future indebtedness may restrict, payment of dividends on the common stock.

Unlike indebtedness, where principal and interest customarily are payable on specified due dates, in the case of common stock, (i) dividends are payable only when and if declared by our board of directors or a duly authorized committee of the board and (ii) as a corporation, we are restricted under applicable Delaware law to making dividend payments and redemption payments only from legally available assets. Further, under our certificate of incorporation, there are no restrictions on our business or operations or on our ability to incur indebtedness or engage in any transactions arising as to our common stock, subject only to the voting rights available to stockholders generally.

In addition, our rights to participate in the assets of any of our subsidiaries upon any liquidation or reorganization of any subsidiary will be subject to the prior claims of that subsidiary's creditors (except to the extent we may ourselves be a creditor of that subsidiary), including that subsidiary's trade creditors and our creditors who have obtained or may obtain guarantees from the subsidiaries. As a result, our common stock will be subordinated to our and our subsidiaries' obligations and liabilities, which currently include borrowings and guarantees. See Item 7. "Management Discussion and Analysis of Financial Condition and Results of Operations" - "Senior Secured Credit Facilities," "5.375% Senior Notes due 2022" and "3.625% Senior Notes due 2026."

Our ability to pay any dividends on our common stock may be limited and, consequently, your ability to achieve a return on your investment will depend on appreciation in the price of our common stock.

We have not paid any dividends on our common stock since January 3, 1989 and we have no current plans to do so. Our current financing arrangements permit us to pay cash dividends on our common stock within limitations defined by the terms of our existing indebtedness, including our senior secured credit facility, 5.375% senior notes due 2022 and 3.625% senior notes due 2026 and any other indentures or other financing arrangements that we enter into in the future. For example, our senior secured credit facility restricts our ability to make payments of dividends in cash if certain coverage ratios are not met. Even if such coverage ratios are met in the future, any determination to pay cash dividends on our common stock will be at the discretion of our board of directors and will be based upon our financial condition, operating results, capital requirements, plans for expansion, business opportunities, restrictions imposed by any of our financing arrangements, provisions of applicable law and any other factors that our board of directors determines are relevant at that point in time.

The issuance of shares of preferred stock could adversely affect holders of common stock, which may negatively impact your investment.

Our board of directors is authorized to cause us to issue classes or series of preferred stock without any action on the part of our stockholders. The board of directors also has the power, without stockholder approval, to set the terms of any such classes or series of preferred shares that may be issued, including the designations, preferences, limitations and relative rights senior to the rights of our common stock with respect to dividends or upon the liquidation, dissolution or winding up of our business and other terms. If we issue preferred shares in the future that have a preference over the common stock with respect to the payment of dividends or upon liquidation, dissolution or winding up, or if we issue preferred shares with voting rights that dilute the voting power of the common stock, the rights of holders of the common stock or the market price of the common stock could be adversely affected. As of the date of this report, we have no outstanding shares of preferred stock but we have available for issuance 1,000,000 authorized but unissued shares of preferred stock.

ITEM 1B. UNRESOLVED STAFF COMMENTS

None.

ITEM 2. PROPERTIES

As of December 29, 2018, the Company's corporate headquarters is located at 251 O’Connor Ridge Boulevard, Suite 300, Irving, Texas, 75038.

As of December 29, 2018, the Company operates a global network of over 200 locations, including 144 production facilities, across five continents. All of the processing facilities are owned except for 12 leased facilities and the Company owns and leases a network of transfer stations. The following is a listing of a majority of the Company's operating plants as of December 29, 2018 by operating segment with a description of the plants principal process.

| LOCATION | DESCRIPTION |
|---|---|
| Feed Ingredients Segment | |
| Albertville, Alabama, United States | Bakery Residuals |
| Bastrop, Texas, United States | Animal By-Products |
| Bellevue, Nebraska, United States | Animal By-Products |
| Berlin, Wisconsin, United States | Animal By-Products |
| Blue Earth, Minnesota, United States | Animal By-Products |
| Blue Island, Illinois, United States | Used Cooking Oil/Trap Processing |
| Boise, Idaho, United States | Animal By-Products |
| Bryan, Texas, United States | Bakery Residuals |
| Burgum, Netherlands | Animal By-Products |
| Butler, Kentucky, United States | Animal By-Products |
| Butler, Kentucky, United States | Bakery Residuals |
| Clinton, Iowa, United States | Animal By-Products |
| Coldwater, Michigan, United States | Animal By-Products |
| Collinsville, Oklahoma, United States | Animal By-Products |
| Dallas, Texas, United States | Animal By-Products |
| Denver, Colorado, United States | Animal By-Products |
| Des Moines, Iowa, United States | Animal By-Products |

| | |
|---|---|
| Doswell, Virginia, United States | Bakery Residuals |
| Dundas, Ontario, Canada | Animal By-Products |
| East Dublin, Georgia, United States | Animal By-Products |
| E. St. Louis, Illinois, United States | Animal By-Products |
| Ellenwood, Georgia, United States | Animal By-Products |
| Fresno, California, United States | Animal By-Products |
| Hamilton, Michigan, United States | Animal By-Products |
| Henderson, Kentucky, United States | Fertilizer |
| Henderson, Kentucky, United States | Bakery Residuals |
| Hickson, Ontario, Canada | Animal By-Products |
| Honey Brook, Pennsylvania, United States | Bakery Residuals |

| | |
|---|---|
| Houston, Texas, United States | Animal By-Products |
| Jackson, Mississippi, United States | Animal By-Products |
| Kansas City, Kansas, United States | Animal By-Products |
| Kansas City, Kansas, United States | Protein Refining |
| Kansas City, Missouri, United States | Hides |
| Lexington, Nebraska, United States | Animal By-Products |
| Lingen, Germany | Blood |
| Loenen, Netherlands | Animal By-Products |
| Los Angeles, California, United States | Animal By-Products |
| Luohe, China | Blood |
| Maquoketa, Iowa, United States | Blood |
| Marshville, North Carolina, United States | Bakery Residuals |
| Maryborough, Australia | Blood |
| Mason City, Illinois, United States | Animal By-Products |
| Mering, Germany | Blood |
| Moorefield, Ontario, Canada | Animal By-Products |
| Muscatine, Iowa, United States | Bakery Residuals |
| Newark, New Jersey, United States | Animal By-Products |
| Newberry, Indiana, United States | Animal By-Products |
| North Baltimore, Ohio, United States | Bakery Residuals |
| Omaha, Nebraska, United States | Protein Refining |
| Omaha, Nebraska, United States | Animal By-Products |
| Osetnica, Poland | Animal By-Products |
| Paducah, Kentucky, United States | Wet Pet Food |
| Pocahontas, Arkansas, United States | Animal By-Products |
| Ravenna, Nebraska, United States | Wet Pet Food |
| Russellville, Kentucky, United State | Animal By-Products |
| San Francisco, California, United States | Animal By-Products |
| Sioux City, Iowa, United States | Animal By-Products |
| Smyrna, Georgia, United States | Trap Processing |
| Springdale, Arkansas, United States | Wet Pet Food |
| Son, Netherlands | Animal By-Products |
| Starke, Florida, United States | Animal By-Products |
| Suzhou, China | Blood |
| Tacoma, Washington, United States | Animal By-Products |
| Tama, Iowa, United States | Animal By-Products |
| Tampa, Florida, United States | Animal By-Products |
| Truro, Novia Scotia, Canada | Used Cooking Oil |
| Turlock, California, United States | Animal By-Products |
| Turlock, California, United States | Fertilizer |
| Union City, Tennessee, United States | Animal By-Products |
| Usnice, Poland | Animal By-Products |
| Wahoo, Nebraska, United States | Animal By-Products |
| Watts, Oklahoma, United States | Bakery Residuals/Protein Refining |
| Wichita, Kansas, United States | Animal By-Products |
| Winesburg, Ohio, United States | Animal By-Products |
| Winnipeg, Manitoba, Canada | Animal By-Products |
| | |
| Food Ingredients Segment | |
| Almere, Netherlands | Casings |

| | |
|---|---|
| Amparo, Brazil | Collagen |
| Angouleme, France | Collagen |
| Da'an, China | Collagen |
| Dubuque, Iowa, United States | Collagen |
| Eindhoven, Netherlands | Fat |
| Elsholz, Germany | Fat |
| Erolzheim, Germany | Fat |
| Gent, Belgium | Collagen |
| Girona, Spain | Collagen |
| Harlingen, Netherlands | Fat |
| Ilse-Sur-La-Sorgue, France | Collagen |
| Kaiping, China | Collagen |
| Lubien, Poland | Fat |

| | |
|---|---|
| Peabody, Massachusetts, United States | Collagen |
| Porto, Portugal | Casings |
| Presidente Epitacio, Brazil | Collagen |
| Stoke-on Trent, United Kingdom | Bone |
| Versmold, Germany | Fat |
| Vuren, Netherlands | Bone |
| Wenzhou, China | Collagen |
| | |
| Fuel Ingredients Segment | |
| Belm-Icker, Germany | Bioenergy |
| Butler, Kentucky, United States | Biodiesel |
| Denderleeuw, Belgium | Bioenergy |
| Jagel, Germany | Bioenergy |
| Rotenburg, Germany | Bioenergy |
| Saint-Catherine, Quebec Canada | Biodiesel |
| Son, Netherlands | Bioenergy |

Rent expense for our leased properties was $8.8 million in the aggregate in fiscal 2018.

ITEM 3. LEGAL PROCEEDINGS

The Company is a party to various lawsuits, claims and loss contingencies arising in the ordinary course of its business, including insured worker's compensation, auto, and general liability claims, assertions by certain regulatory and governmental agencies related to permitting requirements and/or air, wastewater and storm water discharges from the Company's processing facilities, litigation involving tort, contract, statutory, labor, employment, and other claims, and tax matters.

The Company’s workers compensation, auto and general liability policies contain significant deductibles or self-insured retentions. The Company estimates and accrues its expected ultimate claim costs related to accidents occurring during each fiscal year under these insurance policies and carries this accrual as a reserve until these claims are paid by the Company.

As a result of the matters discussed above, the Company has established loss reserves for insurance, environmental, litigation and tax contingencies. At December 29, 2018 and December 30, 2017, the reserves for insurance, environmental, litigation and tax contingencies reflected on the balance sheet in accrued expenses and other non-current liabilities were approximately $66.6 million and $61.4 million, respectively. The Company has insurance recovery receivables of approximately $26.1 million and $25.0 million as of December 29, 2018 and December 30, 2017, related to insurance contingencies. The Company’s management believes these reserves for contingencies are reasonable and sufficient based upon present governmental regulations and information currently available to management; however, there can be no assurance that final costs related to these contingencies will not exceed current estimates. The Company believes that the likelihood is remote that any additional liability from the lawsuits and claims that may not be covered by insurance would have a material effect on the Company's financial position, results of operations or cash flows.

Lower Passaic River Area. In December 2009, the Company, along with numerous other entities, received notice from the United States Environmental Protection Agency (“EPA”) that the Company (as alleged successor-in-interest to The Standard Tallow Corporation) is considered a potentially responsible party (a “PRP”) with respect to alleged contamination in the lower 17-mile area of the Passaic River which is part of the Diamond Alkali Superfund Site located in Newark, New Jersey. The Company’s designation as a PRP is based upon the operation of a former plant sites located in Newark and Kearny, New Jersey by The Standard Tallow Corporation, an entity that the Company acquired in 1996. In the letter, EPA requested that the Company join a group of other parties in funding a remedial investigation and feasibility study at the site. As of the date of this report, the Company has not agreed to participate in the funding group. In March 2016, the Company received another letter from EPA notifying the Company that it had issued a Record of Decision (the "ROD") selecting a remedy for the lower 8.3 miles of the lower Passaic River area at an estimated cost of $1.38 billion. The EPA letter makes no demand on the Company and lays out a framework for remedial design/remedial action implementation in which the EPA will first seek funding from major PRPs. The letter indicates that the EPA has sent the letter to over 100 parties, which include large chemical and refining companies, manufacturing companies, foundries, plastic companies, pharmaceutical companies and food and consumer product companies. The EPA has already offered early cash out settlements to 20 of the other PRPs and has stated that other parties who did not discharge any of the eight contaminants of concern identified in the ROD (the "COCs") may also be eligible for cash out settlements and has begun a settlement analysis using a third-party allocator. The Company is participating in this allocation process as it asserts that it is not responsible for any liabilities of its former subsidiary The Standard Tallow Corporation, which was legally dissolved in 2000, and that, in any event, The Standard Tallow Corporation did not discharge any of the COCs. On September

30, 2016, Occidental Chemical Corporation (“OCC”) entered into an agreement with the EPA to perform the remedial design for the cleanup plan for the lower 8.3 miles of the Passaic River. On June 30, 2018, OCC filed a complaint in the United States District Court for the District of New Jersey against over 100 companies, including the Company, seeking cost recovery or contribution for costs under the Comprehensive Environmental Response, Compensation and Liability Act (“CERCLA”) relating to various investigations and cleanups OCC has conducted or is conducting in connection with the Passaic River. According to the complaint, OCC has incurred or is incurring costs which include the estimated cost to complete the remedial design for the cleanup plan for the lower 8.3 miles of the Passaic River. OCC is also seeking a declaratory judgment to hold the defendants liable for their proper shares of future response costs, including the remedial action for the lower 8.3 miles of the Passaic River. The Company, along with 40 of the other defendants, had previously received a release from OCC of its CERCLA contribution claim of $165 million associated with the costs to design the remedy for the lower 8.3 miles of the Passaic River. The Company's ultimate liability, if any, for investigatory costs, remedial costs and/or natural resource damages in connection with the lower Passaic River area cannot be determined at this time; however, as of the date of this report, the Company has found no definitive evidence that the former Standard Tallow Corporation plant sites contributed any of the COCs to the Passaic River and, therefore, there is nothing that leads the Company to believe that this matter will have a material effect on the Company's financial position, results of operations or cash flows.

Fresno Facility Permit Issue. The Company has been named as a defendant and a real party in interest in a lawsuit filed on April 9, 2012 in the Superior Court of the State of California, Fresno County, styled Concerned Citizens of West Fresno vs. Darling International Inc. The complaint, as subsequently amended, alleges that the Company's Fresno facility is operating without a proper use permit and seeks, among other things, injunctive relief. The complaint had at one time also alleged that the Company's Fresno facility constitutes a continuing private and public nuisance, but the plaintiff has since amended the complaint to drop these allegations. The City of Fresno was also named as a defendant in the original complaint but has since had a judgment entered in its favor and is no longer a defendant in the lawsuit; however, in December 2013 the City of Fresno filed a motion to intervene as a plaintiff in this matter. The Superior Court heard the motion on February 4, 2014, and entered an order on February 18, 2014 denying the motion. Rendering operations have been conducted on the site since 1955, and the Company believes that it possesses all of the required federal, state and local permits to continue to operate the facility in the manner currently conducted and that its operations do not constitute a private or public nuisance. Accordingly, the Company intends to defend itself vigorously in this matter. Discovery has begun and this matter was scheduled for trial in July 2014; however, the parties have agreed to stay the litigation while they participate in a mediation process, which remains ongoing. In January 2017, the Company entered into a non-binding letter of intent with the City of Fresno pursuant to which the City and the Company will work toward the execution of a definitive agreement to relocate the facility to a different location in Fresno. Whether an agreement to relocate the facility ultimately gets executed is subject to the Company’s receipt of certain incentives and an agreement by the Concerned Citizens of West Fresno to settle and dismiss the aforementioned litigation. While management cannot predict the ultimate outcome of this matter, management does not believe the outcome will have a material effect on the Company's financial condition, results of operations or cash flows.

The Company is engaged in other legal proceedings from time to time. The proceedings described above and such other proceedings can be complex and take many months, or even years, to reach resolution, with the final outcome being dependent upon a number of variables, some of which are not within the control of the Company. Therefore, although the Company will vigorously defend itself in each of the described actions, the ultimate resolution and potential financial impact on the Company is uncertain.

ITEM 4. MINE SAFETY DISCLOSURES

Not applicable.

PART II

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

Market Information

The Company’s common stock is traded on the New York Stock Exchange (“NYSE”) under the symbol “DAR”.

Holders

The Company has been notified by its stock transfer agent that as of February 20, 2019, there were 136 holders of record of the common stock.

Dividend Policy

The Company has not paid any dividends on its common stock since January 3, 1989 and does not expect to pay cash dividends in 2019. The agreements underlying the Company's senior secured credit facilities and senior notes permit the Company to pay cash dividends on its common stock within limitations defined in such agreements. Any future determination to pay cash dividends on the Company’s common stock will be at the discretion of the Company’s board of directors and will be based upon the Company’s financial condition, operating results, capital requirements, plans for expansion, restrictions imposed by any existing or future financing arrangements, and any other factors that the board of directors determines are relevant.

Issuer Purchases of Equity Securities

In August 2015, the Company's Board of Directors approved a share repurchase program of up to an aggregate of $100.0 million of the Company's Common Stock depending on market conditions. The repurchases may be made from time to time on the open market at prevailing market prices or in negotiated transactions off the market. The program initially approved by the Board of Directors was for a 24-month period; however, the Board has subsequently extended the program for an additional 36 month period and increased the amount of the program to $200.0 million. Accordingly, repurchases may occur through August 13, 2020, unless further extended or shortened by the Board of Directors. Since the inception of the share repurchase program, the Company has repurchased approximately $10.9 million of its common stock in open market purchases and, as of the date of this report, has $200.0 million remaining in its share repurchase program.

Common Stock Performance Graph

Set forth below is a line graph comparing the change in the cumulative total stockholder return on the Company's common stock with the cumulative total return of the Russell 2000 Index, the Dow Jones US Waste and Disposal Service Index, and the Agri-Equities Index - Tier One for the period from December 28, 2013 to December 29, 2018, assuming the investment of $100 on December 28, 2013 and the reinvestment of dividends.

The stock price performance shown on the following graph only reflects the change in the Company's stock price relative to the noted indices and is not necessarily indicative of future price performance.

EQUITY COMPENSATION PLANS

The information required by this Item with respect to Item 201(d) of Regulation S-K appears in Item 12 of this report.

ITEM 6. SELECTED FINANCIAL DATA

SELECTED HISTORICAL CONSOLIDATED FINANCIAL DATA

The following table presents selected consolidated historical financial data for the periods indicated. The selected historical consolidated financial data set forth below should be read in conjunction with "Management's Discussion and Analysis of Financial Condition and Results of Operations" and the Consolidated Financial Statements of the Company for the three years ended December 29, 2018, December 30, 2017, and December 31, 2016, and the related notes thereto.

| | Fiscal 2018 Fifty-two Weeks Ended December 29, 2018 (g) | Fiscal 2017 Fifty-two Weeks Ended December 30, 2017 (h) | Fiscal 2016 Fifty-two Weeks Ended December 31, 2016 (h) | Fiscal 2015 Fifty-two Weeks Ended January 2, 2016 | Fiscal 2014 Fifty-three Weeks Ended January 3, 2015 (g) |
|---|---|---|---|---|---|
| | (dollars in thousands, except per share data) | | | | |
| Statement of Operations Data: | | | | | |
| Net sales | $3,387,726 | $3,662,251 | $3,391,928 | $3,391,255 | $3,956,443 |
| Cost of sales and operating expenses (a), (h) | 2,647,083 | 2,875,443 | 2,635,333 | 2,654,025 | 3,123,171 |
| Selling, general and administrative expenses (c), (h) | 309,264 | 343,502 | 311,552 | 316,383 | 374,580 |
| Restructuring and impairment charges | 14,965 | — | — | — | — |
| Depreciation and amortization | 321,192 | 302,100 | 289,908 | 269,904 | 269,517 |
| Acquisition and integration costs | — | — | 401 | 8,299 | 24,667 |
| Operating income | 95,222 | 141,206 | 154,734 | 142,644 | 164,508 |
| Interest expense (b) | 86,429 | 88,926 | 94,187 | 105,530 | 135,416 |
| Debt extinguishment costs | 23,509 | — | — | — | — |
| Foreign currency (gain)/loss (d) | 6,431 | 6,898 | 1,854 | 4,911 | 13,548 |
| Loss on disposal of subsidiaries | 12,545 | 885 | — | — | — |
| Other (income)/expense, net, (c), (h) | 7,562 | 8,801 | 6,533 | 6,839 | (299) |
| Equity in net income of unconsolidated subsidiaries | (159,229) | (28,504) | (70,379) | (73,416) | (65,609) |
| Income from continuing operations before income taxes | 117,975 | 64,200 | 122,539 | 98,780 | 81,452 |
| Income tax (benefit)/expense | 12,031 | (69,154) | 15,315 | 13,501 | 13,141 |
| Net Income | $105,944 | $133,354 | $107,224 | $85,279 | $68,311 |
| Net Income attributable to minority interests | (4,448) | (4,886) | (4,911) | (6,748) | (4,096) |
| Net Income attributable to Darling | $101,496 | $128,468 | $102,313 | $78,531 | $64,215 |
| Basic earnings per common share | $0.62 | $0.78 | $0.62 | $0.48 | $0.39 |
| Diluted earnings per common share | $0.60 | $0.77 | $0.62 | $0.48 | $0.39 |
| Weighted average shares outstanding | 164,789 | 164,752 | 164,600 | 165,031 | 164,627 |
| Diluted weighted average shares outstanding | 167,910 | 166,730 | 165,212 | 165,119 | 165,059 |
| Other Financial Data: | | | | | |
| Adjusted EBITDA (e) | $431,379 | $443,306 | $444,642 | $412,548 | $434,025 |
| Depreciation | 246,002 | 224,125 | 212,217 | 186,595 | 185,955 |
| Amortization | 75,190 | 77,975 | 77,691 | 83,309 | 83,562 |
| Capital expenditures (f) | 321,896 | 274,168 | 243,523 | 229,848 | 228,918 |
| Balance Sheet Data: | | | | | |
| Working capital (i) | $357,444 | $396,962 | $441,451 | $490,120 | $525,211 |
| Total assets (i) | 4,889,354 | 4,958,225 | 4,698,017 | 4,760,619 | 5,126,547 |
| Current portion of long-term debt (i) | 7,492 | 16,143 | 23,247 | 45,166 | 54,401 |

| | | | | | |
|---|---|---|---|---|---|
| Total long-term debt less current portion (i) | 1,666,940 | 1,698,050 | 1,727,696 | 1,885,851 | 2,098,039 |
| Stockholders' equity attributable to Darling | 2,273,048 | 2,244,933 | 1,972,994 | 1,870,709 | 1,952,990 |

(a) Included in fiscal 2014 are non-cash charges for the step-up of inventory acquired in the acquisition of Darling Ingredients International business of approximately $49.8 million.

(b) Included in interest expense for fiscal 2015 is the write-off of deferred loan costs of approximately $10.6 million. Included in interest expense for fiscal 2014 is a redemption premium and a write-off of deferred loan costs of approximately $27.3 million and $4.3 million, respectively.

(c) Included in selling, general and administrative expenses is a gain of approximately $3.1 million and included in other (income)/expense is a gain of approximately $2.5 million for a recorded insurance settlement in fiscal 2016. Included in other (income)/expense in fiscal

2015 is a write-off of property and other costs for fire and casualty losses of approximately $3.0 million for fire and casualty losses in Canada, the Netherlands and Brazil. In addition, fiscal 2015 includes approximately $1.8 million for a legal settlement.

(d) Included in fiscal 2014 recorded a loss of approximately $12.6 million respectively on foreign currency exchange forward hedge contracts for the purchase price for the Company's Darling Ingredients International business.

(e) Adjusted EBITDA is presented here not as an alternative to net income, but rather as a measure of the Company's operating performance and is not intended to be a presentation in accordance with U.S. generally accepted accounting principles ("GAAP"). Adjusted EBITDA is calculated below and represents, for any relevant period, net income/(loss) plus depreciation and amortization, goodwill and long-lived asset impairment, interest expense, (income)/loss from discontinued operations, net of tax, income tax provision, other income/(expense) and equity in net loss of unconsolidated subsidiaries. The Company believes adjusted EBITDA is a useful measure for investors because it is frequently used by securities analysts, investors and other interested parties in the evaluation of companies in the Company's industry. In addition, management believes that adjusted EBITDA is useful in evaluating the Company's operating performance compared to that of other companies in the food ingredients and agriculture industries because the calculation of adjusted EBITDA generally eliminates the effects of financing, income taxes and certain non-cash and other items that may vary for different companies for reasons unrelated to overall operating performance. As a result, the Company's management uses adjusted EBITDA as a measure to evaluate performance and for other discretionary purposes. However, adjusted EBITDA is not a recognized measurement under GAAP, should not be considered as an alternative to net income as a measure of operating results or to cash flow as a measure of liquidity, and is not intended to be a presentation in accordance with GAAP. Also, since adjusted EBITDA is not calculated identically by all companies, the presentation in this report may not be comparable to those disclosed by other companies. In addition to the foregoing, management also uses or will use adjusted EBITDA to measure compliance with certain financial covenants under the Company's senior secured credit facilities and senior unsecured notes that were outstanding at December 29, 2018. The amounts shown below for adjusted EBITDA differ from the amounts calculated under similarly titled definitions in the Company's Senior Secured Credit Facilities and Senior Unsecured Notes, as those definitions permit further adjustments to reflect certain other non-cash charges.

Reconciliation of Net Income to Adjusted EBITDA

| (dollars in thousands) | December 29, 2018 | December 30, 2017 | December 31, 2016 | January 2, 2016 | January 3, 2015 |
|---|---|---|---|---|---|
| Net income attributable to Darling | $101,496 | $128,468 | $102,313 | $78,531 | $64,215 |
| Depreciation and amortization | 321,192 | 302,100 | 289,908 | 269,904 | 269,517 |
| Interest expense | 86,429 | 88,926 | 94,187 | 105,530 | 135,416 |
| Income tax (benefit)/expense | 12,031 | (69,154) | 15,315 | 13,501 | 13,141 |
| Restructuring and impairment charges | 14,965 | — | — | — | — |
| Other, net | 13,993 | 15,699 | 8,387 | 11,750 | 13,249 |
| Debt extinguishment costs | 23,509 | — | — | — | — |
| Loss on disposal of subsidiaries | 12,545 | 885 | — | — | — |
| Equity in net income of unconsolidated subsidiaries | (159,229) | (28,504) | (70,379) | (73,416) | (65,609) |
| Net income attributable to noncontrolling interests | 4,448 | 4,886 | 4,911 | 6,748 | 4,096 |
| Adjusted EBITDA | $431,379 | $443,306 | $444,642 | $412,548 | $434,025 |

(f) Fiscal 2018 excludes the capital assets acquired in the Kruger Commodities, Inc., Triple - T Foods - Arkansas, Inc., and Sonac Lubien, Poland acquisitions of approximately $31.6 million. Fiscal 2017, fiscal 2016 and fiscal 2015 excludes the capital assets acquired in immaterial acquisitions. Fiscal 2014 excludes the capital assets acquired with the Darling Ingredients International business and the Custom Blenders acquisition of approximately $984.2 million.

(g)

Subsequent to the date of acquisition, fiscal 2018 includes 32 weeks of contribution from the acquisition of Kruger Commodities, Inc., 12 weeks from the acquisition of Triple-T Foods - Arkansas, Inc. and 8 weeks from the acquisition of Sonac Lubien. Fiscal 2014 includes 52 weeks of contribution from the acquisition of the Darling Ingredients International business and 14 weeks of contribution from the Custom Blenders acquisition.

(h) In fiscal 2017 and fiscal 2016, includes certain reclassifications from cost of sales of approximately $0.4 million and $0.2 million, respectively and from selling general and administrative costs of approximately $4.0 million and $2.5 million, respectively to other income/(expense), net to conform to fiscal 2018 presentation for pension expense.

(i) Fiscal 2015 includes certain reclassifications for deferred loan costs from long-term assets of approximately $29.0 million to current and non-current liabilities as reduction of outstanding debt to conform with fiscal 2016 presentation of debt. The presentation impact was to reduce total assets by approximately $29.0 million, increase working capital by approximately $2.1 million, reduce current portion of long-term debt by approximately $2.1 million and reduce long-term debt less current portion by approximately $26.9 million.

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

The following Management's Discussion and Analysis of Financial Condition and Results of Operations contains forward-looking statements that involve risks and uncertainties. The Company's actual results could differ materially from those anticipated in these forward-looking statements as a result of certain factors, including those set forth below under the heading "Forward Looking Statements" and in Item 1A of this report under the heading "Risk Factors."

Fiscal 2018 Overview

The Company is a global developer and producer of sustainable natural ingredients from edible and inedible bio-nutrients, creating a wide range of ingredients and customized specialty solutions for customers in the pharmaceutical, food, pet food, feed, industrial, fuel, bioenergy and fertilizer industries. With operations on five continents, the Company collects and transforms all aspects of animal by-product streams into useable and specialty ingredients, such as collagen, edible fats, feed-grade fats, animal proteins and meals, plasma, pet food ingredients, organic fertilizers, yellow grease, fuel feedstocks, green energy, natural casings and hides. The Company also recovers and converts recycled oils (used cooking oil and animal fats) into valuable feed and fuel ingredients, and collects and processes residual bakery products into feed ingredients. In addition, the Company provides environmental services, such as grease trap collection and disposal services to food service establishments. The Company sells its products domestically and internationally and operates within three industry segments: Feed Ingredients, Food Ingredients and Fuel Ingredients.

The Feed Ingredients operating segment includes the Company's global activities related to (i) the collection and processing of beef, poultry and pork animal by-products in North America and Europe into non-food grade oils and protein meals, (ii) the collection and processing of bakery residuals in North America into Cookie Meal®, which is predominantly used in poultry and swine rations, (iii) the collection and processing of used cooking oil in North America into non-food grade fats, (iv) the collection and processing of porcine and bovine blood in China, Europe, North America and Australia into blood plasma powder and hemoglobin, (v) the processing of selected portions of slaughtered animals into a variety of meat products for use in pet food, (vi) the processing of cattle hides and hog skins in North America, (vii) the production of organic fertilizers using protein produced from the Company's animal by-products processing activities in North America and Europe, and (viii) the provision of grease trap services to food service establishments. Non-food grade oils and fats produced and marketed by the Company are principally sold to third parties to be used as ingredients in animal feed and pet food, as an ingredient for the production of biodiesel and renewable diesel, or to the oleo-chemical industry to be used as an ingredient in a wide variety of industrial applications. Protein meals, blood plasma powder and hemoglobin produced and marketed by the Company are sold to third parties to be used as ingredients in animal feed, pet food and aquaculture.

The Food Ingredients operating segment includes the Company's global activities related to (i) the purchase and processing of beef and pork bone chips, beef hides, pig skins, and fish skins into collagen in Europe, China, South America and North America, (ii) the collection and processing of porcine and bovine intestines into natural casings in Europe, China and North America, (iii) the extraction and processing of porcine mucosa into crude heparin in Europe, (iv) the collection and refining of animal fat into food grade fat in Europe, and (v) the processing of bones to bone chips for the collagen industry and bone ash. Collagens and collagens produced and marketed by the Company are sold to third parties to be used as ingredients in the pharmaceutical, nutraceutical, food, and technical (e.g., photographic) industries. Natural casings produced and marketed by the Company are sold to third parties to be used as an ingredient in the production of sausages and other similar food products.

The Fuel Ingredients operating segment includes the Company's global activities related to (i) the Company's share of the results of its equity investment in Diamond Green Diesel Holdings LLC, a joint venture with Valero Energy Corporation ("Valero") to convert animal fats, recycled greases, used cooking oil, inedible corn oil, soybean oil, or other feedstocks that become economically and commercially viable into renewable diesel (the “DGD Joint Venture”) as described in Note 2 to the Company's Consolidated Financial Statements for the period ended December 29, 2018 included herein, (ii) the conversion of animal fats and recycled greases into biodiesel in North America, (iii) the conversion of organic sludge and food waste into biogas in Europe, (iv) the collection and conversion of fallen stock and certain animal by-products pursuant to applicable E.U. regulations into low-grade energy sources to be used in industrial applications, and (v) the processing of manure into natural bio-phosphate in Europe.

Corporate Activities principally includes unallocated corporate overhead expenses, acquisition-related expenses, interest expense net of interest income, and other non-operating income and expenses.

Operating Performance Indicators

The Company monitors the performance of its business segments using key financial metrics such as results of operations, non-GAAP measurements (Adjusted EBITDA), segment operating income, raw material processed, gross margin percentage, foreign currency translation, and corporate activities. The Company's operating results can vary significantly due to changes in factors such as the fluctuation in energy prices, weather conditions, crop harvests, government policies and programs, changes in global demand, changes in standards of living, protein consumption, and global production of competing ingredients. Due to these unpredictable factors that are beyond the control of the Company, forward-looking financial or operational estimates are not provided. The Company is exposed to certain risks associated with a business that is influenced by agricultural-based commodities. These risks are further described in Item 1A of this report under the heading "Risk Factors."

The Company's Feed Ingredients segment animal by-products, bakery residuals, used cooking oil recovery, and blood operations are each influenced by prices for agricultural-based alternative ingredients such as corn, soybean oil, soybean meal, and palm oil. In these operations, the costs of the Company's raw materials change with, or in certain cases are indexed to, the selling price or the anticipated selling price of the finished goods produced from the acquired raw materials and/or in some cases, the price spread between various types of finished products. The Company believes that this methodology of procuring raw materials generally establishes a relatively stable gross margin upon the acquisition of the raw material. Although the costs of raw materials for the Feed Ingredients segment are generally based upon actual or anticipated finished goods selling prices, rapid and material changes in finished goods prices, including competing agricultural-based alternative ingredients, generally have an immediate and often times, material impact on the Company's gross margin and profitability resulting from the brief lapse of time between the procurement of the raw materials and the sale of the finished goods. In addition, the amount of raw material volume acquired, which has a direct impact on the amount of finished goods produced, can also have a material effect on the gross margin reported, as the Company has a substantial amount of fixed operating costs.

The Company's Food Ingredients segment collagen and natural casings products are influenced by other competing ingredients including plant-based and synthetic hydrocolloids and artificial casings. In the collagen operation, in particular, the cost of the Company's animal-based raw material moves in relationship to the selling price of the finished goods. The processing time for the Food Ingredients segment collagen and casings is generally 30 to 60 days, which is substantially longer than the Company's Feed Ingredients segment animal by-products operations. Consequently, the Company's gross margin and profitability in this segment can be influenced by the movement of finished goods prices from the time the raw materials were procured until the finished goods are sold.

The Company's Fuel Ingredients segment converts fats into renewable diesel, organic sludge and food waste into biogas, and fallen stock into low-grade energy sources. The Company's gross margin and profitability in this segment are impacted by world energy prices for oil, electricity and natural gas.

The reporting currency for the Company's financial statements is the U.S. dollar. The Company operates in over 15 countries and therefore, certain of the Company's assets, liabilities, revenues and expenses are denominated in functional currencies other than the U.S. dollar, primarily in the euro, Brazilian real, Chinese renminbi, Canadian dollar, Japanese yen and Polish zloty. To prepare the Company's consolidated financial statements, assets, liabilities, revenues, and expenses must be translated into U.S. dollars at the applicable exchange rate. As a result, increases or decreases in the value of the U.S. dollar against these other currencies will affect the amount of these items recorded in the Company's consolidated financial statements, even if their value has not changed in the functional currency. This could have a significant impact on the Company's results, if such increase or decrease in the value of the U.S. dollar relative to these other currencies is substantial.

Results of Operations

Fiscal Year Ended December 29, 2018 Compared to Fiscal Year Ended December 30, 2017

Operating Performance Metrics

Other operating performance metrics indicators which management routinely monitors as an indicator of operating performance include:

- Finished product commodity prices
- Segment results
- Foreign currency
- Corporate activities
- Non-U.S. GAAP measures

These indicators and their importance are discussed below.

Finished Product Commodity Prices

Prices for finished product commodities that the Company produces in the Feed Ingredients segment are reported each business day on the Jacobsen Index (the “Jacobsen”), an established North American trading exchange price publisher. The Jacobsen reports industry sales from the prior day's activity by product. Included on the Jacobsen are reported prices for finished products such as MBM, PM and feather meal (“FM”), hides, BFT and YG and corn, which is a substitute commodity for the Company's BBP as well as a range of other branded and value-added products, which are products of the Company's Feed Ingredients segment. In the U.S. the Company regularly monitors the Jacobsen for MBM, PM, FM, BFT, YG and corn because it provides a daily indication of the Company's U.S. revenue performance against business plan benchmarks. In Europe, the Company regularly monitors Thomson Reuters (“Reuters”) to track the competing commodities palm oil and soy meal.

Although the Jacobsen and Reuters provide useful metrics of performance, the Company's finished products are commodities that compete with other commodities such as corn, soybean oil, palm oil complex, soybean meal and heating oil on nutritional and functional values. Therefore, actual pricing for the Company's finished products, as well as competing products, can be quite volatile. In addition, neither the Jacobsen nor Reuters provides forward or future period pricing for the Company's commodities. The Jacobsen and Reuters prices quoted below are for delivery of the finished product at a specified location. Although the Company's prices generally move in concert with reported Jacobsen and Reuters prices, the Company's actual sales prices for its finished products may vary significantly from the Jacobsen and Reuters because of production and delivery timing differences and because the Company's finished products are delivered to multiple locations in different geographic regions which utilize alternative price indexes. In addition, certain of the Company's premium branded finished products may sell at prices that may be higher than the closest product on the related Jacobsen or Reuters index. During fiscal 2018, the Company's actual sales prices by product trended with the disclosed Jacobsen and Reuters prices.

Average Jacobsen and Reuters prices (at the specified delivery point) for fiscal 2018, compared to average Jacobsen and Reuters prices for fiscal 2017 are:

| | Avg. Price Fiscal 2018 | Avg. Price Fiscal 2017 | Increase/(Decrease) | % Increase/(Decrease) |
|---|---|---|---|---|
| Jacobsen: | | | | |
| MBM (Illinois) | $ 266.75/ton | $ 259.54/ton | $ 7.21/ton | 2.8 % |
| Feed Grade PM (Mid-South) | $ 267.76/ton | $ 277.42/ton | $ (9.66)/ton | (3.5 )% |
| Pet Food PM (Mid-South) | $ 653.24/ton | $ 623.89/ton | $ 29.35/ton | 4.7 % |
| FM (Mid-South) | $ 452.31/ton | $ 395.84/ton | $ 56.47/ton | 14.3 % |
| BFT (Chicago) | $ 26.34/cwt | $ 31.93/cwt | $ (5.59)/cwt | (17.5 )% |
| YG (Illinois) | $ 20.60/cwt | $ 24.95/cwt | $ (4.35)/cwt | (17.4 )% |
| Corn (Illinois) | $ 3.66/bushel | $ 3.59/bushel | $ 0.07/bushel | 1.9 % |
| Reuters: | | | | |
| Palm Oil (CIF Rotterdam) | $ 597.00/ton | $ 711.00/ton | $ (114.00)/ton | (16.0 )% |
| Soy meal (CIF Rotterdam) | $ 405.00/ton | $ 351.00/ton | $ 54.00/ton | 15.4 % |

The following table shows the average Jacobsen and Reuters prices for the fourth quarter of fiscal 2018, compared to the average Jacobsen and Reuters prices for the third quarter of fiscal 2018.

| | Avg. Price 4th Quarter 2018 | Avg. Price 3rd Quarter 2018 | Increase/(Decrease) | % Increase/(Decrease) |
|---|---|---|---|---|
| Jacobsen: | | | | |
| MBM (Illinois) | $ 250.18/ton | $ 264.78/ton | $ (14.60)/ton | (5.5)% |
| Feed Grade PM (Mid-South) | $ 267.19/ton | $ 268.13/ton | $ (0.94)/ton | (0.4)% |
| Pet Food PM (Mid-South) | $ 540.68/ton | $ 556.48/ton | $ (15.80)/ton | (2.8)% |
| FM (Mid-South) | $ 405.90/ton | $ 453.58/ton | $ (47.68)/ton | (10.5)% |
| BFT (Chicago) | $ 25.80/cwt | $ 27.70/cwt | $ (1.90)/cwt | (6.9)% |
| YG (Illinois) | $ 19.91/cwt | $ 22.19/cwt | $ (2.28)/cwt | (10.3)% |
| Corn (Illinois) | $ 3.69/bushel | $ 3.53/bushel | $ 0.16/bushel | 4.5 % |
| Reuters: | | | | |
| Palm Oil (CIF Rotterdam) | $ 497.00/ton | $ 566.00/ton | $ (69.00)/ton | (12.2)% |
| Soy meal (CIF Rotterdam) | $ 368.00/ton | $ 391.00/ton | $ (23.00)/ton | (5.9)% |

Segment Results

Segment operating income for the fiscal year ended December 29, 2018 was $95.2 million, which reflects a decrease of $46.0 million or (32.6)% as compared to the fiscal year ended December 30, 2017.

| | Feed Ingredients | Food Ingredients | Fuel Ingredients | Corporate | Total |
|---|---|---|---|---|---|
| Fiscal Year Ended December 29, 2018 | | | | | |
| Net Sales | $1,952,555 | $1,139,126 | $296,045 | $ — | $3,387,726 |
| Cost of sales and operating expenses | 1,498,698 | 917,859 | 230,526 | — | 2,647,083 |
| Gross Margin | 453,857 | 221,267 | 65,519 | — | 740,643 |
| Gross Margin % | 23.2 % | 19.4 % | 22.1 % | — % | 21.9 % |
| Selling, general and administrative expense | 176,722 | 91,546 | (4,770 ) | 45,766 | 309,264 |
| Restructuring and impairment charges | — | 14,965 | — | — | 14,965 |
| Depreciation and amortization | 194,292 | 80,988 | 34,981 | 10,931 | 321,192 |
| Segment operating income/ (loss) | 82,843 | 33,768 | 35,308 | (56,697) | 95,222 |
| Equity in net income of unconsolidated subsidiaries | (550 ) | — | 159,779 | — | 159,229 |
| Segment income | 82,293 | 33,768 | 195,087 | (56,697) | 254,451 |

| | Feed Ingredients | Food Ingredients | Fuel Ingredients | Corporate | Total |
|---|---|---|---|---|---|
| Fiscal Year Ended December 30, 2017 | | | | | |
| Net Sales | $2,239,492 | $1,156,976 | $265,783 | $ — | $3,662,251 |
| Cost of sales and operating expenses | 1,744,631 | 920,383 | 210,429 | — | 2,875,443 |
| Gross Margin | 494,861 | 236,593 | 55,354 | — | 786,808 |
| Gross Margin % | 22.1 % | 20.4 % | 20.8 % | — % | 21.5 % |
| Selling, general and administrative expense | 178,347 | 104,644 | 10,355 | 50,156 | 343,502 |
| Depreciation and amortization | 184,172 | 75,010 | 31,019 | 11,899 | 302,100 |
| Segment operating income/(loss) | 132,342 | 56,939 | 13,980 | (62,055) | 141,206 |

| | | | | | |
|---|---|---|---|---|---|
| Equity in net income of unconsolidated subsidiaries | 265 | — | 28,239 | — | 28,504 |
| Segment income | 132,607 | 56,939 | 42,219 | (62,055) | 169,710 |

Feed Ingredients Segment

Raw material volume. In fiscal year 2018, the raw material processed by the Company's Feed Ingredients segment totaled 8.60 million metric tons. Compared to fiscal year 2017, overall raw material volume processed in the Feed Ingredients segment increased approximately 4.4%.

Sales. During the year ended December 29, 2018, net sales for the Feed Ingredients segment were $1,952.6 million as compared to $2,239.5 million for the year ended December 30, 2017, a decrease of approximately $286.9 million. Net sales for fats were approximately $564.7 million and $648.3 million for the years ended December 29, 2018 and December 30, 2017, respectively. Protein net sales were approximately $842.9 million and $816.1 million for the years ended December 29, 2018 and December 30, 2017, respectively. Other rendering net sales, which include hides, pet food, and service charges, were approximately $129.3 million and $286.2 million for the years ended December 29, 2018 and December 30, 2017, respectively. Total rendering net sales were approximately $1,536.9 million and $1,750.6 million for the years ended December 29, 2018 and December 30, 2017, respectively. Used cooking oil net sales were approximately $166.7 million and $185.5 million for the years ended December 29, 2018 and December 30, 2017, respectively. Bakery net sales were approximately $180.2 million and $209.8 million for the years ended December 29, 2018 and December 30, 2017, respectively, and other net sales, which includes trap services, and for 2017 industrial residual services, were approximately $68.8 million and $93.6 million for the years ended December 29, 2018 and December 30, 2017, respectively.

The decrease in net sales for the Feed Ingredients segment was primarily due to the following (in millions of dollars):

| | Fats | Proteins | Other Rendering | Total Rendering | Used Cooking Oil | Bakery | Other | Total |
|---|---|---|---|---|---|---|---|---|
| Net sales year ended December 30, 2017 | $648.3 | $816.1 | $ 286.2 | $ 1,750.6 | $ 185.5 | $209.8 | $93.6 | $2,239.5 |
| Increase/(decrease) in sales volumes | 34.7 | 55.9 | — | 90.6 | 5.6 | (13.6 ) | — | 82.6 |
| Increase/(decrease) in finished product prices | (85.9 ) | 16.2 | — | (69.7 ) | (13.5 ) | 5.0 | — | (78.2 ) |
| Increase/(decrease) due to currency exchange rates | 4.8 | 12.4 | 0.6 | 17.8 | — | — | — | 17.8 |
| Freight revenue (1) | (37.2 ) | (57.7 ) | (5.1 ) | (100.0 ) | (10.9 ) | (21.0 ) | — | (131.9 ) |
| Other change (2) | — | — | (152.4 ) | (152.4 ) | — | — | (24.8 ) | (177.2 ) |
| Total change | (83.6 ) | 26.8 | (156.9 ) | (213.7 ) | (18.8 ) | (29.6 ) | (24.8 ) | (286.9 ) |
| Net sales year ended December 29, 2018 | $564.7 | $842.9 | $ 129.3 | $ 1,536.9 | $ 166.7 | $180.2 | $68.8 | $1,952.6 |

(1) The decrease in freight revenue represents the impact from adoption of the new revenue standard on current year Feed Segment revenue as compared to the same period in fiscal 2017. See Note 22 to the Notes for impact on consolidated financial statements.

(2) The decrease in other rendering net sales was primarily due to the Company's sale of a portion of its interest in a majority owned consolidated subsidiary operating in cattle hides as part of its European operations, which resulted in the foreign subsidiary being deconsolidated and accounted for using the equity method of accounting, effective January 2018. In addition, the decrease in other net sales is due to the sale of the Company's industrial residuals business in May 2018.

Margins. In the Feed Ingredients segment for fiscal year 2018, the gross margin percentage was 23.2% as compared to 22.1% for fiscal 2017. The increase in fiscal 2018 was primarily due to the new revenue standard whereby the Company no longer includes billed freight in revenue, as it did in fiscal 2017.

Segment operating income. Feed Ingredients' operating income for fiscal year 2018 was $82.8 million, a decrease of $49.5 million as compared to fiscal year 2017. Segment operating income was down in fiscal year 2018 as compared to fiscal 2017 due to lower finished fat product prices and higher depreciation charges from increased capital expenditures that more than offset increased raw material volumes.

Food Ingredients Segment

Raw material volume. In fiscal year 2018, the raw material processed by the Company's Food Ingredients segment totaled 1.11 million metric tons. Compared to fiscal year 2017, overall raw material volume processed in the Food Ingredients segment decreased approximately (0.2)%.

Sales. Overall sales decreased in the Food Ingredients segment as a result of the permanent shut down of the Company's Hurlingham, Argentina collagen plant, a more competitive European collagen market and lower edible fat sales prices.

Margins. In the Food Ingredients segment for fiscal year 2018, the gross margin percentage was 19.4% as compared to 20.4% for fiscal 2017. This decrease was primarily due to lower margins from European collagen due to lower sales volumes and pressure on margins from export sales, combined with an increase in raw material prices for casings and a decrease in edible fat sales prices.

Segment operating income. Food Ingredients' operating income was $33.8 million for fiscal 2018, a decrease of $23.1 million or (40.6)% as compared to fiscal 2017. This decrease was primarily due to the restructuring and impairment charges incurred as a result of the Hurlingham, Argentina collagen plant shut down and lower earnings in the European collagen market. The casings business delivered slightly lower earnings in fiscal 2018 due to an increase of raw material prices as compared to fiscal 2017. The Company's edible fat prices were lower in fiscal 2018 as a result of competing fat markets as compared to fiscal 2017.

Fuel Ingredients Segment

Raw material volume. In fiscal year 2018, the raw material processed by the Company's Fuel Ingredients segment totaled 1.18 million metric tons. Compared to fiscal year 2017, overall raw material volume processed in the Fuel Ingredients segment decreased approximately (0.6)%.

Sales. Overall sales increased in the Fuel Ingredients segment primarily due to higher sales volumes at Ecoson and in North America due to the reinstated fiscal 2017 blenders tax credits recorded in the first quarter of fiscal 2018 of approximately $12.6 million as compared to no blenders tax credits in the same period in fiscal 2017.

Margins. In the Fuel Ingredients segment (exclusive of the equity contribution from the DGD Joint Venture) for fiscal year 2018, the gross margin percentage was 22.1% as compared to 20.8% for fiscal 2017. This increase was primarily due to the reinstated fiscal 2017 blenders tax credits in North America recorded in the first quarter of fiscal 2018.

Segment operating income. Exclusive of the DGD Joint Venture, the Company's Fuel Ingredients segment income for fiscal year 2018 was $35.3 million, an increase of $21.3 million or 152.1% as compared to fiscal 2017. The increase in earnings was primarily due to the reinstated fiscal 2017 blenders tax credits in North America of approximately $12.6 million recorded in the first quarter of fiscal 2018 as compared to the lack of blenders tax credits in the same period of fiscal 2017 and higher overall sales prices and strong demand from biodiesel industries.

Including the DGD Joint Venture, the Fuel Ingredients segment income for fiscal 2018 was $195.1 million, as compared to segment income of $42.2 million in fiscal 2017. This increase of $152.9 million was primarily related to reinstated fiscal 2017 blenders tax credits recorded in the first quarter of fiscal 2018 and increased production in the fourth quarter of 2018 as compared to the lack of blenders tax credits in the same period of fiscal 2017.

Foreign Currency

During fiscal 2018, the U.S. dollar weakened against most of the other functional currencies used by the Company's non-domestic operations when compared to fiscal 2017. Using actual results for fiscal year 2018 and the prior year's average foreign currency rates for fiscal 2017 would result in a decrease in operating income of approximately $8.6 million. The average rates assumption used in this calculation was the actual fiscal average rate for fiscal year 2018 of €1.00:USD$1.18 and CAD$1.00:USD$0.77 as compared to the average rate for fiscal year 2017 of €1.00:USD$1.13 and CAD$1.00:USD$0.77, respectively.

Corporate Activities

Selling, General and Administrative Expenses. Selling, general and administrative expenses were $45.8 million during fiscal year 2018, a $4.4 million decrease from $50.2 million during fiscal year 2017. The decrease was primarily due to a decrease in corporate related compensation benefits and other corporate expenses.

Depreciation and Amortization. Depreciation and amortization charges decreased $1.0 million to $10.9 million during fiscal year 2018 as compared to $11.9 million during fiscal year 2017. The decrease was due to certain of the Company's corporate assets becoming fully depreciated as compared to fiscal 2017.

Interest Expense. Interest expense was $86.4 million for fiscal year 2018, compared to $88.9 million for fiscal year 2017, a decrease of $2.5 million. The decrease was primarily due to an interest rate decrease on the Company's euro based senior notes, a reduction in deferred loan cost amortization and a reduction in other debt interest that more than offset an increase in revolver interest from higher fiscal 2018 revolver borrowings as compared to fiscal year 2017.

Debt Extinguishment costs. Debt extinguishment costs were $23.5 million during fiscal year 2018, compared to none for fiscal 2017. The costs in 2018 were due to tender and redemption premiums and the write-off of deferred loan costs related to the retirement of the 4.75% Senior Notes.

Foreign Currency Losses. Foreign currency losses were $6.4 million during fiscal year 2018, as compared to a loss of approximately $6.9 million for fiscal year 2017. The decrease in foreign currency losses was primarily due to reduction in losses on non-designated foreign exchange hedge contracts as compared to fiscal 2017.

Loss on Disposal of Subsidiaries. Loss on disposal of subsidiaries represents a loss recorded from the sale of the Company's industrial residuals business during fiscal 2018, that more than offset a gain recorded on the liquidation of a majority owned foreign joint venture in fiscal 2018, as compared to a loss booked in the fourth quarter of 2017 related to the sale of a portion of a majority owned foreign subsidiary.

Other Income/Expense. Other expense was $7.6 million for fiscal year 2018, compared to $8.8 million in fiscal year 2017. The decrease in other expense for fiscal year 2018 as compared to fiscal year 2017 was primarily due to a decrease in non-service cost component of pension expense that more than offset an increase in casualty losses in fiscal 2018 and a reduction of interest income.

Equity in Net Income in Investment of Unconsolidated Subsidiaries. Equity in net income in investment of unconsolidated subsidiaries primarily represents the Company's portion of the income of the DGD Joint Venture for fiscal year 2018. In fiscal year 2018, equity in net income was $159.2 million compared to $28.5 million in fiscal year 2017. The $130.7 million increase was primarily due to the reinstated fiscal 2017 blenders tax credits that were recorded in the first quarter of fiscal 2018 by the DGD Joint Venture as compared to no blenders tax credits recorded at the DGD Joint Venture in fiscal 2017.

Income Taxes. The Company recorded income tax expense of $12.0 million for fiscal year 2018, compared to $69.2 million of income tax benefit recorded in fiscal year 2017, an increase of $81.2 million, which was primarily due to tax law changes enacted in December 2017 with respect to several of the Company's major tax jurisdictions. Specifically, in fiscal 2017 a tax benefit of $75.0 million was recorded due to the Tax Cuts and Jobs Act (the “Tax Act” or “U.S. tax reform”) in the United States, which was enacted on December 22, 2017 and a tax benefit of $13.9 million was recorded for tax law changes in Belgium and France (“European tax law changes”). The effective tax rate for fiscal year 2018 and fiscal year 2017 was 10.2% and (107.7)%, respectively. The effective tax rate for fiscal year 2018 differs from the statutory rate of 21% due primarily to the retroactive reinstatement of the biofuel tax incentive for 2017 during 2018, tax law changes in the Netherlands, and changes in valuation allowances primarily related to deferred tax assets for tax losses that are not expected to be utilized in future years. The biofuel tax incentive expired as of the end of fiscal 2017. Excluding the impact of the 2017 biofuel tax incentive and tax law changes, the effective tax rate for fiscal year 2018 is 34.4%. The effective tax rate for fiscal year 2017 differs from the statutory rate of 35% due primarily to the impact of U.S. tax reform, European tax law changes, the relative mix of earnings among jurisdictions with different tax rates, and subpart F income. Excluding the impact of U.S. tax reform and European tax law changes, the effective tax rate for fiscal 2017 is 30.8%.

Non-U.S. GAAP Measures

Adjusted EBITDA is not a recognized accounting measurement under GAAP; it should not be considered as an alternative to net income, as a measure of operating results, or as an alternative to cash flow as a measure of liquidity. It is presented here not as an alternative to net income, but rather as a measure of the Company's operating performance. Since EBITDA (generally, net income plus interest expenses, taxes, depreciation and amortization) is not calculated identically by all companies, the presentation in this report may not be comparable to EBITDA or adjusted EBITDA presentations disclosed by other companies. Adjusted EBITDA is calculated below and represents, for any relevant period, net income/(loss) plus depreciation and amortization, goodwill and long-lived asset impairment, interest expense, (income)/loss from discontinued operations, net of tax, income tax provision, other income/(expense) and equity in net (income)/loss of unconsolidated subsidiary. Management believes that Adjusted EBITDA is useful in evaluating the Company's operating performance compared to that of other companies in its industry because the calculation of Adjusted EBITDA generally eliminates the effects of financing, income taxes and certain non-cash and other items that may vary for different companies for reasons unrelated to overall operating performance.

As a result, the Company’s management uses Adjusted EBITDA as a measure to evaluate performance and for other discretionary purposes. In addition to the foregoing, management also uses or will use Adjusted EBITDA to measure compliance with certain financial covenants under the Company's Senior Secured Credit Facilities, 5.375% Notes and 3.625% Notes that were outstanding at December 29, 2018. However, the amounts shown below for Adjusted EBITDA differ from the amounts calculated under similarly titled definitions in the Company’s Senior Secured Credit Facilities, 5.375% Notes and 3.625% Notes, as those definitions permit further adjustments to reflect certain other non-recurring costs, non-cash charges and cash dividends from the DGD Joint Venture. Additionally, the Company evaluates the impact of foreign currency exchange on operating cash flow, which is defined as segment operating income (loss) plus depreciation and amortization.

Reconciliation of Net Income to (Non-GAAP) Adjusted EBITDA and (Non-GAAP) Pro Forma Adjusted EBITDA
Fiscal Year 2018 As Compared to Fiscal 2017

| | Fiscal Year Ended | |
|---|---|---|
| (dollars in thousands) | December 29, 2018 | December 30, 2017 |
| Net income attributable to Darling | $101,496 | $128,468 |
| Depreciation and amortization | 321,192 | 302,100 |
| Interest expense | 86,429 | 88,926 |
| Income tax expense/(benefit) | 12,031 | (69,154 ) |
| Restructuring and impairment charges | 14,965 | — |
| Foreign currency loss/(gain) | 6,431 | 6,898 |
| Other expense/(income), net | 7,562 | 8,801 |
| Debt extinguishment costs | 23,509 | — |
| Loss on disposal of subsidiaries | 12,545 | 885 |
| Equity in net income of unconsolidated subsidiaries | (159,229 ) | (28,504 ) |
| Net (loss)/income attributable to noncontrolling interests | 4,448 | 4,886 |
| Adjusted EBITDA (Non-GAAP) | $431,379 | $443,306 |
| | | |
| Foreign currency exchange impact (1) | (8,565 ) | — |
| Pro forma Adjusted EBITDA to Foreign Currency (Non-GAAP) | $422,814 | $443,306 |
| | | |
| DGD Joint Venture Adjusted EBITDA (Darling's Share) | $174,013 | $43,198 |

(1) The average rate assumption used in this calculation was the actual fiscal average rate for the fiscal year ended December 29, 2018 of €1.00:USD$1.18 and CAD$1.00:USD$0.77 as compared to the average rate for the fiscal year ended December 30, 2017 of €1.00:USD$1.13 and CAD$1.00:USD$0.77, respectively.

For the fiscal year ended December 29, 2018, the Company generated Adjusted EBITDA (Non-GAAP) of $431.4 million, as compared to $443.3 million for the year ended December 30, 2017. The decrease is attributable to lower earnings in the Feed Ingredients and Food Ingredients segment.

On a Pro forma Adjusted EBITDA to Foreign Currency (Non-GAAP) basis, the Company would have generated $422.8 million for the fiscal year ended December 29, 2018, as compared to $443.3 million for the year ended December 30, 2017.

DGD Joint Venture Adjusted EBITDA (Darling's Share) is not reflected in the Adjusted EBITDA, the Pro forma Adjusted EBITDA, or the Pro forma Adjusted EBITDA to Foreign Currency (Non-GAAP). See Note 2 to Notes to Consolidated Financial Statements included herein for financial information regarding the DGD Joint Venture.

Results of Operations

Fiscal Year Ended December 30, 2017 Compared to Fiscal Year Ended December 31, 2016

Operating Performance Metrics

Operating performance metrics indicators which management routinely monitors as an indicator of operating performance include:

- Finished product commodity prices
- Segment results
- Foreign currency
- Corporate activities
- Non-U.S. GAAP measures

These indicators and their importance are discussed below.

Finished Product Commodity Prices

Average Jacobsen and Reuters prices (at the specified delivery point) for fiscal 2017, compared to average Jacobsen and Reuters prices for fiscal 2016 are:

| | Avg. Price Fiscal 2017 | Avg. Price Fiscal 2016 | Increase/(Decrease) | % Increase/(Decrease) |
|---|---|---|---|---|
| Jacobsen: | | | | |
| MBM (Illinois) | $ 259.54/ton | $ 274.51/ton | $ (14.97)/ton | (5.5 )% |
| Feed Grade PM (Mid-South) | $ 277.42/ton | $ 300.12/ton | $ (22.70)/ton | (7.6 )% |
| Pet Food PM (Mid-South) | $ 623.89/ton | $ 557.17/ton | $ 66.72/ton | 12.0 % |
| FM (Mid-South) | $ 395.84/ton | $ 356.40/ton | $ 39.44/ton | 11.1 % |
| BFT (Chicago) | $ 31.93/cwt | $ 29.75/cwt | $ 2.18/cwt | 7.3 % |
| YG (Illinois) | $ 24.95/cwt | $ 23.77/cwt | $ 1.18/cwt | 5.0 % |
| Corn (Illinois) | $ 3.59/bushel | $ 3.70/bushel | $ (0.11)/bushel | (3.0 )% |
| Reuters: | | | | |
| Palm Oil (CIF Rotterdam) | $ 711.00/ton | $ 698.00/ton | $ 13.00/ton | 1.9 % |
| Soy meal (CIF Rotterdam) | $ 351.00/ton | $ 375.00/ton | $ (24.00)/ton | (6.4 )% |

The following table shows the average Jacobsen and Reuters prices for the fourth quarter of fiscal 2017, compared to the average Jacobsen and Reuters prices for the third quarter of fiscal 2017.

| | Avg. Price 4th Quarter 2017 | Avg. Price 3rd Quarter 2017 | Increase/(Decrease) | % Increase/(Decrease) |
|---|---|---|---|---|
| Jacobsen: | | | | |
| MBM (Illinois) | $ 222.73/ton | $ 292.83/ton | $ (70.10)/ton | (23.9 )% |
| Feed Grade PM (Mid-South) | $ 252.22/ton | $ 285.14/ton | $ (32.92)/ton | (11.5 )% |
| Pet Food PM (Mid-South) | $ 593.74/ton | $ 577.02/ton | $ 16.72/ton | 2.9 % |
| FM (Mid-South) | $ 361.46/ton | $ 408.82/ton | $ (47.36)/ton | (11.6 )% |
| BFT (Chicago) | $ 27.40/cwt | $ 35.36/cwt | $ (7.96)/cwt | (22.5 )% |
| YG (Illinois) | $ 23.18/cwt | $ 27.20/cwt | $ (4.02)/cwt | (14.8 )% |
| Corn (Illinois) | $ 3.38/bushel | $ 3.56/bushel | $ (0.18)/bushel | (5.1 )% |
| Reuters: | | | | |
| Palm Oil (CIF Rotterdam) | $ 702.00/ton | $ 687.00/ton | $ 15.00/ton | 2.2 % |

| | | | | | |
|---|---|---|---|---|---|
| Soy meal (CIF Rotterdam) | $ 356.00/ton | $ 337.00/ton | $ 19.00/ton | 5.6 | % |

Segment Results

Segment operating income for the fiscal year ended December 30, 2017 was $141.2 million, which reflects a decrease of $13.5 million or (8.7)% as compared to the fiscal year ended December 31, 2016.

| (in thousands, except percentages) | Feed Ingredients | Food Ingredients | Fuel Ingredients | Corporate | Total |
|---|---|---|---|---|---|
| Fiscal Year Ended December 30, 2017 | | | | | |
| Net Sales | $2,239,492 | $1,156,976 | $265,783 | $ — | $3,662,251 |
| Cost of sales and operating expenses | 1,744,631 | 920,383 | 210,429 | — | 2,875,443 |
| Gross Margin | 494,861 | 236,593 | 55,354 | — | 786,808 |
| Gross Margin % | 22.1 % | 20.4 % | 20.8 % | — % | 21.5 % |
| Selling, general and administrative expense | 178,347 | 104,644 | 10,355 | 50,156 | 343,502 |
| Depreciation and amortization | 184,172 | 75,010 | 31,019 | 11,899 | 302,100 |
| Segment operating income/ (loss) | 132,342 | 56,939 | 13,980 | (62,055) | 141,206 |
| Equity in net income of unconsolidated subsidiaries | 265 | — | 28,239 | — | 28,504 |
| Segment income | 132,607 | 56,939 | 42,219 | (62,055) | 169,710 |

| (in thousands, except percentages) | Feed Ingredients | Food Ingredients | Fuel Ingredients | Corporate | Total |
|---|---|---|---|---|---|
| Fiscal Year Ended December 31, 2016 | | | | | |
| Net Sales | $2,089,145 | $1,055,725 | $247,058 | $ — | $3,391,928 |
| Cost of sales and operating expenses | 1,624,804 | 828,072 | 182,457 | — | 2,635,333 |
| Gross Margin | 464,341 | 227,653 | 64,601 | — | 756,595 |
| Gross Margin % | 22.2 % | 21.6 % | 26.1 % | — % | 22.3 % |
| Selling, general and administrative expense | 167,287 | 97,168 | 6,766 | 40,331 | 311,552 |
| Acquisition costs | — | — | — | 401 | 401 |
| Depreciation and amortization | 178,845 | 70,120 | 28,531 | 12,412 | 289,908 |
| Segment operating income/(loss) | 118,209 | 60,365 | 29,304 | (53,144) | 154,734 |
| Equity in net income of unconsolidated subsidiaries | 467 | — | 69,912 | — | 70,379 |
| Segment income | 118,676 | 60,365 | 99,216 | (53,144) | 225,113 |

Feed Ingredients Segment

Raw material volume. In fiscal year 2017, the raw material processed by the Company's Feed Ingredients segment totaled 8.24 million metric tons. Compared to the fiscal year 2016 overall raw material volume processed in the Feed Ingredients segment increased approximately 3.4%.

Sales. During the year ended December 30, 2017, net sales for the Feed Ingredients segment were $2,239.5 million as compared to $2,089.1 million for the year ended December 31, 2016, an increase of approximately $150.4 million. Net sales for fats were approximately $648.3 million and $574.6 million for the years ended December 30, 2017 and December 31, 2016. Protein net sales were approximately $816.1 million and $769.4 million for the years ended December 30, 2017 and December 31, 2016. Other rendering net sales, which include hides, pet food, and service charges, were approximately $286.2 million and $269.1 million for the years ended December 30, 2017 and December 31, 2016. Total rendering net sales were approximately $1,750.6 million and $1,613.1 million for the years ended December 30, 2017 and December 31, 2016. Used cooking oil net sales were approximately $185.5 million and $165.1 million for the years ended December 30, 2017 and December 31, 2016. Bakery net sales were approximately $209.8 million and $220.4 million for the years ended December 30, 2017 and December 31, 2016 and other sales, which includes trap services, industrial residual services and organic fertilizer net sales were approximately $93.6

million and $90.5 million for the years ended December 30, 2017 and December 31, 2016.

The increase in net sales for the Feed Ingredients segment was primarily due to the following (in millions of dollars):

| | Fats | Proteins | Other Rendering | Total Rendering | Used Cooking Oil | Bakery | Other | Total |
|---|---|---|---|---|---|---|---|---|
| Net sales year ended December 31, 2016 | $574.6 | $769.4 | $ 269.1 | $ 1,613.1 | $ 165.1 | $220.4 | $90.5 | $2,089.1 |
| Increase/(decrease) in sales volumes | 35.2 | 29.0 | — | 64.2 | 1.1 | (6.7) | — | 58.6 |
| Increase/(decrease) in finished product prices | 35.2 | 10.6 | — | 45.8 | 19.0 | (3.9) | — | 60.9 |
| Increase/(decrease) due to currency exchange rates | 3.3 | 7.1 | 3.1 | 13.5 | 0.3 | — | — | 13.8 |
| Other change | — | — | 14.0 | 14.0 | — | — | 3.1 | 17.1 |
| Total change | 73.7 | 46.7 | 17.1 | 137.5 | 20.4 | (10.6) | 3.1 | 150.4 |
| Net sales year ended December 30, 2017 | $648.3 | $816.1 | $ 286.2 | $ 1,750.6 | $ 185.5 | $209.8 | $93.6 | $2,239.5 |

Margins. In the Feed Ingredients segment for fiscal year 2017, the gross margin percentage was 22.1% as compared to 22.2% for fiscal 2016.

Segment operating income. Feed Ingredients operating income for fiscal year 2017 was $132.3 million, an increase of $14.1 million as compared to fiscal year 2016. Earnings in the Feed Ingredients segment were up from the prior year due to an overall increase in sales volumes, higher finished product prices for fats and certain finished protein products and an increase in raw material volumes.

Food Ingredients Segment

Raw material volume. In fiscal year 2017, the raw material processed by the Company's Food Ingredients segment totaled 1.12 million metric tons. Compared to the fiscal year 2016 overall raw material volume processed in the Food Ingredients segment increased approximately 2.9%.

Sales. Overall sales increased in the Food Ingredients segment as a result of higher sales volumes in both the collagen and casing businesses.

Margins. In the Food Ingredients segment for fiscal year 2017, the gross margin percentage was 20.4% as compared to 21.6% for fiscal 2016. The decrease was primarily due to operational inefficiencies and macroeconomic factors in the South American collagen market in the first half of fiscal 2017.

Segment operating income. Food Ingredients' operating income was $56.9 million for fiscal 2017, a decrease of $3.5 million or (5.8)% as compared to fiscal 2016. The earnings in the collagen business were down as compared to the prior year primarily due to lower earnings in the Company's South American collagen business due to margin compression influenced by operating inefficiencies and macroeconomic factors in the first half of fiscal 2017. The casings business delivered improved performance due to overall high demand that slightly offset lower earnings in the collagen business. Additionally, selling, general and administrative expense in the Food Ingredients segment increased approximately $8.8 million primarily due to a reduction of currency hedge gains in fiscal 2017 as compared to the same period in fiscal 2016.

Fuel Ingredients Segment

Raw material volume. In fiscal year 2017, the raw material processed by the Company's Fuel Ingredients segment totaled 1.19 million metric tons. Compared to the fiscal year 2016 overall raw material volume processed in the Fuel Ingredients segment increased approximately 0.5%.

Sales. Overall sales increased in the Fuel Ingredients segment due to generally higher fat prices going to the biofuels market in fiscal 2017 as compared to the same period in fiscal 2016.

Margins. In the Fuel Ingredients segment (exclusive of the equity contribution from the DGD Joint Venture) for fiscal year 2017, the gross margin percentage was 20.8% as compared to 26.1% for fiscal 2016. This decrease was primarily due to the lack of the blenders tax credits in the U.S. for the fiscal year 2017 as compared to the same period in fiscal 2016 and curtailed operations at Ecoson to address current regulatory requirements.

Segment operating income. Exclusive of the DGD Joint Venture, Fuel Ingredients operating income for fiscal year 2017 was $14.0 million, a decrease of $15.3 million as compared to fiscal year 2016. The decrease for fiscal 2017 was primarily due to the absence of the blenders tax credits in U.S. and curtailed operations at Ecoson to address current regulatory requirements. Fiscal 2016 included blenders tax credits.

Foreign Currency

During fiscal 2017, the U.S. dollar weakened against most of the other functional currencies used by the Company's non-domestic operations when compared to fiscal 2016. Using actual results for fiscal year 2017 and the prior year's average foreign currency rates for fiscal 2016 would result in a decrease in operating income of approximately $5.7 million. The average rates assumption used in this calculation was the actual fiscal average rate for fiscal year 2017 of €1.00:USD$1.13 and CAD$1.00:USD$0.77 as compared to the average rate for fiscal year 2016 of €1.00:USD$1.11 and CAD$1.00:USD$0.76, respectively.

Corporate Activities

Selling, General and Administrative Expenses. Selling, general and administrative expenses were $50.2 million during fiscal year 2017, a $9.9 million increase from $40.3 million during fiscal year 2016. The increase was primarily due to corporate related benefits that was partially offset by a settlement gain of approximately $2.1 million recorded in 2017 from a previous acquisition.

Acquisition and Integration Costs. There were no acquisition and integration costs during the twelve months ended December 30, 2017, as compared to $0.4 million in the twelve months ended December 31, 2016.

Depreciation and Amortization. Depreciation and amortization charges decreased $0.5 million to $11.9 million during fiscal year 2017 as compared to $12.4 million during fiscal year 2016. The decrease was due to certain of the Company's corporate assets becoming fully depreciated as compared to the same period in fiscal 2016.

Interest Expense. Interest expense was $88.9 million for fiscal year 2017, compared to $94.2 million for fiscal year 2016, a decrease of $5.3 million. The decrease was primarily due to a reduction in interest incurred as a result of the payments on the term loan debt outstanding and a reduction in deferred loan cost amortization in fiscal year 2017 as compared to fiscal year 2016.

Foreign Currency Gains/(Losses). Foreign currency losses were $6.9 million during fiscal year 2017, as compared to a loss of approximately $1.9 million for fiscal year 2016. The increase in foreign currency losses was primarily due to losses on non-designated foreign exchange hedge contracts as compared to the same period in fiscal 2016.

Other Income/Expense. Other expense was $8.8 million for fiscal year 2017, compared to $6.5 million in fiscal year 2016. The increase in other expense for fiscal year 2017 as compared to fiscal year 2016 was primarily due to an increase in casualty losses in the Netherlands and North America in fiscal 2017 as compared to insurance gains recorded in the Netherlands in fiscal 2016.

Equity in Net Income in Investment of Unconsolidated Subsidiaries. Equity in net income in investment of unconsolidated subsidiaries primarily represents the Company's portion of the income of the DGD Joint Venture for fiscal year 2017. In fiscal year 2017, equity in net income was $28.5 million compared to $70.4 million in fiscal year 2016. The $41.9 million decrease was primarily due to the absence of the North American blenders tax credits in fiscal 2017 as compared to blenders tax credits recorded at the DGD Joint Venture in fiscal 2016.

Income Taxes. The Company recorded income tax benefit of $69.2 million for fiscal year 2017, compared to $15.3 million of income tax expense recorded in fiscal year 2016, a decrease of $84.5 million, which was primarily due to tax law changes enacted in December 2017 with respect to several of the Company's major tax jurisdictions offset by the expiration of the biofuel tax incentive. Specifically, a tax benefit of $75.0 million was recorded due to the U.S. tax reform and a tax benefit of $13.9 million was recorded for European tax law changes. The effective tax rate for fiscal year 2017 and fiscal year 2016 is (107.7)% and 12.5%, respectively. The effective tax rate for fiscal year 2017 differs from the statutory rate of 35% due primarily to the impact of U.S. tax reform, European tax law changes, the relative mix of earnings among jurisdictions with different tax rates, and subpart F income. Excluding the impact of U.S. tax reform and European tax law changes, the effective tax rate for fiscal year 2017 is 30.8%. The effective tax rate for fiscal year 2016 differs from the statutory rate of 35% due primarily to the biofuel tax incentives from the DGD Joint Venture, the relative mix of earnings among jurisdictions with different tax rates, and subpart F income. The biofuel tax incentive expired as of the end of fiscal 2016. Excluding the biofuel tax incentive, the effective tax rate for fiscal 2016 is 35.7%.

Non-U.S. GAAP Measures

For a discussion of the reasons the Company's management believes the following Non-GAAP financial measures provide useful information to investors and the purposes for which the Company's management uses such measures, see “Results of Operations - Fiscal Year Ended December 29, 2018 Compared to Fiscal Year Ended December 30, 2017 - Non-U.S. GAAP Measures.”

Reconciliation of Net Income to (Non-GAAP) Adjusted EBITDA and (Non-GAAP) Pro Forma Adjusted EBITDA Fiscal Year 2017 As Compared to Fiscal 2016

| (dollars in thousands) | Fiscal Year Ended December 30, 2017 | December 31, 2016 |
|---|---|---|
| Net income attributable to Darling | $128,468 | $102,313 |
| Depreciation and amortization | 302,100 | 289,908 |
| Interest expense | 88,926 | 94,187 |
| Income tax expense/(benefit) | (69,154) | 15,315 |
| Foreign currency loss/(gain) | 6,898 | 1,854 |
| Other expense/(income), net | 8,801 | 6,533 |
| Loss on disposal of subsidiaries | 885 | — |
| Equity in net income of unconsolidated subsidiaries | (28,504) | (70,379) |
| Net (loss)/income attributable to noncontrolling interests | 4,886 | 4,911 |
| Adjusted EBITDA (Non-GAAP) | $443,306 | $444,642 |
| | | |
| Acquisition and integration-related expenses | — | 401 |
| Pro forma Adjusted EBITDA (Non-GAAP) | $443,306 | $445,043 |
| | | |
| Foreign currency exchange impact (1) | (5,682) | — |
| Pro forma Adjusted EBITDA to Foreign Currency (Non-GAAP) | $437,624 | $445,043 |
| | | |
| DGD Joint Venture Adjusted EBITDA (Darling's Share) | $43,198 | $87,224 |

(1) The average rate assumption used in this calculation was the actual fiscal average rate for the fiscal year ended December 30, 2017 of €1.00:USD$1.13 and CAD$1.00:USD$0.77 as compared to the average rate for the fiscal year ended December 31, 2016 of €1.00:USD$1.11 and CAD$1.00:USD$0.76, respectively.

For the fiscal year ended December 30, 2017, the Company generated Adjusted EBITDA (Non-GAAP) of $443.3 million, as compared to $444.6 million for the year ended December 31, 2016. The decrease is attributable to lower earnings in the Food Ingredients and Fuel Ingredients segment.

On a Pro forma Adjusted EBITDA (Non-GAAP) basis, the Company would have generated $443.3 million for the fiscal year ended December 30, 2017, as compared to $445.0 million for the year ended December 31, 2016 when excluding acquisition and integration-related expenses. Additionally, in February 2018, the blender tax credits for calendar year 2017 were retroactively reinstated by the U.S. Congress. The Fuel Ingredients segment received approximately $12.6 million in fiscal 2018 for these reinstated blenders tax credits. If these blenders tax credits were included in fiscal 2017 operations, Pro forma Adjusted EBITDA would have been $455.9 million for the fiscal year ended December 30, 2017, an increase of $10.9 million, as compared to $445.0 million for the year ended December 31, 2016.

DGD Joint Venture Adjusted EBITDA (Darling's Share) is not reflected in the Adjusted EBITDA, the Pro forma Adjusted EBITDA, or the Pro forma Adjusted EBITDA to Foreign Currency (Non-GAAP). See Note 2 to Notes to Consolidated Financial Statements included herein for financial information regarding the DGD Joint Venture.

## FINANCING, LIQUIDITY, AND CAPITAL RESOURCES

### Indebtedness

Certain Debt Outstanding at December 29, 2018. On December 29, 2018, debt outstanding under the Company's Amended Credit Agreement, the Company's 5.375% Notes and the Company's 3.625% Notes consists of the following (in thousands):

| | |
|---|---|
| Senior Notes: | |
| 5.375 % Notes due 2022 | $500,000 |
| Less unamortized deferred loan costs | (4,876 ) |
| Carrying value of 5.375% Notes due 2022 | $495,124 |
| | |
| 3.625 % Notes due 2026 - Denominated in euros | $590,499 |
| Less unamortized deferred loan costs | (8,160 ) |
| Carrying value of 3.625% Notes due 2026 | $582,339 |
| | |
| Amended Credit Agreement: | |
| Term Loan A | $68,080 |
| Less unamortized deferred loan costs | (381 ) |
| Carrying value of Term Loan A | $67,699 |
| | |
| Term Loan B | $495,000 |
| Less unamortized deferred loan costs | (9,024 ) |
| Carrying value of Term Loan B | $485,976 |
| | |
| Revolving Credit Facility: | |
| Maximum availability | $1,000,000 |
| Bank overdraft financing | 15,000 |
| Borrowings outstanding | 32,105 |
| Letters of credit issued | 23,070 |
| Availability | $929,825 |
| | |
| Other Debt | $11,189 |

At December 29, 2018, the U.S. dollar was stronger as compared to the euro and Canadian dollar at December 30, 2017. Using the euro and Canadian dollar based debt outstanding at December 29, 2018 and comparing the closing balance sheet rates at December 29, 2018 to those at December 30, 2017, the U.S. dollar debt balances of euro based debt decreased by $28.0 million and the U.S. dollar debt balances of Canadian based debt decreased by approximately $2.5 million, at December 29, 2018. The closing balance sheet rate assumptions used in this calculation were the actual fiscal closing balance sheet rate at December 29, 2018 of €1.00:USD$1.146600 and CAD$1.00:USD$0.735401 as compared to the closing balance sheet rate at December 30, 2017 of €1.00:USD$1.198750 and CAD$1.00:USD$0.797970, respectively.

Senior Secured Credit Facilities. On January 6, 2014, Darling, Darling International Canada Inc. (“Darling Canada”) and Darling International NL Holdings B.V. (“Darling NL”) entered into a Second Amended and Restated Credit Agreement (as subsequently amended, the “Amended Credit Agreement”), restating its then existing Amended and Restated Credit Agreement dated September 27, 2013, with the lenders from time to time party thereto, JPMorgan Chase Bank, N.A., as Administrative Agent, and the other agents from time to time party thereto. Effective December 18, 2017, the Company, and certain of its subsidiaries entered into an amendment (the “Fifth Amendment”) with its lenders to the Amended Credit Agreement. Among other things, the Fifth Amendment (i) refinanced the term B loans under the Amended Credit Agreement with new term B loans in an aggregate principal amount of $525.0 million with a maturity date of December 18, 2024; (ii) adjusted the applicable margin pricing on borrowings under the term B loan; (iii) modified certain of the negative covenants to increase the allowances for certain actions, including debt and investments; and (iv) made other updates and changes. Effective December 16, 2016, the Company, and certain of its subsidiaries entered into an amendment (the “Fourth Amendment”) with its lenders to the Amended Credit Agreement. Among other things, the Fourth Amendment extended the maturity date of the term A loans and revolving credit facility loans under the Amended Credit Agreement from September 27, 2018 to December 16, 2021. For more information regarding the Amended Credit Agreement see Note 10 of Notes to Consolidated Financial Statements included herein.

- As of December 29, 2018, the Company had availability of $929.8 million under the revolving loan facility, taking into account an aggregate of $32.1 million in outstanding borrowings, an overdraft sub-facility and letters of credit issued of $23.1 million.

- As of December 29, 2018, the Company has borrowed all $350.0 million under the term loan A facility and repaid approximately CAD$109.4 million and $161.8 million, which when repaid, cannot be reborrowed. The term loan A facility is repayable in quarterly installments which commenced on March 31, 2017 as follows: for the first eight quarters following December 16, 2016, 1.25% of the original principal amount of the term loan A facility outstanding on the Fourth Amendment date, for the ninth through sixteenth quarters following December 16, 2016, 1.875% of the original principal amount of the term loan A facility outstanding on the Fourth Amendment date, and for each quarterly installment after such sixteenth installment until December 16, 2021, 3.75% of the original principal amount of the term loan A facility outstanding on the Fourth Amendment date. The term loan A facility will mature on December 16, 2021.

- As of December 29, 2018, the Company has borrowed all $525.0 million under the terms of the term loan B facility and repaid approximately $30.0 million, which when repaid, cannot be reborrowed. The term loan B facility is repayable in quarterly installments of 0.25% of the aggregate principal amount of the relevant term loan B facility on the last day of each March, June, September and December of each year commencing on the last day of each month falling on or after the last day of the first full quarter following December 18, 2017, and continuing until the last day of each quarter period ending immediately prior to December 18, 2024; and one final installment in the amount of the relevant term loan B facility then outstanding, due on December 18, 2024. The term loan B facility will mature on December 18, 2024.

- The interest rate applicable to any borrowings under the term loan A facility and the revolving loan facility will equal either LIBOR/euro interbank offered rate/CDOR plus 2.00% per annum or base rate/Canadian prime rate plus 1.00% per annum, subject to certain step-downs or step-ups based on the Company's total leverage ratio. The interest rate applicable to any borrowings under the term loan B facility will equal the base rate plus 1.00% or LIBOR plus 2.00%.

5.375% Senior Notes due 2022. On January 2, 2014, Darling Escrow Sub, a Delaware corporation and wholly-owned subsidiary of Darling, issued and sold $500.0 million aggregate principal amount of its 5.375% Notes. The 5.375% Notes, which were offered in a private offering in connection with its acquisition of its Darling Ingredients International business, were issued pursuant to the Original 5.375% Indenture, (as supplemented, the “5.375% Indenture”), among Darling Escrow Sub, the Subsidiary Guarantors (as defined in the Original 5.375% Indenture) party thereto from time to time and U.S. Bank National Association, as trustee (the “5.375% Trustee”). For a description of the terms of the 5.375% Notes see Note 10 of Notes to Consolidated Financial Statements.

3.625 % Senior Notes due 2026. On May 2, 2018, Darling Global Finance B.V. issued and sold €515 million aggregate principal amount of 3.625% Senior Notes due 2026 (the “3.625% Notes”). The 3.625% Notes, which were offered in a private offering, were issued pursuant to a Senior Notes Indenture, dated as of May 2, 2018, among Darling Global Finance B.V., Darling, the subsidiary guarantors party thereto from time to time, Citibank, N.A., London Branch, as trustee and principal paying agent, and Citigroup Global Markets Deutschland AG, as principal registrar. The gross proceeds of the offering, together with borrowings under the Company's revolving credit facility, were used to refinance all of the then outstanding 4.75% Notes by cash tender offer and redemption of those notes and to pay any applicable premiums for the refinancing, to pay the commission of the initial purchasers of the 3.625% Notes and to pay the other fees and expenses related to the offering. The refinancing of the 4.75% Notes was completed in the second quarter of 2018. For a description of the terms of the 3.625% Notes see Note 10 of Notes to Consolidated Financial Statements.

Other debt consists of Canadian and European capital lease obligations, note arrangements in Brazil, China and European and U.S. notes that are not part of the Company's Amended Credit Agreement, 5.375% Notes or 3.625% Notes.

The classification of long-term debt in the Company’s December 29, 2018 consolidated balance sheet is based on the contractual repayment terms of the 5.375% Notes, the 3.625% Notes and debt issued under the Amended Credit Agreement.

As a result of the Company's borrowings under its Amended Credit Agreement, the 5.375% Indenture and the 3.625% Indenture, the Company is highly leveraged. Investors should note that, in order to make scheduled payments on the indebtedness outstanding under the Amended Credit Agreement, the 5.375% Notes and the 3.625% Notes, and otherwise, the Company will rely in part on a combination of dividends, distributions and intercompany loan repayments from the Company's direct and indirect U.S. and foreign subsidiaries. The Company is prohibited under the Amended Credit Agreement, the 5.375% Indenture and the 3.625% Indenture from entering (or allowing such subsidiaries to enter) into contractual limitations on the Company's subsidiaries' ability to declare dividends or make other payments or distributions to the Company. The Company has also attempted to structure the Company's consolidated indebtedness in such a way as to maximize the Company's ability to move cash from the Company's subsidiaries to Darling or another subsidiary that will have fewer limitations on the ability to make upstream payments, whether to Darling or directly to the Company's lenders as a Guarantor. Nevertheless, applicable laws under which the Company's direct and indirect subsidiaries are formed may provide limitations on such dividends, distributions and other payments. In addition, regulatory authorities in various countries where the Company operates or where the Company imports or exports products may from time to time impose import/export limitations, foreign exchange controls or currency devaluations that may limit the Company's access to profits from the Company's subsidiaries or otherwise negatively impact the Company's financial condition and therefore reduce the Company's ability to make required payments under Amended Credit Agreement, the 5.375% Notes and the 3.625% Notes, or otherwise. In addition, fluctuations in foreign exchange values may have a negative impact on the Company's ability to repay indebtedness denominated in U.S. or Canadian dollars or euros. See "Risk Factors - Our business may be adversely impacted by fluctuations in exchange rates, which could affect our ability to comply with our financial covenants" and "- Our ability to repay our indebtedness depends in part on the performance of our subsidiaries, including our non-guarantor subsidiaries, and their ability to make payments" in Item 1A of this Annual Report on Form 10-K for the fiscal year ended December 29, 2018.

As of December 29, 2018, the Company believes it is in compliance with all financial covenants under the Amended Credit Agreement, as well as all of the other covenants contained in the Amended Credit Agreement, the 5.375% Indenture and the 3.625% Indenture.

Working Capital and Capital Expenditures

On December 29, 2018, the Company had working capital of $357.4 million and its working capital ratio was 1.66 to 1 compared to working capital of $397.0 million and a working capital ratio of 1.71 to 1 on December 30, 2017. At December 29, 2018, the Company had unrestricted cash of $107.3 million and funds available under the revolving credit facility of $929.8 million, compared to unrestricted cash of $106.8 million and funds available under the revolving credit facility of $976.0 million at December 30, 2017. The Company diversifies its cash investments by limiting the amounts deposited with any one financial institution and invests primarily in government-backed securities.

Net cash provided by operating activities was $398.6 million and $410.4 million for the fiscal years ended December 29, 2018 and December 30, 2017, respectively, a decrease of $11.8 million due primarily to a decrease in net income of approximately $27.5 million, an increase in distributions from unconsolidated subsidiaries of approximately $40.8 million, changes in operating assets and liabilities that include a decrease in cash provided by accounts receivable of approximately $9.8 million, a decrease in accounts payable and accrued expense of approximately $58.9 million, a decrease in income taxes and payables refundable/payable of approximately $19.2 million and an increase in prepaid expenses and inventory of $17.4 million. Cash used by investing activities was $342.4 million during fiscal 2018, compared to $284.1 million in fiscal 2017, an increase in cash used of $58.3 million, primarily due to an increase in cash paid for capital expenditures and acquisitions that more than offset proceeds from the sale of subsidiaries. Net cash used by financing activities was $47.6 million during fiscal 2018, compared to $154.9 million in fiscal 2017, a decrease in cash used of $107.3 million primarily due to a decrease in debt payments and increased revolver borrowings as compared to fiscal 2017.

Capital expenditures of $321.9 million were made during fiscal 2018 as compared to $274.2 million in fiscal 2017, an increase of $47.7 million, or 17.4%. In fiscal 2019, the Company expects to incur approximately $233.0 million in maintenance and compliance type capital expenditures and approximately $67.0 million for new construction (including expansions) for a total of approximately $300.0 million. These costs are expected to be financed using cash flows from operations. Capital expenditures related to compliance with environmental regulations were $32.1 million in fiscal 2018, $27.5 million in fiscal 2017 and $17.5 million in fiscal 2016.

Accrued Insurance and Pension Plan Obligations

Based upon the annual actuarial estimate, current accruals and claims paid during fiscal 2018, the Company has accrued approximately $9.3 million as of December 29, 2018 that it expects will become due during the next twelve months in order to meet obligations related to the Company's self insurance reserves and accrued insurance obligations, which are included in current accrued expenses at December 29, 2018. The self insurance reserve is composed of estimated liability for claims arising for workers' compensation and for auto liability and general liability claims. The self insurance reserve liability is determined annually, based upon a third party actuarial estimate. The actuarial estimate may vary from year to year, due to changes in costs of health care, the pending number of claims and other factors beyond the control of management of the Company.

Based upon current actuarial estimates, the Company expects to make payments of approximately $0.9 million in order to meet minimum pension funding requirements to its domestic plans in fiscal 2019. In addition, the Company expects to make payments of approximately $3.3 million under its foreign pension plans in fiscal 2019. The minimum pension funding requirements are determined annually, based upon a third party actuarial estimate. The actuarial estimate may vary from year to year, due to fluctuations in return on investments or other factors beyond the control of management of the Company or the administrator of the Company's pension funds. No assurance can be given that the minimum pension funding requirements will not increase in the future. The Company has made required and tax deductible discretionary contributions to its domestic pension plans in fiscal 2018 and fiscal 2017 of approximately $1.0 million and $1.0 million, respectively. Additionally, the Company has made required and tax deductible discretionary contributions to its foreign pension plans in fiscal 2018 of approximately $3.5 million, as compared to $3.3 million in contributions in fiscal 2017.

The U.S. Pension Protection Act of 2006 ("PPA") went into effect in January 2008. The stated goal of the PPA is to improve the funding of U.S. pension plans. U.S. plans in an under-funded status are required to increase employer contributions to improve the funding level within PPA timelines. The impact of recent volatility in the world equity and other financial markets have had and could continue to have a material negative impact on U.S. pension plan assets and the status of required funding under the PPA. The Company participates in various U.S. multiemployer pension plans which provide defined benefits to certain employees covered by labor contracts. These plans are not administered by the Company and contributions are determined in accordance with provisions of negotiated labor contracts to meet their pension benefit obligations to their participants. The Company's contributions to each individual U.S. multiemployer plan represent less than 5% of the total contributions to each such plan. Based on the most currently available information, the Company has determined that, if a withdrawal were to occur, withdrawal liabilities on two of the U.S. plans in which the Company currently participates could be material to the Company, with one of these material plans certified as critical or red zone. With respect to the other U.S. multiemployer pension plans in which the Company participates and which are not individually significant, five plans have certified as critical or red zone and two have certified as endangered or yellow zone, as defined by the PPA. The Company has received notices of withdrawal liability from two U.S. multiemployer pension plans in which it participated. As a result, the Company has an accrued aggregate current liability of approximately $1.6 million representing the present value of scheduled withdrawal liability payments under these multiemployer plans. While the Company has no ability to calculate a possible current liability for under-funded multiemployer plans that could terminate or could require additional funding under the PPA, the amounts could be material.

DGD Joint Venture

The Company announced on January 21, 2011 that a wholly-owned subsidiary of Darling entered into a limited liability company agreement with Valero to form the DGD Joint Venture. The DGD Joint Venture is owned 50% / 50% with Valero and was formed to design, engineer, construct and operate the DGD Facility, which as a result of its recently expanded capacity is now capable of processing approximately 20,000 barrels per day of input feedstock to produce renewable diesel fuel and certain other co-products, and is located adjacent to Valero's refinery in Norco, Louisiana. The DGD Joint Venture reached mechanical completion and began the production of renewable diesel in late June 2013.

On February 23, 2015, Darling, through its wholly owned subsidiary Darling Green Energy LLC, (“Darling Green”), and a third party Diamond Alternative Energy, LLC (“Diamond Alternative” and together with Darling Green, the “DGD Lenders”) entered into a revolving loan agreement (the “DGD Loan Agreement”) with the DGD Joint Venture. The DGD Lenders have committed to make loans available to the DGD Joint Venture in the total amount of $10.0 million with each lender committed to $5.0 million of the total commitment. Any borrowings by the DGD Joint Venture under the DGD Loan Agreement are at the applicable annum rate equal to the sum of (a) the LIBO Rate (meaning Reuters BBA Libor Rates Page 3750) on such day plus (b) 2.50%. The DGD Loan Agreement matured on December 31, 2018. As of December 29, 2018, no amounts are owed to Darling Green under the DGD Loan Agreement. The DGD Joint Venture, together with its joint venture partners, evaluates its capital structure from time to time, including opportunities to refinance the JV Loan.

Future dividend distributions from the DGD Joint Venture to the joint venture partners are expected to be made based on the DGD Joint Venture's available cash and capital needs. During the twelve months ended December 29, 2018, the DGD Joint Venture made dividend distributions to each partner in the amount of $65.0 million.

Based on the sponsor support agreements executed in connection with the Facility Agreement and the Loan Agreement relating to the DGD Joint Venture with Valero, the Company has contributed a total of approximately $111.7 million for the completion of the DGD Facility including the Company's portion of cost overruns and working capital funding. As of the date of this report, it is anticipated that substantially all contributions have been made, except for possible additional working capital funding, which is not expected to be material to the Company if it occurs. As of December 29, 2018, under the equity method of accounting, the Company has an investment in the DGD Joint Venture of approximately $368.7 million on the consolidated balance sheet.

In August 2018, the DGD Joint Venture completed an expansion project that increased the DGD Facility's annual production capacity from 160 million gallons of renewable diesel to 275 million gallons and expanded outbound logistics for servicing the many developing low carbon fuel markets around North America and worldwide. In November 2018, the joint venture partners approved the DGD Joint Venture moving forward with another expansion project, which is expected to grow the facility's annual production capacity by an additional 400 million gallons from the current capacity of 275 million gallons of renewable diesel to 675 million gallons of renewable diesel and provide the capability to separate naphtha for sale into low carbon fuel markets. This expansion project is expected to be funded by DGD Joint Venture cash flow; provided, however, that in the event the DGD Joint Venture’s cash flow is not sufficient to fund the project, the Company would be required to contribute to the DGD Joint Venture its proportionate share of the additional funds necessary to cover such shortfall, with such additional funding to be in the form of an equity contribution or, if agreed to by the joint venture partners, a loan. The DGD Joint Venture estimates completion and startup of the expansion project in the fourth quarter of 2021. The expansion will be in the form of a parallel facility located next to the current facility. The planned expansion will also include expanded inbound and outbound logistics for servicing the many developing low carbon fuel markets around North America and worldwide. The total cost of the expansion project, including the naphtha production and improved logistics capability, is estimated to be approximately $1.1 billion.

Financial Impact of Significant Debt Outstanding

The Company has a substantial amount of indebtedness, which could make it more difficult for us to satisfy our obligations to our financial lenders and our contractual and commercial commitments, limit our ability to obtain additional financing to fund future working capital, capital expenditures, acquisitions or other general corporate requirements on commercially reasonable terms or at all, require us to use a substantial portion of our cash flows from operations to pay principal and interest on our indebtedness instead of other purposes, thereby reducing the amount of our cash flows from operations available for working capital, capital expenditures, acquisitions and other general corporate purposes, increase our vulnerability to adverse economic, industry and business conditions, expose us to the risk of increased interest rates as certain of our borrowings are at variable rates of interest, limit our flexibility in planning for, or reacting to, changes in our business and the industry in which we operate, place us at a competitive disadvantage compared to other, less leveraged competitors, and/or increase our cost of borrowing.

Cash Flows and Liquidity Risks

Management believes that the Company’s cash flows from operating activities consistent with the level generated in fiscal 2018, unrestricted cash and funds available under the Amended Credit Agreement, will be sufficient to meet the Company’s working capital needs and maintenance and compliance-related capital expenditures, scheduled debt and interest payments, income tax obligations, and other contemplated needs through the next twelve months. Numerous factors could have adverse consequences to the Company that cannot be estimated at this time, such as those factors discussed below under the heading “Forward Looking Statements”. These factors, coupled with volatile prices for natural gas and diesel fuel, currency exchange fluctuations, general performance of the U.S. and global economies, disturbances in world financial, credit, commodities and stock markets, and any decline in consumer confidence, including the inability of consumers and companies to obtain credit due to lack of liquidity in the financial markets, among others, could negatively impact the Company's results of operations in fiscal 2019 and thereafter. The Company reviews the appropriate use of unrestricted cash periodically. As of the date of this report, no decision has been made as to non-ordinary course cash usages at this time; however, potential usages could include: opportunistic capital expenditures and/or acquisitions and joint ventures; investments relating to the Company’s renewable energy strategy, including, without limitation, potential required funding obligations with respect to the DGD Joint Venture expansion project or potential investments in additional renewable diesel and/or biodiesel projects; investments in response to governmental regulations relating to human and animal food safety or other regulations; unexpected funding required by the legislation, regulation or mass termination of multiemployer plans; and paying dividends or repurchasing stock, subject to limitations under the Amended Credit Agreement, the 5.375 % Notes and the 3.625% Notes, as well as suitable cash conservation to withstand adverse commodity cycles. In August 2015, the Company's Board of Directors approved a share repurchase program of up to an aggregate of $100.0 million of the Company's Common Stock depending on market conditions. The repurchases may be made from time to time on the open market at prevailing market prices or in negotiated transactions off the market. The program initially approved by the Board of Directors was for a 24-month period; however, the Board has subsequently extended the program for an additional 36 month period and increased the amount of the program to $200.0 million. Accordingly, repurchases may occur through August 13, 2020, unless further extended or shortened by the Board of Directors. Since the inception of the share repurchase program, the Company has repurchased approximately $10.9 million of its common stock in open market purchases and, as of the date of this report, has $200.0 million remaining in its share repurchase program.

Each of the factors described above has the potential to adversely impact the Company's liquidity in a variety of ways, including through reduced raw materials availability, reduced finished product prices, reduced sales, potential inventory buildup, increased bad debt reserves, potential impairment charges and/or higher operating costs.

Sales prices for the principal products that the Company sells are typically influenced by sales prices for agricultural-based ingredients, the prices of which are based on established commodity markets and are subject to volatile changes. Any decline in these prices has the potential to adversely impact the Company's liquidity. Any of a decline in raw material availability, a decline in agricultural-based alternative ingredients prices, increases in energy prices or the impact of U.S. and foreign regulation (including, without limitation, China), changes in foreign exchange rates, imposition of currency controls and currency devaluations has the potential to adversely impact the Company's liquidity. A decline in commodities prices, a rise in energy prices, a slowdown in the U.S. or international economy or other factors, could cause the Company to fail to meet management's expectations or could cause liquidity concerns.

CONTRACTUAL OBLIGATIONS AND OTHER COMMERCIAL COMMITMENTS

The following table summarizes the Company’s expected material contractual payment obligations, including both on- and off-balance sheet arrangements at December 29, 2018 (in thousands):

| | Total | Less than 1 Year | 1 – 3 Years | 3 – 5 Years | More than 5 Years |
|---|---|---|---|---|---|
| Contractual obligations(a): | | | | | |
| Long-term debt obligations (b) | $1,685,684 | $— | $100,185 | $500,188 | $1,085,311 |
| Operating lease obligations (c) | 152,759 | 46,316 | 56,655 | 21,569 | 28,219 |
| Capital lease obligations (c) | 435 | 270 | 159 | 6 | — |
| Estimated interest payable (d) | 383,281 | 78,488 | 156,081 | 86,906 | 61,806 |
| Purchase commitments (e) | 68,124 | 68,124 | — | — | — |
| Pension funding obligation (f) | 4,248 | 4,248 | — | — | — |
| Other obligations (b) | 10,775 | 7,236 | 2,929 | 41 | 569 |
| Total | $2,305,306 | $204,682 | $316,009 | $608,710 | $1,175,905 |

(a) The above table does not reflect uncertain tax positions at December 29, 2018. The Company's uncertain tax position is approximately $5.8 million.

(b) Represents debt obligations outstanding as of December 29, 2018. See Note 10 to Notes to Consolidated Financial Statements.

(c) See Note 9 to Notes to Consolidated Financial Statements.

(d) Interest payable was calculated using the current rate for the debt that was outstanding as of December 29, 2018.

(e) Purchase commitments were determined based on specified contracts for natural gas, diesel fuel and finished product purchases.

(f) Pension funding requirements are determined annually based upon a third party actuarial estimate. The Company expects to make approximately $4.2 million in required contributions to domestic and foreign pension plans in fiscal 2019. The Company is not able to estimate pension funding requirements beyond the next twelve months. The accrued pension benefit liability was approximately $56.8 million at the end of fiscal 2018. The Company knows certain of the multiemployer pension plans that have not terminated to which it contributes and which are not administered by the Company were under-funded as of the latest available information, and while the Company has no ability to calculate a possible current liability for the under-funded multiemployer plan to which the Company contributes, the amounts could be material.

The Company's off-balance sheet contractual obligations and commercial commitments as of December 29, 2018 relate to operating lease obligations, letters of credit, foreign bank guarantees, forward purchase agreements and employment agreements. The Company has excluded these items from the balance sheet in accordance with U.S. GAAP.

The following table summarizes the Company’s other commercial commitments, including both on- and off-balance sheet arrangements that are part of the Company's Amended Credit Agreement and other foreign bank guarantees that are not a part of the Company's Amended Credit Agreement at December 29, 2018 (in thousands):

| | |
|---|---|
| Other commercial commitments: | |
| Standby letters of credit | $23,070 |
| Foreign bank guarantees | 17,777 |
| Total other commercial commitments: | $40,847 |

OFF BALANCE SHEET OBLIGATIONS

Based upon the underlying purchase agreements, the Company has commitments to purchase $68.1 million of commodity products, consisting of approximately $38.7 million of finished and raw material products and approximately $25.2 million of natural gas and diesel fuel and approximately $4.2 million of other commitments during the next twelve months, which are not included in liabilities on the Company's balance sheet at December 29, 2018. These purchase agreements are entered into in the normal course of the Company's business and are not subject to derivative accounting. The commitments will be recorded on the balance sheet of the Company when delivery of these commodities occurs and ownership passes to the Company during fiscal 2019, in accordance with U.S. GAAP.

Based upon underlying lease agreements, the Company is obligated to pay approximately $46.3 million for operating leases during fiscal 2019, which are not included in liabilities on the Company's balance sheet at December 29, 2018. These lease obligations are included in cost of sales or selling, general and administrative expense on the Company's Statement of Operations as the underlying lease obligation comes due, in accordance with U.S. GAAP.

CRITICAL ACCOUNTING POLICIES

The Company follows certain significant accounting policies when preparing its consolidated financial statements. A complete summary of these policies is included in Note 1 of Notes to Consolidated Financial Statements.

Certain of the policies require management to make significant and subjective estimates or assumptions that may deviate from actual results. In particular, management makes estimates regarding fair value of the Company's reporting units and future cash flows with respect to assessing potential impairment of both long-lived assets and goodwill and pension liability. Each of these estimates is discussed in greater detail in the following discussion.

Long-Lived Assets

The Company reviews the carrying value of long-lived assets for impairment when events or changes in circumstances indicate that the carrying amount of an asset, or related asset group, may not be recoverable from estimated future undiscounted cash flows. Recoverability of assets to be held and used is measured by a comparison of the carrying amount of an asset or asset group to estimated undiscounted future cash flows expected to be generated by the asset or asset group. If the carrying amount of the asset exceeds its estimated future cash flows, an impairment charge is recognized by the amount by which the carrying amount of the asset exceeds the fair value of the asset. In fiscal 2018, the Company shut down the operations at its Hurlingham, Argentina plant and recorded impairment charges related to its long-lived assets of approximately $2.4 million. In fiscal 2018, no triggering event occurred requiring that the Company perform testing of its long-lived assets for impairment.

Goodwill Valuation

The Company performed the annual goodwill and indefinite-lived intangible assets impairment assessments at October 27, 2018 and concluded that the Company's goodwill for all reporting units and all recorded indefinite-lived intangible assets were not impaired as of that date. Goodwill and indefinite lived assets are tested annually or more frequently if events or changes in circumstances indicate that the asset might be impaired. The Company follows a two-step process for testing impairment. First, the fair value of each reporting unit is compared to its carrying value to determine whether an indication of impairment exists. If impairment is indicated, then the fair value of the reporting unit's goodwill is determined by allocating the unit's fair value of its assets and liabilities (including any unrecognized intangible assets) as if the reporting unit had been acquired in a business combination. The amount of impairment for goodwill is measured as the excess of its carrying value over its implied fair value.

Based on the Company's annual impairment testing at October 27, 2018, October 28, 2017 and October 29, 2016, the fair values of the Company's reporting units containing goodwill exceeded the related carrying value. However, based on the Company's annual impairment testing at October 28, 2018, the fair value of six of the Company's eight reporting units was less than 30% in excess of its carrying value and one reporting unit (Canada Fuel) was less than 10% of the estimated fair value with goodwill of approximately $29.4 million, which was substantially less than the percentage by which the other reporting units with goodwill exceeded their carrying values. The Company determined the fair value of reporting units with the assistance of a valuation expert who assisted the Company primarily using the Income Approach to determine the fair value of the Company's reporting units. Key assumptions that impacted the discounted cash flow model were raw material volumes, gross margins, terminal growth rates and discount rates. It is possible, depending upon a number of factors that are not determinable at this time or within the control of the Company, that the fair value of these six reporting units could decrease in the future and result in an impairment to goodwill. The amount of goodwill allocated to these six reporting units was approximately $813.1 million. The Company's management believes the biggest risk to these reporting units is decreasing finished product prices impacting gross margins and an economic slowdown that would impact raw material suppliers. Goodwill was approximately $1,229.2 million and $1,301.1 million at December 29, 2018 and December 30, 2017, respectively.

Pension Liability

The Company has retirement and pension plans covering a substantial number of its domestic and foreign employees. Major assumptions used in the accounting for these employee benefit plans include the discount rate, expected return on plan assets, rate of increase in employee compensation levels, mortality rates and trends in health care costs. The actuarial assumptions used may differ materially from actual results due to changing market and economic conditions, higher or lower withdrawal rates or longer or shorter life spans of participants. These differences may result in a significant impact to the amount of net periodic benefit cost recorded in future periods.

The discount rate applied to the Company’s pension liability is the interest rate used to calculate the present value of the pension benefit obligation. The weighted average discount rate was 3.68% at December 29, 2018 and 3.40% at December 30, 2017, respectively. The net periodic benefit cost for fiscal 2019 would increase by approximately $1.2 million if the discount rate was 0.5% lower at a weighted average of 3.18%. The net periodic benefit cost for fiscal 2019 would decrease by approximately $1.1 million if the discount rate was 0.5% higher at a weighted average of 4.18%.

NEW ACCOUNTING PRONOUNCEMENTS

In August 2018, the SEC issued Release No. 33-10532 that amends and clarifies certain financial reporting requirements for public companies. The principal change to the Company's financial reporting will be the inclusion of the annual disclosure requirements of changes in stockholders' equity in Rule 3-04 of Regulation S-X to interim periods. The Company will adopt the new rule beginning with the Company's financial reporting for the quarter ended March 30, 2019. Upon adoption , the Company will include the Company's consolidated statements of stockholders' equity in each quarterly filing on Form 10-Q.

In August 2018, the Financial Accounting Standards Board (“FASB”) issued Accounting Standards Update (“ASU”) No. 2018-15, Customer's Accounting for Implementation Costs Incurred in a Cloud Computing Arrangement that is a Service Contract. This ASU amends Subtopic 350-40, Intangibles - Goodwill and Other Internal - Use Software, which will align the requirements for capitalizing implementation costs incurred in a hosting arrangement that is a service contract with the requirements for capitalizing implementation costs incurred to develop or obtain internal-use software. The standard is effective for fiscal years beginning after December 15, 2019 and for interim periods therein, with early adoption permitted. Implementation should be applied either retrospectively or prospectively to all implementation costs incurred after the date of adoption. The Company is currently evaluating the impact of this standard.

In August 2018, the FASB issued ASU No. 2018-14, Changes to the Disclosure Requirements for Defined Benefit Plans. This ASU amends Subtopic 715-20, Compensation - Retirement Benefits - Defined Benefit Plans - General, which modifies the disclosure requirements for employers that sponsor defined benefit pension or other postretirement plans by removing and adding certain disclosures for these plans. The standard is effective for fiscal years ending after December 15, 2020, with early adoption permitted. The Company is currently evaluating the impact of this standard.

In August 2018, the FASB issued ASU No. 2018-13, Changes to the Disclosure Requirements for Fair Value Measurements. This ASU amends Topic 820, Fair Value Measurement, which changes the disclosure requirements for fair value measurements by removing, adding and modifying certain disclosures. The standard is effective for fiscal years beginning after December 15, 2019 and for interim periods therein, with early adoption permitted. The Company is currently evaluating the impact of this standard.

In August 2017, the FASB issued ASU No. 2017-12, Targeted Improvement to Accounting for Hedging Activities. This ASU amends Topic 815, Derivatives and Hedging, which is intended to more closely align hedge accounting with companies' risk management strategies and simplify the application of hedge accounting. The guidance includes certain targeted improvements to ease the operational burden of applying hedge accounting. The ASU is effective for fiscal years beginning after December 15, 2018 and for interim periods therein with early adoption permitted. The Company will be required to apply the guidance on a cumulative-effect basis with adjustment to retained earnings as of the beginning of the fiscal year of adoption with disclosure on a prospective basis. The initial adoption of this ASU is not expected to have a material impact on the Company's consolidated financial statements.

In January 2017, the FASB issued ASU No. 2017-04 Simplifying the Test for Goodwill Impairment. This ASU amends Topic 350, Intangibles-Goodwill and Other, which will simplify the goodwill impairment calculation by eliminating Step 2 from the current goodwill impairment test. Under the new guidance, an entity should perform its annual, or interim, goodwill impairment test by comparing the fair value of a reporting unit with its carrying amount. An entity should recognize an impairment charge for the amount by which the carrying amount exceeds the reporting unit's fair value; however, the loss recognized should not exceed the total amount of goodwill allocated to that reporting unit. The ASU eliminates existing guidance that requires an entity to determine goodwill impairment by calculating the implied fair value of goodwill by hypothetically assigning the fair value of a reporting unit to all of the assets and liabilities as if that reporting unit had been acquired in a business combination. This ASU is effective for fiscal years beginning after December 15, 2019 and interim periods within those fiscal years. The initial adoption of this ASU is not expected to have a material impact on the Company's consolidated financial statements.

In February 2016, the FASB issued ASU No. 2016-02, Leases (Topic 842). Under the new ASU, lessees will be required to recognize the following for all leases (with the exception of short-term leases) at the commencement date: (1) a lease liability, which is a lessee‘s obligation to make lease payments arising from a lease, measured on a discounted basis; and (2) a right-of-use asset, which is an asset that represents the lessee’s right to use, or control the use of, a specified asset for the lease term. Under the new guidance lessor accounting is largely unchanged. The new lease guidance simplified the accounting for sale and leaseback transactions primarily because lessees must recognize lease assets and lease liabilities. Lessees (for capital and operating leases) and lessors (for sales-type, direct financing, and operating leases) must apply a modified retrospective transition approach for leases existing at, or entered into after, the beginning of the earliest comparative period presented in the financial statements. The modified retrospective approach would not require any transition accounting for leases that expired before the earliest comparative period presented. This ASU is effective for public companies for fiscal years beginning after December 15, 2018, including interim periods within those fiscal years, with early adoption permitted. However, in July 2018, the FASB issued ASU No. 2018-11, allowing entities to elect a simplified transition approach whereby they would apply the provisions of the new guidance at the adoption date. The Company adopted the new standard on December 30, 2018 and is using the effective date as the Company's date of initial application and consequently, financial information will not be updated and the disclosures required under the this ASU will not be provided for dates and periods before December 30, 2018. The Company has implemented a new software to manage its leases. The Company is assessing the impact of this new standard, specifically on its consolidated balance sheets and disclosures, and does not expect adoption to significantly change the recognition, measurement or presentation of lease expense within the consolidated statements of operations or cash flows. The Company has elected the package of expedients, which permits the Company not to reassess under the new standard the Company's prior conclusions about lease identification, lease classification and initial direct costs. The Company did not elect the use-of-hindsight or the practical expedient pertaining to land easements; the latter not being applicable to the Company. The Company is finalizing the evaluation of the impacts that the adoption of this accounting standard will have on the consolidated financial statements, and is currently estimating approximately $130.0 million to $140.0 million of additional right-of-use assets and liabilities will be recognized in the Company's consolidated balance sheet upon adoption.

FORWARD LOOKING STATEMENTS

This Annual Report on Form 10-K includes “forward-looking” statements that involve risks and uncertainties. The words “believe,” “anticipate,” “expect,” “estimate,” “intend,” “could,” “may,” “will,” “should,” “planned,” “potential,” and sin expressions identify forward-looking statements. All statements other than statements of historical facts included in this report are forward looking statements, including, without limitation, the statements under the sections entitled “Business,” “Management's Discussion and Analysis of Financial Condition and Results of Operations” and “Legal Proceedings” and located elsewhere herein regarding industry prospects and the Company's financial position and the Company's use of cash. Actual results could differ materially from those discussed in the forward-looking statements as a result of certain factors, including many that are beyond the control of the Company. Although the Company believes that the expectations reflected in these forward-looking statements are reasonable, it can give no assurance that these expectations will prove to be correct.

In addition to those factors discussed under the heading “Risk Factors” in Item 1A of this report and elsewhere in this report, and in the Company's other public filings with the SEC, important factors that could cause actual results to differ materially from the Company's expectations include: existing and unknown future limitations on the ability of the Company's direct and indirect subsidiaries to make their cash flow available to the Company for payments on the

Company's indebtedness or other purposes; global demands for bio-fuels and grain and oilseed commodities, which have exhibited volatility, and can impact the cost of feed for cattle, hogs and poultry, thus affecting available rendering feedstock and selling prices for the Company's products; reductions in raw material volumes available to the Company due to weak margins in the meat production industry as a result of higher feed costs, reduced consumer demand or other factors, reduced volume from food service establishments, or otherwise; reduced demand for animal feed; reduced finished product prices, including a decline in fat and used cooking oil finished product prices; changes to worldwide government policies relating to renewable fuels and GHG emissions that adversely affect programs like the U.S. government's renewable fuel standard, low carbon fuel standards ("LCFS") and tax credits for biofuels both in the United States and abroad; possible product recall resulting from developments relating to the discovery of unauthorized adulterations to food or food additives; the occurrence of Swine Flu, Bird Flu, SARs, BSE, PED or other diseases associated with animal origin in the United States or elsewhere, such as the recent African Swine Fever ("ASF") outbreak in China; unanticipated costs and/or reductions in raw material volumes related to the Company's compliance with the existing or unforeseen new U.S. or foreign (including, without limitation, China) regulations (including new or modified animal feed, Bird Flu, PED, BSE or ASF or similar or unanticipated regulations) affecting the industries in which the Company operates or its value added products; risks associated with the DGD Joint Venture, including possible unanticipated operating disruptions and issues relating to the announced expansion project; risks and uncertainties relating to international sales and operations, including imposition of tariffs, quotas, trade barriers and other trade protections imposed by foreign countries; difficulties or a significant disruption in the Company's information systems or failure to implement new systems and software successfully, including the Company's ongoing enterprise resource planning project; risks relating to possible third party claims of intellectual property infringement; increased contributions to the Company’s pension and benefit plans, including multiemployer and employer-sponsored defined benefit pension plans as required by legislation, regulation or other applicable U.S. or foreign law or resulting from a U.S. mass withdrawal event; bad debt writeoffs; loss of or failure to obtain necessary permits and registrations; continued or escalated conflict in the Middle East, North Korea, Ukraine or elsewhere; uncertainty regarding the exit of the U.K. from the European Union; and/or unfavorable export or import markets. These factors, coupled with volatile prices for natural gas and diesel fuel, climate conditions, currency exchange fluctuations, general performance of the U.S. and global economies, disturbances in world financial, credit, commodities and stock markets, and any decline in consumer confidence and discretionary spending, including the inability of consumers and companies to obtain credit due to lack of liquidity in the financial markets, among others, could negatively impact the Company's results of operations. Among other things, future profitability may be affected by the Company’s ability to grow its business, which faces competition from companies that may have substantially greater resources than the Company. The Company's announced share repurchase program may be suspended or discontinued at any time and purchases of shares under the program are subject to market conditions and other factors, which are likely to change from time to time. The Company cautions readers that all forward-looking statements speak only as of the date made, and the Company undertakes no obligation to update any forward looking statements, whether as a result of changes in circumstances, new events or otherwise.

## ITEM 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

Market risks affecting the Company include exposures to changes in prices of the finished products the Company sells, interest rates on debt, availability of raw material supplies and the price of natural gas and diesel fuel used in the Company's plants. Raw materials available to the Company are impacted by seasonal factors, including holidays, when raw material volume declines; warm weather, which can adversely affect the quality of raw material processed and finished products produced; and cold weather, which can impact the collection of raw material. Predominantly all of the Company’s finished products are commodities that are generally sold at prices prevailing at the time of sale. Additionally, with acquisition of foreign entities we are exposed to foreign currency exchange risks, imposition of currency controls and the possibility of currency devaluation.

The Company makes limited use of derivative instruments to manage cash flow risks related to natural gas usage, diesel fuel usage, inventory, forecasted sales and foreign currency exchange rates. The Company does not use derivative instruments for trading purposes. Natural gas swaps and options are entered into with the intent of managing the overall cost of natural gas usage by reducing the potential impact of seasonal weather demands on natural gas that increases natural gas prices. Heating oil swaps and options are entered into with the intent of managing the overall cost of diesel fuel usage by reducing the potential impact of seasonal weather demands on diesel fuel that increases diesel fuel prices. Corn options and future contracts are entered into with the intent of managing U.S. forecasted sales of BBP by reducing the impact of changing prices. Foreign currency forward contracts are entered into to mitigate the foreign exchange rate risk for transactions designated in a currency other than the local functional currency. The interest rate swaps and the natural gas swaps are subject to the requirements of FASB authoritative guidance. Some of the Company's natural gas and diesel fuel instruments are not subject to the requirements of FASB authoritative guidance because some of the natural gas and diesel fuel instruments qualify as normal purchases as defined in FASB authoritative guidance. At December 29, 2018, the Company had foreign currency forward contracts outstanding that qualified and were designated for hedge accounting as well as corn options and forward contracts, heating oil forward contracts and foreign currency forward contracts that did not qualify and were not designated for hedge accounting.

In fiscal 2018, the Company entered into foreign exchange forward contracts that are considered cash flow hedges. Under the terms of the foreign exchange contracts, the Company hedged a portion of its forecasted peptan sales in currencies other than the functional currency through the second quarter of fiscal 2020. At December 29, 2018, the aggregate fair value of these foreign exchange contracts was approximately $1.6 million. The December 29, 2018 amounts are included in other current assets, accrued expenses and other noncurrent liabilities on the balance sheet, with an offset recorded in accumulated other comprehensive loss for the effective portion.

As of December 29, 2018, the Company had the following outstanding forward contracts that were entered into to hedge the future payments of intercompany notes, foreign currency transactions in currencies other than the functional currency and forecasted transactions in currencies other than the functional currency (in thousands):

| Functional Currency | | Contract Currency | | Range of | U.S. |
|---|---|---|---|---|---|
| Type | Amount | Type | Amount | Hedge rates | Equivalent |
| Brazilian real | 46,905 | Euro | 10,233 | 4.26 - 5.04 | $ 12,106 |
| Brazilian real | 408,100 | U.S. dollar | 101,235 | 3.69 - 4.28 | 101,235 |
| Euro | 55,044 | U.S. dollar | 63,381 | 1.13 - 1.21 | 63,381 |
| Euro | 36,950 | Polish zloty | 158,780 | 4.29 - 4.31 | 42,366 |
| Euro | 7,806 | Japanese yen | 1,007,000 | 128.38 - 131.83 | 8,950 |
| Euro | 39,280 | Chinese renminbi | 310,585 | 7.84 - 8.12 | 45,038 |
| Euro | 13,965 | Australian dollar | 21,850 | 1.56 - 1.61 | 16,012 |
| Euro | 3,844 | British pound | 3,452 | 0.88 - 0.91 | 4,408 |
| Polish zloty | 19,278 | Euro | 4,486 | 4.29 - 4.30 | 5,144 |
| British pound | 73 | Euro | 81 | 0.90 | 93 |
| Japanese yen | 229,343 | U.S. dollar | 2,064 | 109.13 - 112.48 | 2,064 |
| U.S. dollar | 648 | Japanese yen | 73,000 | 112.59 | 648 |
| | | | | | $ 301,445 |

The above foreign currency contracts had an aggregate fair value of approximately $2.1 million and are included in other current assets, accrued expenses and noncurrent liabilities at December 29, 2018.

Additionally, the Company had corn options and forward contracts and heating oil swap contracts that are marked to market because they did not qualify for hedge accounting at December 29, 2018. These contracts have an aggregate fair value of approximately $1.1 million and are included in current other assets and accrued expenses at December 29, 2018.

As of December 29, 2018, the Company had forward purchase agreements in place for purchases of approximately $25.2 million of natural gas and diesel fuel and approximately $4.2 million of other commitments. As of December 29, 2018, the Company had forward purchase agreements in place for purchases of approximately $38.7 million of finished product in fiscal 2018 and years beyond.

Interest Rate Sensitivity

At December 29, 2018, the Company's fixed rate debt obligations consist of the 5.375% Notes, the 3.625% Notes and other immaterial debt that accrue interest at an annual weighted average fixed rate of approximately 4.43%. As of December 29, 2018, the Company has long-term debt of approximately $0.6 billion subject to variable interest rates under the Company's Senior Secured Credit Facilities. This portion of the Company's debt is sensitive to fluctuations in interest rates. The Company estimates that a 1% increase in interest rates will increase the Company's annual interest expense by approximately $6.0 million.

Foreign Exchange

The Company has significant international operations and is subject to certain opportunities and risks, including currency fluctuations. As a result, the Company is affected by changes in foreign currency exchange rates, particularly with respect to the euro, British pound, Canadian dollar, Australian dollar, Chinese renminbi, Brazilian real, Japanese yen.

ITEM 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA

INDEX TO CONSOLIDATED FINANCIAL STATEMENTS